

Cambridge International Conference on Open, Distance
and e-Learning

**Internationalisation and Social Justice: the role of
Open, Distance and e-Learning**

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Course evaluation in open and distance learning: a case of distance learning institute, University of Lagos, Nigeria

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Abstract

The aim of this study is to measure students' perceptions of the courses being taken at the Distance Learning Institute of the University of Lagos. The study describes an evaluation of these courses from the students' point of view. To achieve this, questionnaires were delivered to the students offering two major courses, Accounting and Business Administration. The data collected were analysed using descriptive statistics. The results showed that improvements are needed in some critical areas of the institute's course planning and delivery system.

Keywords: Course Evaluation; Open and Distance Learning (ODL); Distance Learners; University of Lagos, Survey.

Introduction

Nigeria is a signatory to some of the world international treaties and charters {for example Universal Basic Education (UBE) and Education for all (EFA)} which seek to promote basic education, mass literacy development and the widening of access to education to include the working adults. In compliance with the activities in the rest of the world, pertaining to open education, Nigeria has embarked on affirmative action to make Distance Education a viable alternative to the provision of learning for skills development to meet the demand of the labour market.

ODL is becoming more imperative in Nigeria than hitherto because as declared by the supervisory and regulatory body on higher education, the National Universities Commission (NUC), 2009):

...the reality in the nation's universities education scenario is characterized by perennial mismatch between the demand and supply side of the access equation. The current situation is that there are thousands of young qualified candidates seeking university admission who cannot be absorbed into the nation's universities.

Some segments of the society have been marginalized; even when they possess the required qualifications, they still cannot enrol in existing universities because of limited facilities and infrastructure and lack of space.

Apart from physical barriers to higher education, there are social barriers. In the words of Brown and Duguid, quoted in Sethy (2008, pg 1) "Minorities, women and the poor have all had to struggle access the distance or access ... to higher education". Distance Learning is regarded as the right approach to redress the imbalance, widen access to higher education and bring social justice to the masses.

In the Nigerian Distance Learning system, higher educational institutions have been directed by the supervisory and regulatory body, the National Universities Commission (NUC) to make changes in their curricula and course programmes to meet the requirements of the Modified Open Distance Learning. This arrangement which relies strongly on ICT and e-learning is being adopted as the best approach. It also requires that different sources are exploited to offer quality education to distance learners, forge partnerships with other institutions to share resources and thereby internationalize education.

A definition of internationalization is provided by Wilson, (2000, pg.1):

The term internationalization refers to the transfer from nation states to international organizations of decision making on policy or even judicial questions...it requires the affirmative action of governments, granting authority to an international body and in general, approving its decisions.

In the attempt to internationalize higher education, the Federal government has mandated the NUC to organize a pilot scheme involving six universities that will lay a foundation and serve as models for 'proper' open distance learning. Faculty members of the pilot universities have been provided four streams of training in the following activities.

- Course material/module learning
- Module uploading on the internet
- Modern interactive techniques and delivery practices
- Use of hardware and software
- Evaluation techniques.

The scheme, a collaboration between the NUC and the Open University of UK, facilitated and partly funded by the British Council, is a process of ensuring standards and entrenching quality control in distance education in Nigeria. The ODL pilot scheme illustrates one of the gains of internationalization of higher education. The definition of internationalization provided by International Higher Education: an Encyclopedia (volume 5) quoted in Butts, is apt and therefore appropriate. It regards certain areas as the ingredients of internationalization which include:

International content of curriculum, international flows of training research, relevant researchers and students and the establishment of a system to guarantee educational assistance and co-operation across national borders.

In order to internationalize ODL, the NUC (2009) has come up with a 'code of good practice': improvement in the quality of teaching and interaction with learners, and course content that is of global best practices. This is one of the methods that will meet learners' needs.

The questions that often arise in the building of quality control in any educational plan are:

- Does the content meet learners' needs?
- How adequate are the infrastructures and facilities?
- Is there variety in learning materials?
- Does faculty devote sufficient time to teaching and material production?
- What is the level of training of faculty in distance learning techniques
- How ODL compliant are self-assessment tests, tutor made tests and assessment techniques?

Feedbacks from surveys of Distance Learners have become necessary in order to enhance the acceptability of ODL as a means of achieving massification of education (Adelowotan & Adewara, 2009). These surveys are often administered to students registered for various courses in Distance Learning Institutions:

Ramsden (1991) developed the first instrument used in student feedback surveys referred to as 'Course Experience Questionnaire' (CEQ). CEQ was used as a performance indicator for monitoring the quality of degree programmes at Australian University (Ashby, Richardson & Woodley, 2011). Ainley and Long (1994) designed a revised version of CEQ which was used "to investigate the extent to which higher education contributes to the enhancement of skills relevant to employment."

In early 2000, McInnis, Griffin, James and Coates (2001) introduced additional scales to CEQ in the areas of course organisation, learning resources, student support, intellectual motivation, graduate qualities and learning community. Apart from CEQ surveys being used in Australia, the National Student Survey (NSS) questionnaire is being used by institutions in the United Kingdom but in the United States of America, the dominant instrument is the National Survey of Student Engagement.

The role of learners in course evaluation

Student feedback questionnaires have been used over the years to measure students' satisfaction with various areas such as access, flexibility and fulfilment of purpose. The challenge of improving the quality of output from distance learning centres all over the world has necessitated the current perception of student as customers or consumers of educational services. Some researchers argue that students should be seen as customers (Lender, 2003; Burwood, 2002) whose expectations are becoming increasingly high. According to Davies (2002), such expectations include:

- Accurate information about their courses, assessment procedures, complaints process, etc.
- A two-way communication process between themselves and with the university.
- Access to cutting edge technology
- Accurate information about their courses assessment procedures, complaints process etc.
- Honesty with respect to whether their need can be met or not
- Flexibility and choice in the delivery of education

It is clear that educational institutions are now concentrating on the improvement of students' experience, having seen the significant role students are playing in assessing the quality of their educational experience (Tricker, T; Rangecrft, M & Long, P (2005). The various methods for assessing student satisfaction range from written questionnaires to focus group discussions and the face-to-face interviews. Gaba & Dash 2004 argued that these methods are valuable tools for obtaining the views of students about their experience in their courses.

Student evaluations have continued to be the basis upon which the evaluation of higher education relies (Kember, Leung & Kwan, 2002). Student evaluation of teaching (SET) involves a series of open- and close-ended questions with respect to course content and teaching effectiveness (Sproule 2002). The questions are usually completed by students anonymously at the end of a term or session.

Therefore, it has been argued that institutions responsible for delivering higher education at a distance should ensure that their activities and their achievements are properly represented in national student feedback surveys (Ashby et al 2011:24).

Distance Learning Institute (DLI)

The Distance Learning Institute (DLI) of the University of Lagos, Nigeria was established in response to the then rightly conceived need highlighted in the 1961 Ashby Report to provide a special non-conventional mode of education which would:

- Fill a gap in the opportunities for higher education for gainfully employed persons in the business/commercial capital of the nation.
- Widen access to and promote an innovative, flexible and cost effective system of education to an increasing proportion of mature persons within and outside the country.

Other reasons for the establishment of DLI include the increasing number of applicants for higher education vis-à-vis the limited spaces available in the conventional institutions in Nigeria. The current student population is over 7,000. The student population is made up of teachers, public servant, military officers as well as employees of private or commercial enterprises. They take

equivalent examinations in courses taken as the full-time students during period of residence which marks the end of a session. These examinations are subjected to the same rules as those of full time students. The same degrees are awarded after successful completion of their courses.

Method

In October 2009, a survey was conducted with the use of questionnaire, distance learners in DLI were asked to say whether they are satisfied or unsatisfied with each of the 18 statements using one of the five possible responses: 'Very Unsatisfied'; 'Unsatisfied'; 'Cannot say'; 'Satisfied' and 'Very satisfied'. The questionnaires were distributed to learners during the six-week residential programme at the end of the session. There were 300 questionnaires sent out to the learners but only 230 questionnaires were returned giving response rate of 77 %. The study was implemented at the University of Lagos because there is an initiative by the National Universities Commission in Nigeria to make the Distance Learning Institute a model Distance Learning Centre. Distance Learners offering courses in Accounting and Business Administration were used in the survey because they constitute about 90 % of the entire students' population of DLI.

Results

TABLE 1: Descriptive statistics of primary data

S/N	Statements highlighted in the questionnaire	N	VU	U	CS	S	VS
1	The Tutors' preparation for interactive sessions	230	(15) 6.5%	(15) 6.5%	(16) 7.0%	(130) 56.5%	(54) 23.5%
2	The Tutors' mastery of course content is	230	(5) 2.2%	(7) 3.0%	(31) 13.4%	(126) 54.8%	(61) 26.5%
3	The Tutors' willingness to assist students in solving problem is	230	(11) 4.8%	(32) 13.9%	(35) 15.2%	(106) 46.1%	(46) 20.0%
4	The comments given on the written assignments are	230	(27) 11.7%	(99) 43.0%	(72) 31.3%	(25) 10.9%	(7) 3.0%
5	The time the assignments are given and returned is	230	(55) 23.9%	(109) 47.4%	(33) 14.3%	(26) 11.3%	(7) 3.0%
6	Weekend interactive sessions are	230	(15) 6.5%	(35) 15.2%	(20) 8.7%	(103) 44.8%	(57) 24.8%
7	The courses taken during residential periods are	230	(7) 3.0%	(17) 7.4%	(88) 38.2%	(72) 31.3%	(46) 20.0%
8	Orientations given towards studies are	230	(12) 5.2%	(33) 14.3%	(53) 23.0%	(76) 33.0%	(56) 24.3%

9	Discussion groups with classmates are	230	(11) 4.8%	(23) 10.0%	(50) 21.7%	(86) 37.4%	(60) 26.1%
10	The language used in the self instructional materials is	230	(60) 26.1%	(125) 54.3%	(27) 11.8%	(12) 5.2%	(6) 2.6%
11	Adequacy of reference books in the course outline is	230	(11) 4.8%	(34) 14.8%	(28) 12.2%	(107) 46.5%	(50) 21.7%
12	Library accessibility and availability of relevant reading materials for courses are	230	(30) 13.0%	(37) 16.1%	(63) 27.4%	(60) 26.1%	(40) 17.4%
13	Coverage of the course content is	230	(29) 12.6%	(45) 19.6%	(44) 19.1%	(83) 36.1%	(29) 12.6%
14	The method of distribution of the course learning materials is	230	(26) 11.3%	(93) 40.4%	(40) 17.4%	(53) 23.0%	(18) 7.8%
15	The method for assignment submission is	230	(34) 14.8%	(117) 50.9%	(52) 22.6%	(21) 9.1%	(6) 2.6%
16	My exposure to study skills that will enable me cope with higher education is	230	(17) 7.4%	(27) 11.7%	(32) 13.9%	(100) 43.5%	(54) 23.5%
17	Contact in the time of sudden difficulty is	230	(31) 13.5%	(48) 20.9%	(81) 35.2%	(48) 20.9%	(22) 9.6%
18	My overall assessment is	230	(16) 7.0%	(27) 11.7%	(43) 18.7%	(102) 44.3%	(42) 18.3%

SOURCE: FIELD SURVEY, 2009.

KEY: N= Respondents; VU=Very Unsatisfied; U= Unsatisfied; CS= Cannot say; S= Satisfied; VS= Very Satisfied.

Discussion

Statement 1 in the above table shows that 54 (23.5%) of the students were very satisfied, 130 (56.5%) were satisfied, 16 (6.9) cannot say, while 15 (6.5%) were both unsatisfied and very unsatisfied. The high level of satisfaction may be due to the fact that the institute holds regular meeting with lecturers to intimate them of their roles and the importance of regular and adequate preparation for classes. Statement 2 shows that 61 (26.5%) of the students were very satisfied, 126 (54.8%) were satisfied, 31 (13.4%) cannot say, while 7 (3.0%) and 5 (2.2%) were unsatisfied and very unsatisfied respectively. Majority of learners were satisfied because majority of the lecturers are specialists in their courses and that they take these same courses with the regular full time students.

Statement 3 shows that 46 (20%) were very satisfied, 106 (46.1%) were satisfied, 35 (15.2%) cannot say, while 32 (13.9%) and 11 (4.8%) were both

unsatisfied and very unsatisfied respectively. This is because the lecturers are encouraged to identify with and always be ready to provide solutions to the peculiar problems of distance learners. Statement 4 shows that 27 (11.7%) were very unsatisfied, 99 (43%) were unsatisfied, 72 (31.3%) cannot say, while 25 (10.9%) and 7 (3.0 %) are both satisfied and very unsatisfied respectively. The high rate of dissatisfaction may be due to the fact that assignments when given on few occasions are not usually returned to students for feedback. Statement 5 shows that 55 (23.9%) are very unsatisfied, 109 (47.4%) satisfied, 33 (14.3%) cannot say, while 26 (11.3%) and 7 (3.0%) were satisfied and very unsatisfied respectively. Also, the high rate of dissatisfaction may be one to the fact that most lecturers give assignments to students during the short residential periods.

Statement 6 shows the respondent of the students to the above questions as follows: 57 (24.8%) were very satisfied, 103 (44.8%) were satisfied, 20 (8.7%) cannot say, while 35 (15.2%) and 15 (6.5%) were unsatisfied and very unsatisfied respectively. The high rate of satisfaction may be due to increasing efforts in monitoring the conduct of weekend interactive sessions. Statement 7 shows that 46 (20%), were very satisfied, 72 (31.3%) were satisfied, 88 (38.2%) cannot say, while 17 (7.4%) and 7 (3.0%) were unsatisfied and very unsatisfied respectively. About 50 % were satisfied because most learners having taken their annual leave during the residential period are able to concentrate on their studies. Statement 8 shows that 56 (24.3%) were very satisfied, 76 (33.0%) are satisfied, 53 (23.0%) cannot say, while 33 (14.3%) and 12 (5.2%) are unsatisfied and very unsatisfied respectively. At the beginning of the sessional residential programme, learners are given orientation towards their studies and examination rules.

Statement 9 shows that 60 (26.1%) are very satisfied, 86 (37.4%) are satisfied, 50 (21.7%) cannot say, while 23 (10%) and 11 (4.8%) are both unsatisfied and very unsatisfied respectively. The learners find discussion groups with classmates very useful particularly during the residential period while statement 10 shows that 60 (26.1%) are very unsatisfied, 125 (54.3%) are unsatisfied, 27 (11.8%) cannot say, while 12 (5.2%) and 6 (2.6%) are both satisfied and very satisfied respectively. The high rate of dissatisfaction may be as a result lack of high rated and up to date self instructional materials on major courses.

Statement 11 shows that 50 (21.7%) are very satisfied, 107 (46.5%) are satisfied, 28 (12.2%) cannot say, while 34 (14.8%) and 11 (4.8%) are both unsatisfied and very unsatisfied respectively. Lecturers always provide a good list of reference books, some of which are available at the University Bookshops while statement 12 shows that 40 (17.4%) are very satisfied, 60 (26.1 %) are satisfied, 63 (27.4%) cannot say, while 37 (16.1%) and 30 (13.0%) are unsatisfied and very unsatisfied respectively. For learners within Lagos metropolis, there is an unlimited access to materials both at the institute's library and at the university's main library.

Statement 13 shows that 29 (12.6%) are very satisfied, 83 (36.1%) are satisfied, 44 (19.1%) cannot say, while 45 (19.6%) and 29 (12.6%) are unsatisfied and very unsatisfied respectively. Most lecturers ensure that the course content is

covered during the weekend and residential interactive sessions. Statement 14 shows that 26 (11.3%) are very unsatisfied, 93 (40.4%) are unsatisfied, 40 (17.4%) cannot say, while 53 (23.0%) and 18 (7.8%) are both satisfied and very satisfied respectively. Most learners were not satisfied because they are expected to personally collect their study materials at the DLI store.

Statement 15 shows that 34 (14.8%) are very satisfied, 117 (50.9%) are satisfied, 52 (22.6%) cannot say, while 21 (9.1%) and 6 (2.6%) are both unsatisfied and very unsatisfied respectively. Majority of students were not satisfied because assignments are submitted to the course lecturer through the class representative, this creates difficulty for students living outside the metropolis. From statement 16, the respondents show that 54 (23.5%) are very satisfied, 100 (43.5%) are satisfied, 32 (13.9%) cannot say, while 27 (11.7%) and 17 (7.4%) are both unsatisfied and very unsatisfied respectively. The high rate of satisfaction may be linked to the fact that distance learning enables learners to sharpen their study skills as they are expected to do more personal studying than the regular students.

Statement 17 shows that 22 (9.6%) are very satisfied, 48 (20.9%) are satisfied, 81 (35.2%) cannot say, while 48 (20.9%) and 31 (13.5%) are unsatisfied and very unsatisfied respectively. Learners are able to contact their course advisers and course lecturers through mobile phones and internet. From statement 18, the respondents overall assessment show that 42 (18.3 %) are very satisfied, 102 (44.3%) are satisfied, 43 (18.7%) cannot say, while 27 (11.7%) and 16 (7.0%) are both unsatisfied and very unsatisfied respectively. Nevertheless, efforts should be geared towards increasing the level of satisfaction of learners in terms of course delivery.

Conclusion and recommendations

Over the past 55 years, student evaluations have been the subject of research. Rovai; Ponton, Derrick & Davies (2005) argued that many research outputs provide evidence that student evaluation forms are valid and reliable measures of teaching effectiveness in most educational institutions.

The results of this study showed that greater efforts should be geared towards producing up-to-date study materials written in learners-friendly language and style. This will be of great assistance to majority of students who are unable to attend the weekend and end-of-the session interactive classes. It is also necessary to make arrangement with the National Post Office and courier companies for onward delivery of course materials to DLI students wherever they are based within or outside the country.

It was discovered from this study that most learners were not satisfied with the process of giving submission and collection of assignments. It is recommended that assignments are to be given to learners at regular intervals during the session and the arrangement for submission and collection of assignments should be co-ordinated. Students should be encouraged to submit their assignments online or courier them to the Institute. It should be noted that comments on assignments are means of correcting, encouraging and mentoring

distant learners. It is therefore important that marked assignments with tutors' comments should be made available to learners before the sessional examinations.

In order to enhance course delivery, modern facilities for online-course delivery are important. Radio broadcast of educational programmes, educational teleconferencing facilities, audio/video CDs as well as computer laboratory with internet facilities are necessary to facilitate effective course delivery in an ideal ODL institution.

DLI operates a study centre at the main campus while the learners are spread all over the country. Learners in remote locations find it different to access available facilities. It is recommended that DLI should consider decentralising the study centre by establishing other centres in the six geo-political zones and further in every state capital in the country. By so doing more people within and outside the country will have greater access to education through the open and distance learning system.

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Cross-border education: a quest for social justice or a case of cultural imperialism?

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Abstract

Cross border education has been recognized as the new phase of education in the third millennium (UNESCO/OCED, 2005). It came as response to the inability of the masses, seeking quality education, to move beyond national borders. At the same time, national ability to satisfy demand for quality education was hampered by resources in terms of provision of content and educators (Block, 2010; Garret, 2005; Knight, 2006).

With several manifestations of cross border education in the developing world and the unidirectional trend of the crossing, several issues started to surface. Concerns about the ability of cross border education to serve higher goals of access, equality and social justice are reinforced by aspects of the digital divide, perceptions on cultural hegemony and the superiority of Western thought (Block, 2009; Leith, 2003; Bourne, 2003).

The study seeks to assess the role of cross border education, supplemented by open, distance and e-provisions, in bringing social justice through educating the underprivileged sections of society in the context of the Arab Open University in Lebanon. Cross assessment would seek to provide a view on the implicit values associated with the adoption of the open system and the transnational material from the UK.

The case study focuses on the experience of senior students in the English programme and argues that the methods used in facilitating learning and the extent of cultural awareness provided through dialogic methods of interaction, contribute to the ways in which learners position themselves within open learning and vis-à-vis the material. Cases of active participation, afforded through open and e-channels, provide evidence that learners reformed their role and overturned earlier judgements on cultural hegemony and the superiority of western thought (Norton, 2000; Pavlenko and Blackledge, 2003; Rampton, 1995), by refocusing structured course themes into studies relevant to the immediate reality or potential future careers. The study concludes that cross-border education has to promote cultural understanding by drawing on cross cultural experiences. Experienced facilitators can bring maximized benefits in open, distance and e-learning.

Introduction

Cross border education has been the hallmark of the new millennium. Cross border education is a term that has gained currency in modern practices. It is

also used interchangeably with “transnational education”, “off shore education” and “borderless education” (Committee of Vice Chancellors, 2002; Knight, 2006). Cross-border mobility of programmes is characterized by qualifications awarded by the foreign country provider, or by an affiliated domestic partner, or jointly (Knight, 2005).

The demand for international education is perceived to increase from 1.8 million international students in 2000 to 7.2 million international students in 2025, in a forecast by Bohn, Daris, Meares and Davis (2002). Part of this demand will be met by student mobility to international venues to receive this education. The other proportion will be receiving cross-border education through the movement of programmes or education providers across national borders. Double/joint degrees are an arrangement where providers in different countries collaborate to offer a programme for which a student receives a qualification from each provider or a joint award from the collaborating partners. Arrangements for programme provision and criteria for awarding the qualifications are customized for each collaborative initiative in accordance with national regulations in each country.

The present landscape offers opportunities and challenges entwined with different perceptions on the dimensions of cross-border education. The growing debate centres around the elusive advocacy of equality and social justice promoted by the phenomena, and reactions concentrating on the implicit connotations of cultural imperialism (Block, 2009; Bourne, 2003; Goodman *et al*, 1997).

Cross border education necessitates the utilization of open, distance and e-provisions in the presentation of material, interaction with learners and participation in virtual models of conferencing and settings. The digital divide between providing countries and developing countries, and the uni-directional flow of the crossing started to be associated with an implicit view on the hidden agenda promoting western superiority and cultural tones of imperialism (Norton, 2000; Pavlenko and Blackledge, 2003).

The flow of culture, ideas, values, knowledge, technology and economy in one direction, across border, is resulting in concerns about the cultural hegemony of western thought. At the same time, utilizing technical support in the provision of cross border education is changing stereotypes in the developing world. It became mandatory, therefore, to examine the rationale and anticipated impact of cross border education

The stark gap between the providers and the service recipient and the strict division in the range and role of stakeholders poses a central challenge to cross border education, as an evolving phenomenon, in the light of the above divisions in roles and participation.

The process of integrating international, intercultural and global dimensions into the purpose and delivery of cross border education can impact perceptions on it. Cross border education can have different effects in different regions and

contexts. It can have both negative and positive consequences, depending on multiple factors.

The study reflects on the experience of senior students in the Arab Open University in Lebanon, in an attempt to relate the contributions of open, distance and e-learning provisions to accessibility, availability, relevance, quality and to wider perceptions of social justice in building human capacity in the national context.

Cross border education

The increase in worldwide demand for higher education has resulted in the diversity of education provisions across national borders. Such provisions included supported and non-profit institutions and private for profit ones. It is important to note that the numbers of students seeking education in foreign countries is still increasing. However, more emphasis is currently being placed on delivering foreign academic courses and programmes to students in their home country. Cross border education encompasses a wide range of modalities in a continuum from face-to-face encounters, taking various forms from students traveling abroad and campuses abroad, to open and distance learning, using a range of technologies including e-learning (UNESCO/OECD, 2005).

In cross border education, recognition is critical to ensuring the legitimacy of the institution and the qualifications provided. The majority of traditional institutions comply with domestic and foreign regulations related to countries of operation. The Observatory on Borderless Higher Education (2002-2004) identifies innovative and new developments in cross border higher education, in the following examples:

- Phoenix University has become the largest private university in the US, with online or on-campus provisions and programmes ranging from associate programmes of nine weeks without certification, to Bachelor, Masters and PhD.
- The Netherlands Business School has recently opened a branch campus in Nigeria (Universiteit Nigenrole).
- Harvard is developing two branch campus initiatives in Cyprus and the United Arab Emirates (UAE).
- The University of Westminster is the key partner to the Kingdom of Bahrain University. It is also involved in similar partnerships in Nigeria, Uzbekistan and Kazakhstan.
- The United Kingdom Open University provides courses, collaborates on new curriculum, validates programmes and shares expertise, through a long list of partnerships in open and distant learning. The Arab Open University is its Middle East partner.

However, there is increasing concern about rogue or low quality providers who are not recognized by the accrediting or licensing bodies in either the providing or receiving countries. Such rogue providers are often accredited by self accrediting groups that came to be known as accrediting mills, or by agencies that sell accreditation.

In addition, there is a worrisome increase in the number of “degree mills” operating around the world (Garret, 2005). These are often web-based companies that are selling degrees based on “Life experience” and not delivering any education program. The above factors have negatively influenced public opinion on the quality provisions of the non-traditional open, distance and e-learning.

The context of the study

The Arab Open University is a non-profit private university founded in 2002 in Kuwait, Jordan, Lebanon, Saudi Arabia, Egypt, Bahrain. In 2009 the seventh branch of Oman was added. Cross-border cooperation with UKOU covers the licensing of material, consultancies, accreditation and validation. The Arab Open University has the faculties of Language studies (English Language), Business studies, Education, Information Technology and Computing.

The Arab Gulf Programme for Development (AGFUND) established in 1980, upon the initiative of HRH prince Talal Bin Abdel Aziz and with the support of leaders of the Gulf cooperation council countries: United Arab Emirates, Kingdom of Bahrain, Kingdom of Saudi Arabia, State of Qatar, Sultanate of Oman and the State of Kuwait, supported and financed the project, with a focus on human development, poverty alleviation and improved living conditions for vulnerable groups. Through partnership with established providers, the United Kingdom Open University, AOU was able to offer programmes and courses across national borders of seven countries to meet the demand for higher education, from disadvantaged groups.

The mission statement of the Arab Open University explicitly identifies concern for improving access and outreach to marginalized communities and people. Technology-mediated learning supplements face to face tutorials and provides alternative and virtual forums to deliver education themes (Al-Khatib, 2011). The innovative nature and scope of cross-border education and the role of technology in supporting its evolvement identify some challenges for stake holders associated with implicit assumptions of western superiority, cultural imperialism and digital obstacles (Leith, 2003; Block, 2010).

The quest for social justice

Through utilizing multimodal methods of education, the Arab Open University was able to offer flexibility and provide access to marginalized sections of the society residing in geographically remote areas. E-provision included support material, tutorial outlines, virtual conferencing, online upload and download portals for assignment work that reduced face to face attendance requirements and daily commuting from rural areas.

The university invested much in e-provision to create suitable technologic infrastructure that can support e-learning. Supported tuition was offered to provide access to socially disadvantaged groups on lower income as well as to women and mature students to gain access to equal opportunity and quality education.

Figure OneStatistics: **Number of male and female students in each branch:**

Branch	Females	Males	Total	Percentage of females	Graduates
Kuwait	2989	2297	5286	56.55%	2691
Jordan	1447	953	2400	60.29%	2719
Lebanon	1745	2291	4036	43.24%	1175
Bahrain	714	740	1454	49.11%	355
Egypt	683	780	1463	46.68%	296
KSA	6530	6721	13251	49.28%	1647
Oman	821	781	1602	51.25%	—
Total	14929	14563	29492	50.91%	8883

www.aou.org

The quest for social justice included reducing social discrimination based on income and elite education provision by providing quality education, accessible to women, a low income populace, mature candidates and applicants from rural areas. Quality British programmes were validated and assured by reputable academic bodies (OUVS) and increased employability opportunities. The provision of IT support and technical infrastructure provided access to the wider web as well as virtual resources at no extra cost.

The double degree programme on offer provided an advantage in the world of work above other graduates, with single degree. The movement of knowledge, programmes, providers and curriculum across national and regional jurisdictional borders, facilitated by the adoption of open, distance and e-learning, were ideologically related to higher goals of inclusion and social justice.

Cultural imperialism

The uni-directional flow of information, material and guidance from cross border providers in the west and requests for strict adherence to the prescribed programmes to fulfill degree requirements brought about implicit restlessness associated with perceptions of unease related to cultural hegemony. Assumptions on the superiority of material propagated, in some contexts, by inexperienced facilitators, contributed to negative attitudes associating the system with dichotomies of superior and inferior cultures.

The case study

The case study focuses on the role of open and e-provision in developing perceptions of social justice. The study triangulates the perspectives of participants, tutors and the researcher in evaluating the opportunities afforded by open and e-learning in relation to education and independent learning.

The participating students were selected from seniors in their final year. They are required to complete a research project that involves resorting to open and e-provisions. Extensive technical support was provided for faculty and student to facilitate progression with open and e-learning. The Appendix describes the last access that participants performed in relation to their discussion forum.

The group comprises 36 participants and 3 monitoring tutors. They have a discussion forum to support their independent study. The forum provides an opportunity to exchange views and gain peer support, in open and electronic contexts. An activity report is extracted every week to monitor the involvement of the group.





Most learners made use of open and e-provisions to take part in electronic and open discussions. Twenty-three members out of 39 participants were accessing the discussion forum throughout the past week, as per the monitoring report. Eight participants were active during the past two weeks and six participants never accessed the discussion forum.

Participants were organized into four forum groups, based on their selected project macro-themes. However, the facilitator coached the group so that they can reformulate the overall course themes into areas of relevance to their immediate context.

Figure 2

Weekly outline

extracted Saturday 30 April 2011

-  [News forum:](#)
-  [Forum 1: Functional Linguistics Group \(Systemic Functional Grammar\)](#)
-  [Forum Two; Gender Theory \(Sociolinguistics\)](#)
-  [Forum Three: Language and Power \(Critical Discourse Analysis\)](#)
-  [Forum Four: Language Acquisition](#)




Participants chose the project titles that reflected either immediate interests or future job orientation. The open method offered the learners the opportunity to take the lead in their learning. They actively sought to reform the generic modules and provided themes that they perceived more relevant to their concerns. The open system helped “liberate” the learners from tutor-centred instruction and gave them more space to negotiate their goals. They were more involved in the learning process and became partners in it.

Figure 3

Forum	Description	Discussions	Subscribed
News forum	General news and announcements	2	Yes
Forum 1: Functional Linguistics Group (Systemic Functional Grammar)	May Hamdan <i>Subtitling in 2012</i> (a study of authentic translation in films from English to Arabic)	4	Yes
	Rana Demashk <i>Functional Analysis of Rap</i> (Tu Pac <i>Changes</i> and Eminem <i>Foolish Pride</i>)		
	Abir Marji <i>Linguistic Features of E-mail Messages</i>		
	Sahar Youssef How is the writer's persona preserved in translation?		
Forum Two; Gender Theory (Sociolinguistics)	Elham Moammar <i>Gender Differences in Political Speeches</i> (Luther King and Thatcher)	2	Yes
	Therese Abi Frem Comparative Analysis of Gendered Language in <i>Men's Fitness</i> magazine and <i>Fit 'n' Style</i> (ladies' magazine)		
Forum Three: Language and Power (Critical Discourse Analysis)	Loubna Kanj Power in Discourse and Power Behind Discourse (Bill Clinton Court Case)	6	Yes
	Grace Abou Zaid Racial Discourse in Lebanon		
	Fahda Mukaddem CDA of Arabic and English news texts on CNN websites (reporting on Libya and Egypt uprising)		
	Nidal Kawsan <i>The Role of Advertisement in Consumerism ...</i>		
Forum Four: Language Acquisition	Youssef Shaalan <i>Bilingual Acquisition (in 7-12 year old children)</i>	3	
	Denise Abi Aad The influence of the French language on writing in English (case study of 10 year old Lebanese trilinguals)		
	Sara Raydan Language Analysis of English writing, case study of Grade 9 students.		
	Dalia Hazimeh CMC ...		


Noticeable are titles contributing to racial discourse in Lebanon or critical discourse analysis of Arabic and English news texts on CNN reporting on Libya and Egypt uprisings, in grounding theory into contextual applications. The postings added by the groups (Figure 4) confirm the active role assumed by the learners.

Figure 4

Add a new discussion topic			
Discussion	Started by	Replies	Last post
Posting on Writer's Persona	 Sahar G. Youssef 090776	2	Sahar G. Youssef 090776 Sun, 24 Apr 2011, 09:20 PM
Posting on subtitling in 2012	 May H. Hamdan 080793	3	May H. Hamdan 080793 Fri, 22 Apr 2011, 01:42 PM
Posting on Functional Analysis of Rap (Tupac "Changes" and Eminem "Foolish Pride")	 Rana F. Demashk 090023	2	Rana F. Demashk 090023 Fri, 22 Apr 2011, 11:04 AM

Example: Extract A

Display replies in nested form
Move this discussion to ...


Posting by [Sahar G. Youssef 090776](#) - Sunday, 24 April 2011, 09:20 PM

Language users carry more than just the mere literal meaning in their discourse (either spoken or written); in fact, the choices they make on the syntagmatic and paradigmatic axes reveal several implicit meanings and details which are analysed and detected through the Systemic Functional Linguistics of Halliday that studies language according to its functions.

The research that I am conducting will try to study SFL in more applied contexts such as translation. I will try to answer the following questions:

- Is the writer's persona preserved in translation and how?

Do the translator's lexical selections compromise the writer's persona in the target text?

Is the stance of the writer transmitted in the target text [stance refers to the attitude (positive, negative, neutral), modality (deontic, epistemic)]?

Is personalisation in the source text marked in the target language? How

inclusive pronouns, pronouns of solidarity and direct addressing are reflected in the target text?

Is the standing of the author the same in the target text as in the source text?

Is the authenticity of the text related to the writer's persona?

Does the target text maintain the relationship established between the writer and the reader in the source text?

What are the effects of cultural norms on the writer's persona in the target text?

In order to find answers for the questions above, I will analyse the writer's persona of a text chosen from a book related to social studies and then translate the same text into Arabic (in three versions done by asserted translators) and study the text's translation to analyse the writer's persona in the target texts.

Example: Extract B

Posting by Rana F. Demashk 090023



Forum 1: Functional Linguistics Group (Systemic Functional Grammar) -> Functional Analysis of Rap (Tupac "Changes" and Eminem "Foolish Pride")

by [Rana F. Demashk 090023](#) - Friday, 22 April 2011, 11:04 AM

My Project

Music has always touched hearts and minds. People have expressed the social ills of their particular era through popular music. Therefore, rap is a tool which allows the society to voice out thoughts about personal frustrations and sufferings. That is why, I decided to study how rap is not just some words said or introduced, but it is a worthy case in studying the language especially the lexicogrammatical features that rappers use in their songs to reflect specific situations or events they passed through. When rappers use language to express meaning, they do it in specific situation and for specific purpose "persuade, reject, etc..." Several questions are raised in this research: What structural features are placed in rap? Are they constant? Do they indicate any specific genre? What are the overall lexical and syntactical categorizations? Does it have any racial significant? And how?

According to Halliday, "language enables human beings to build a mental picture of reality to make sense of what goes on around them and inside them." And this is the case of rap songs.

According to Alice Deignan, metaphors help people to talk about difficult, emotionally intense or uncommon experiences. Like the case of Eminem's rap song.

Deignan explains that speaker or writer may have chosen particular ways of expressing ideas metaphorically to convey an ideological or persuasive point. That is what the two rappers use to highlight their own experiences in order to deliberate a message or even to persuade others.

According to Fairclough, the conventions for speech acts which form part of a discourse type embody ideological representations of subjects and their social relationships, asymmetries of rights and obligations between subjects, these may be embedded in asymmetrical rights to ask questions, request action, complain, and asymmetrical obligations. Rap carries inside it speech acts through different representations like, request actions to end some case or raise other, complain on a specific issue (like racism, cheating,...), or ask for rights (like black people asking to be treated like whites)...etc.

The data that will be collected are written data of lyrics. The two lyrics belong to different rappers Eminem (the white rapper), and Tupac (the black rapper).

[Edit](#) | [Delete](#)
[See this post in context](#)

Extract A reveals confidence in owning the knowledge propagated in the discussion as well as cultural awareness related to the subject under discussion.

Extract B outlines, with confidence, racial problems that surface through language use.

In both extracts, learners comfortably discuss their themes, utilizing taught linguistic theory. They refer to social and social issues, revealing their competence in the subject of discussion. They take the initiative, use examples and expand on their area of analysis. Their discussion reveals their understanding of the taught material from the British programme. They present themselves as partners in the learning process. The evidence they select does not contribute to views on cultural imperialism but rather to an understanding of problem areas in other cultural contexts. The result is widening intercultural understanding, afforded through cross border education.

Conclusion

Open and e-learning in this case study did not substitute indigenous knowledge by an alien one. On the contrary, open and e-learning facilitated the exchange of knowledge and in most cases contributed to a growing interest and active participation through improved electronic skills.

Open and distant learning contributed to academic quality. Learners took the initiative in the learning process through forum participation and extensive postings.

New ways of participating in learning on the part of students are also supported by new ways of monitoring and recognizing learning, on the part of tutors. The role of open, distance and e-learning in this study has brought new attitudes towards learning and the material associated with cross-border education brought about cross cultural understanding, e.g. racial problems in Lebanon, racial problems in the west.


Sources of potential learning have been expanded through open and e-platforms. Learners were taking control and managing their own learning. Quality is resulting from the interaction of cross border education, technology and learners in this inclusive cross-cultural forum.

Depending on the delivery mode and the guidance and experience of the facilitator, cross border education can be the basis for innovation social justice and cultural understanding of the site or cultural imperialism.

Appendix

Last access report to Group Monitor

	Dr. Hayat Al-Khatib	Beirut	Lebanon	Now	<input type="checkbox"/>
	Dana A. Kahil 091742	Beirut	Lebanon	7 hours 27 mins	<input type="checkbox"/>
	Zeinab B. Dashan 008563	Beirut	Lebanon	11 hours 40 mins	<input type="checkbox"/>
	Sarah F. Raydan 080951	Beirut	Lebanon	16 hours 9 mins	<input type="checkbox"/>
	Mirna G. Shmait 100182	aley	Lebanon	18 hours 50 mins	<input type="checkbox"/>
	Abeer H. Marji 081420	Beirut	Lebanon	19 hours 32 mins	<input type="checkbox"/>
	Elham A. Moamar 090515	Beirut	Lebanon	21 hours 42 mins	<input type="checkbox"/>
	Fahda M. Mokaddem 091016	Beirut	Lebanon	1 day 8 hours	<input type="checkbox"/>
	Stephanie S. Sleiman 081413	Beirut	Lebanon	1 day 8 hours	<input type="checkbox"/>
	Lea J. Hanna 090080	Beirut	Lebanon	1 day 8 hours	<input type="checkbox"/>
	Therese T. Abi-Frem 081402	Beirut	Lebanon	1 day 8 hours	<input type="checkbox"/>
	Dalia K. Hazimeh 091311	Beirut	Lebanon	1 day 16 hours	<input type="checkbox"/>
	Nidal M. Kawssan 008824	Beirut	Lebanon	1 day 19 hours	<input type="checkbox"/>
	Grace Y. Abou-Zeid 081483	Beirut	Lebanon	1 day 19 hours	<input type="checkbox"/>
	Amani A. Abi-Hussien 091509	Beirut	Lebanon	1 day 20 hours	<input type="checkbox"/>
	Sahar G. Youssef 090776	Beirut	Lebanon	1 day 23 hours	<input type="checkbox"/>
	Denise A. Abi-Aad 090687	Beirut	Lebanon	3 days 11 hours	<input type="checkbox"/>
	Rana F. Demashk 090023	Beirut	Lebanon	3 days 14 hours	<input type="checkbox"/>
	Shadi R. Al-Sayegh 080345	Beirut	Lebanon	3 days 16 hours	<input type="checkbox"/>
	May T. Al-Najjar 080818	Beirut	Lebanon	3 days 17 hours	<input type="checkbox"/>

	Fatima M. Hijazi 081221	Beirut Lebanon	3 days 17 hours	<input type="checkbox"/>
	Maya Y. Amineddine 090334	Beirut Lebanon	3 days 20 hours	<input type="checkbox"/>
	Loubna A. Kanj 101206	Beirut Lebanon	3 days 22 hours	<input type="checkbox"/>
	Hassan K. Al-Sagheer 080556	Beirut Lebanon	7 days 17 hours	<input type="checkbox"/>
	May H. Hamdan 080793	Beirut Lebanon	7 days 19 hours	<input type="checkbox"/>
	Rola E. Radwan 081421	Beirut Lebanon	8 days 16 hours	<input type="checkbox"/>
	Amani N. Abou-Orm 007355	Beirut Lebanon	10 days 1 hour	<input type="checkbox"/>
	Diaa A. El-Mouallem 080686	Beirut Lebanon	10 days 12 hours	<input type="checkbox"/>
	Rami R. Abi-Ramia 081507	Beirut Lebanon	10 days 16 hours	<input type="checkbox"/>
	Mr. Ralph Suleiman	Beirut Lebanon	11 days 17 hours	<input type="checkbox"/>
	Ms. Mirna Abdel-Malak	Beirut Lebanon	15 days 22 hours	<input type="checkbox"/>
	Alissar W. Salha 081146	Beirut Lebanon	Never	<input type="checkbox"/>
	Fatena A. Baroudi 090929	Beirut Lebanon	Never	<input type="checkbox"/>
	Nada A. Al-Gharib 008620	Beirut Lebanon	Never	<input type="checkbox"/>
	Racha A. Osseily 091168	Beirut Lebanon	Never	<input type="checkbox"/>
	Mariam A. Omary 081658	Beirut Lebanon	Never	<input type="checkbox"/>
	Rachid W. Dagher 080139	Beirut Lebanon	Never	<input type="checkbox"/>
	Lama J. Al-Masri 090045	Beirut Lebanon	Never	<input type="checkbox"/>
	Waad W. Awwad 080544	Beirut Lebanon	Never	<input type="checkbox"/>

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The Nigerian Woman: creating avenues for educational and political equality through ODEL

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Abstract

The development of the family unit and the nation is largely dependent on equal participation by women and men. However, economic, socio-cultural and religious factors have prevented the achievement of male and female equality in Nigeria, especially in the area of politics and education.

This paper examines the potential of Open, Distance and E-Learning (ODEL) to facilitate educational and political equality for Nigerian women. In the first part, we shall examine the typical perception of the woman's place in the society and the foundation of such perception. Thereafter we shall consider the factors militating against the attainment of educational and political equality for Nigerian women and point out the benefits of ODEL for the achievement of educational and political equality in Nigeria.

1. Introduction

The concept of women's equality has generated a lot of interest in Nigeria. With each successive administration, a new 'women friendly' slogan is coined. Though slogans like 'Better Life for Rural Women', and 'Beijing Conference' have become associated with women's equality in Nigeria, women remain marginalized especially in the areas of politics and education.

The focus of this paper is on the state of political and educational equality of the Nigerian woman and the role of ODEL in achieving political and educational equality for Nigerian women. We shall be considering the unique socio-cultural, economic and religious pressures which have resulted in the marginalisation of the Nigerian woman and how ODEL can help to improve the woman's access to education in order to achieve some level of equality.

2. Typical Nigerian Perceptions of the role of the Woman

The phrase '*behind every successful man is a good woman*' typifies the typical Nigerian perceptions of women. She is to be 'behind', never 'beside' or 'before'. Apart from wife/homemaker, little importance is attached to any other role the woman plays in society.

Though this perception is gradually being corrected, progress has been slow for Nigerian women. Female children are still regarded as 'half current' (low voltage) and various social rights remain out of reach.

One can point to several Nigerian women of influence who operate on equal terms with men but they are still quite few. Women remain subordinate to men with little influence in politics, except to support men where numbers are required. In education, priority is usually given to men because of the cultural perception of their role as leaders. Where women are educated, they are usually trained in more 'domestic' courses like Home Economics in keeping with their role as wives/homemakers.

The above perception stems from the patriarchal nature of Nigerian society. Culturally, all major rights are reserved for men. The majority of Nigerian communities are ruled by kings, supported by an inner circle of male high chiefs. Though some male dominated practices have been discontinued, others have been validated by Nigerian courts. In *Osula v. Osula* (1995) 9 NWLR Pt. 419 p.259, the Supreme Court held that a testamentary bequest of the 'igigobe' (the principal ancestral home) to any child other than the eldest surviving son is invalid and inconsistent with Bini customary law.

3. Statutory provisions for Political and Educational Equality in Nigeria

a. Political Equality

S.40 of the 1999 Constitution guarantees every person the freedom to form or belong to any political party for the protection of his/her interests. Also, S.42 guarantees all Nigerian citizens freedom from discrimination on grounds of sex, political opinion, religion, ethnicity or circumstances of birth.

Similarly, Article 7 of the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) enjoins state parties to ensure that women can vote in all elections and public referenda and be eligible for election to all publicly elected bodies. State parties are also to guarantee that women can participate in the formulation and implementation of government policy, and be allowed to hold public office.

Nigerian women were granted voting rights in 1956. In practice, however, female voting rights remain subject to male direction. In Northern Nigeria women were prevented from voting during the 1957 and 1976 elections on religious grounds. Though allowed to vote in the 1979 elections, they were directed by men on where to cast their votes (Natsa 2011). Today, Nigerian women may not be so openly controlled regarding voting but they generally pursue their husbands' political interests. Though most political parties have women's wings, the women only engage in praise singing, 'mobilisation' and fund raising during campaigns. Their significance is definitely not reflected in the composition of electoral candidates or political office holders.

Women make up 49.2% of the Nigerian population (National Population Commission 2006). However, despite the recommendation of the Committee on the Elimination of Discrimination against Women (CEDAW) that 30 - 35% of political positions should be reserved for women, less than 5% of Nigerian women are political office holders. There has never been an elected female governor in Nigeria (Dame Virginia Etiaba, former deputy governor of Abia

State, held the governorship position for a period of 3 months, following the impeachment of Governor Peter Obi. She handed back power to him following a court decision that the impeachment was illegal) while a total of 7 states in Nigeria have female deputy governors. It is not likely that these figures will improve post-election in 2011 because none of the major political parties in Nigeria has adopted a female candidate for presidential, vice-presidential or governorship positions.

b. *Educational Equality*

S. 18 of 1999 Constitution states that the Nigerian government shall direct its policy towards ensuring that there are equal and adequate educational opportunities at all levels. The Government shall also strive to eradicate illiteracy and provide (where practicable) free, compulsory and universal primary education, free secondary and university education, and a free adult literacy programme.

In line with S. 18(3) (a) of the Constitution, S.2 of the Universal Basic Education (UBE) Act 2004 provides for free, compulsory and universal basic education for every child of primary and junior secondary age in Nigeria. Where parents fail to ensure that their children and wards attend and complete their primary and junior secondary education, they may be reprimanded or imprisoned.

Also, by Article 10 of CEDAW, state parties are to provide equal access to facilities, teachers and curricula for women as for men. State parties must also eliminate stereotyped concept of roles of men and women at all levels and in all forms of education and work towards the reduction of female student drop-out rates.

Notwithstanding the above, Nigerian women have less access to education than men. Estimates show that about 47% of all Nigerians are illiterate with 60% of this number being women (National Bureau of Statistics 2010). Though UBE has driven up national literacy rates, female access to education remains low especially in Northern Nigeria where more male than female children are registered for basic education (Universal Basic Education Commission 2009). In Zamfara and Sokoto States for instance, total female registration is approximately 44.3% and 44.2% respectively. UNESCO estimates that there is 97% possibility that Hausa girls (from Northern Nigeria) between 17 and 22 years will have less than 2 years of education (EFA Global Monitoring Report 2010).

The table below gives a summary of literacy statistics for primary and secondary education in Nigeria

	Male	Female
Youth (15-24 years) literacy rate, 2004-2008 (%)	78	65
Primary school enrolment ratio 2005-2009 (%)	64	58
Primary school attendance ratio 2005-2009 (%)	65	60
Secondary school enrolment ratio 2005-2009 (%)	29	22
Secondary school attendance ratio 2005-2009 (%)	45	43

Source: UNICEF

For higher and tertiary education, the gap between female and male access is wider, especially in those regions where post primary education is fee paying. The reality in most parts of Nigeria is that the higher the level of education, the less access women have. Out of 1932 learners admitted by the National Open University of Nigeria in the 2003/2004 session, only 357 were female. For 2005/2006, there were 1556 female learners out of 4811 while 3,729 females were admitted in 2007/2008 out of 12,686 (Ige and Ajadi 2008).

4. Factors militating against Political and Educational Equality for Nigerian Women

Experience from developed nations such as the United Kingdom and Australia has shown that the first step to achieving political and educational equality is to provide the enabling legislation. As shown above, Nigeria already has those in place. However, practical factors continue to militate against the achievement of political and educational equality in Nigeria. They can be divided into two broad groups:

a. Socio-cultural Factors

As stated above, cultural beliefs and the patriarchal system influences Nigerian daily life. In rural areas, having a male child remains the priority and female education is limited to the extent required for good homemaking. Though urban areas appear to have developed beyond this, the reality is that cultural perceptions influence social interactions even amongst the educated. For instance, in the workplace male employees usually show more respect to male bosses than female bosses. Similarly, married females are accorded more respect than unmarried females because of the general notion that they are 'under a man'.

Early marriage (a prevalent customary practice) militates against post basic female education. UNICEF estimates the rate of child marriage in rural areas at 50%. Owing to this practice, many females are either not educated or drop out

of school after marriage because of time constraints associated with their domestic responsibilities.

Higher education is also discouraged because of the misconception (especially amongst the illiterate) that highly educated women are unlikely to marry on time or be submissive to their husbands. It is, however, worthy of mention that female education (especially at higher levels) is encouraged amongst the Igbos of South Eastern Nigeria. They give more priority to female education than male education because of the value an educated wife adds to a man's status. Also, the more educated an Igbo woman, the higher the bride price she attracts. Accordingly, whilst the male child is sent to learn a trade, the female child is sent to school.

There is also the fear that educated women fail in their marriage because their domestic responsibilities suffer at the expense of their career. In Nigeria, it is believed that a married woman's first duty is to her home. Accordingly a woman, no matter how successful she is in her career, may be deemed a failure if she does not put her domestic duties first. Many women have been forced to abandon their quest for further education in order to remain married.

In Nigerian communities, culture and religion remain interrelated. Though many Nigerians have abandoned traditional religion in favour of Christianity or Islam, the majority of Nigerians still practise modern religion in the light of preconceived cultural notions. For instance, the typical Nigerian interpretation of a good Christian wife is one who is subordinate and totally obedient to her husband. Notwithstanding her personal interest or convictions, she, as the 'helper', must help her husband achieve his purpose in life. Most Nigerian Christians can identify the qualities of the 'virtuous woman' (Proverbs 31:11-31). Following customary beliefs, she is expected to be enterprising and totally supportive of her husband whether he plays his role as husband/bread winner or not.

Cultural perceptions have also coloured Nigerian women's attitude to social justice. Due to the notion of male priority, female enjoyment of social rights may depend on the extent to which such rights will further the interests of men and social justice is perceived as a favour done to women instead of their right. Accordingly, social rights become an end in themselves. In Nigeria today, the recommended 35% female political representation has become a campaign slogan with more emphasis placed on numbers instead of what the numbers seek to achieve, i.e. equality for Nigerian women and development for the society.

b. Economic Factors

About 70% of Nigerians live under the poverty line (CIA World Fact book 2006 estimates). With many needs requiring satisfaction, economic considerations influence access to education especially at post-primary and tertiary levels. Accordingly, in line with the cultural beliefs earlier mentioned, educational priority is usually given to male children to improve their earning power and prepare them for their role as husbands and fathers. For females, the belief that

they will eventually marry and 'come under' their husbands means that education is limited to the basics that will assist them in their future 'vocation' as wives and homemakers.

Another influence of economics on education can be seen in the typical Nigerian perception of education. Education is generally perceived necessary, only to the extent that it contributes to one's earning power. Due to this perception, people only study subjects perceived to improve their employability and earning power. For this reason, social justice education is not given much priority because it is not deemed necessary for employability or increased income.

5. Improving Political and Educational Equality through ODEL

Education is important in achieving social justice for women. As stated by the Beijing Platform for Action it is an essential tool for achieving the goals of equality, development and peace. Statutory guarantees, though important, may not translate to practical success if the beneficiaries do not know of those rights and how to enforce them.

Considering that culture and basic economics play a significant part in determining educational and political access, ODEL is a useful alternative to formal education for the achievement of equality, while gradually rebutting faulty cultural notions and preserving positive cultural values.

By its open and flexible nature, ODEL is accessible to a wide spectrum of beneficiaries regardless of their location or domestic responsibilities. Timing being a major impediment for Nigerian women because of the premium placed on domestic responsibilities, ODEL eliminates the need for the strict time regimen operative in formal education and allows women the freedom to structure their study periods to enable them achieve educational equality without abandoning their domestic responsibilities. The more women are able to improve themselves educationally without abandoning their domestic responsibilities, the less there will be cultural insistence on domesticity to the detriment of women's development.

Nigerian women are typically social and interdependent. It is commonplace to find female cooperatives, social and religious groups with meetings held at regular intervals for exchange of ideas, mutual support and development. These group meetings and social interactions can be used as effective platforms for ODEL. In India, such groups formed the platform for very successful microfinance initiatives. They can be explored for women's education in Nigeria.

ODEL is significantly cheaper and more affordable than formal education. Reduced costs will facilitate access to education, especially for those Nigerian women who had been denied education for economic reasons. To further reduce costs, ODEL study groups can be organised to educate female social groups on their rights and counsel them on avenues for self development and achievement of equality.

Course structures and admission requirements for ODEL are also more flexible than in formal educational institutions. Instead of the traditional 'degree' or 'diploma' courses, certificate courses with more flexible contents are available through ODEL institutions. They can facilitate social justice education for women. Furthermore, some admission requirements may be waived by ODEL institutions if candidates possess useful experience. This will facilitate access to education.

Considering the multiplicity of languages in Nigeria, ODEL is more adaptable for the instruction of learners in Nigerian languages other than English language. This will be particularly beneficial for social rights instruction for women who may not possess the linguistic capacity for instruction in English language.

6. Conclusion

The Nigerian woman in her traditional role contributes significantly to the development of the family unit and society. Given a chance, she can do more if given equal educational and political access to her male counterpart. Having taken the first step in providing the enabling legislation, practical steps must be taken to achieve the equality goals required for development.

ODEL provides a useful tool for the achievement of educational and political equality, while protecting the role of the woman in preserving and developing the family unit. It should be encouraged by government and civil society as it provides a flexible, affordable and practical alternative to formal education.

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Open distance and e-learning for social justice: best practice for capacity building

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Abstract

One of the challenges of Education for All (EFA) is the call for an urgent provision of qualitative education. This need is expected to provide learners with employable skills as the global quest for technological advancement necessitates the need to seek for creative rational knowledge as a measure for capacity building. One of the platforms through which this could be achieved is Distance Learning Open Education. In response to this, the University of Ibadan established a Distance Learning Centre to develop human capital in areas either not covered by conventional means of education or in entirely new areas. In doing this, three imperative areas are created: to broaden access to qualitative education; to provide needs-driven and skills-based education; and to provide globally competitive education. This paper, therefore, examines in content and context the vision, goals and objectives of open distance and e-learning education with a view to reposition the centre for best practice and global challenges.

Keywords: Open distance education; capacity building; Access to education; Nigeria.

Introduction

The Committee of Nations recognizes education and skills development as an important and integral part of global economic integration. Consequently, policy frameworks and strategies have been developed to promote globally integrated and harmonized education and training systems, which could be credited as being responsible for the considerable progress in education and training provision experience in diverse nations of the world. In Nigeria, education is an instrument for nation building; and has been used for promoting socioeconomic, political and cultural development. Based on this, tertiary education is geared towards educating future leaders and developing high-level technical manpower that could underpin economic growth and development (Odekunle, 2001). This is in consonant with the philosophy of education in Nigeria, which is based on equal educational opportunities and egalitarianism (National Policy on Education, 1998). Fafunwa (2008) posits that for any meaningful and sustainable national development, education must be given a priority attention. This presupposes then that nation building depends on the quality of education given to the citizenry.

Nigeria is the most populous nation in sub-Saharan Africa with over 140 million people (NPC, 2007), occupying a landmass of about 923,768 square kilometers

and with over 274 ethnic groups making up the federation. The social and economic dimensions of providing education for the population, within the context of prevailing national circumstances of dwindling financial and other resources in the face of developments needs are demanding and colossally heavy. The ever-continuing growth in Nigeria's population, the attendant escalating demand for education at all levels, the difficulty of re-sourcing education through the traditional face-to-face classroom bound mode, and the compelling need to provide education for all (EFA) irrespective of environmental, social or cultural circumstances have meant that the country must of necessity find the appropriate and cost effective means to respond adequately to the huge unmet demand for education.

Saint, Hartnett and Strassner (2003) as cited in Ekundayo and Ekundayo (2009) affirm that education in general, and higher education in particular, is seen as crucial to a nation's competitiveness in the knowledge economy. Likewise, Sharma, Ekundayo and Ng (2009) suggest that a nation's route to becoming a successful knowledge economy is its ability to also become a learning society. This brings to bear the understanding of the fact that university education is a critical and strategic component of development, especially in developing country like Nigeria. Since 1948 when the first university was established at Ibadan, the nation has witnessed the establishment of more universities which are owned by governments, corporate organizations, and private individuals. However, due to consistent increase in population, dynamic change in world order, crave for technological and economic growth, social development and political emancipation has led to an increase in the demand for higher education in developing countries.

Affirming this, Czerniewicz and Brown (2009) contend that the rapid worldwide social and economic transformation that is captured in the notion of globalization has had an impact on higher education institutions, with increased pressure to produce more graduates with high-level knowledge skills. However, capacity building for higher education in developing countries is being thwarted by seemingly long-lived problems of equity, access, finance, quality, governance, efficiency, human capital (Perraton, 2007a; Saint, Hartnett & Strassner, 2003). This paper, therefore, examines in content and context the vision, goals and objectives of open distance and e-learning education in Nigeria with a view to repositioning the Distance Learning Centre of the University of Ibadan for best practice and global challenges.

The Concept of Open and Distance Learning Education

Open and Distance Learning (ODL) evolved from correspondence learning and from print materials as mode of contents delivery in education. It has metamorphosed into distance education, online education, e-learning, or online education today. It is the mode of delivery that has made the physical distance from a university or tertiary institution an insignificant constraint in the access to higher education as instructional materials are now easily converted into cost-effective and portable audio, video and mobile formats. The advent of the internet has also given credence to this new way of delivering education contents to disperse students in remote geographical areas globally. This

satisfies the UNESCO's (2002) position on open and distance learning educational system as one that focuses on opening access to education and training provision, freeing learners from the constraints of time and place and offering flexible learning opportunities to individuals and groups of learners. The UNESCO perspective is in line with Adebayo's (2007a) contention of open and distance learning type of education as that which takes place outside the conventional school system and imparted ICT without necessarily having personal interaction with students or learners. Thus, the concept of open and distance learning suggests an educational approach designed to reach learners in their homes/offices/shops, etc, provide learning resources for them to qualify through the effective utilization of ICT without attending formal classes in person, or create opportunities for lifelong learning, no matter where or when they want to study.

Therefore, open and distance learning education could be seen as a non-contiguous communicative process of teaching and learning between students and teachers through the print medium or some other forms of technological device (Keegan, 1996). Also, it is a kind of educational teaching and learning process not hindered by space or time (Perraton, 1991). In the same view, Doods (1991) posits that open and distance learning education is any form of organized educational experience in which teaching and learning take place with the teacher at a distance from the learners most of the time. UNESCO (1997) further espouses that distance learning education is premised on open access to education and training and freeing learners from the constraints of time and place, and offering flexible learning opportunities to individuals and group of learners not opportune to benefit from the experience of the conventional educational setting. Similarly, Bunza (1995) asserts that distance learning education is that learning in which teachers and tutors do not always meet face-to-face to teach students like the conventional teaching and learning process. In the same vein, Fitzpatrick (2001) affirms that distance learning education is the type of education that reaches a broader students audience and which better addresses students' needs, saves money, and more importantly uses the principles of modern learning pedagogy.

The opportunity offered by the accessible nature of distance education is making it become a more vital part of higher education for people around the world. Its flexible nature has made it possible for large number of people in Nigeria who have missed university education or have been denied space in the university to have access to university education despite the barriers they face. Those who are unable to attend full-time due to age, social, economic or any other barriers are able to access distance education at their most convenient chosen location and time. Therefore, distance education means the delivery of useful learning opportunities at convenient place and time for learners, irrespective of the institution providing the learning opportunity (Kaufman, Watkins & Guerra, 2000).

Generally, distance education has four major characteristics as identified by ADEA Working Group on Distance Education and Open Learning (2002). These characteristics are: institutional accreditation where learning is certified by an institution or agency; use of variety of media for instructional delivery; provision

of two-way communication to ensure tutor-learner, and learner-learner interaction; and possibility of face-to-face meetings for tutorials for learner-learner interaction, laboratory or practice session or library study. Distance education not only shares the goals of conventional education, but it also aims at providing access to historically under-served, place bound, and highly motivated population. Distance education is said to be open because of students' freedom and programme flexibility. It is flexible and opens in terms of its admission requirements, that is, not as rigid as in conventional institutions, freedom in terms of place of study, time, place, and composition of study programme, content and didactic approach. It is intended to offer useful learning opportunity to recipients at a time and local environment convenient to them. Contacts between the student and institutions are provided through interactive and non-interactive media (Timothy, Ibrahim & Femi, 2008). It may also be provided through some contact at study centre. Unlike the conventional face-to-face instruction, the delivery medium plays a crucial role in minimizing the gap between teaching and learning (Keegan, 1996).

E-learning

E-learning is becoming increasingly prominent in tertiary education, with universities increasing provision and more students signing up. Its novelty is actually changing the way universities teach and students learn as it continually improves student experience in the context of teaching and learning. Advances in ICT have revolutionized higher education in many ways. These include: increasing access to post-secondary instruction, improving the availability of educational resources, and facilitating meaningful interaction among learners. Harnessing the power of ICT has become a critical strategy among institutions eager to offer an affordable, efficient, and flexible learning environment for rapidly growing and diverse communities of learners.

Today, technology enhanced learning, including distance and online instruction, is recognized as a viable tool necessary for preparing citizens to participate in the technologically driven global environment. A multidisciplinary approach to online pedagogical research recognizes the value of technology enhanced teaching and learning as critical in the mix of diverse strategies.

E-learning is not a new phenomenon in promoting education in some parts of the world. Presently, some institutions in Nigeria are using it to promote Distance Education (DE) and lifelong learning. E-learning according to Sale (2002), is the use of electronic technology to deliver education and training applications, monitor learner's performance and report learner's progress. Hedge and Hayward (2004), define it as an innovative approach for delivering electronically mediated, well-designed, learner-centered and interactive learning environments to anyone, anyplace, anytime by utilizing the internet and digital technologies in concern with instructional design principles. It is all about learning with the use of computers. In this age, learning with the use of computer is simply online ways of acquiring knowledge through the internet or through the offline CD-ROM. The online involves the use of Internet Explorer/Navigator. It may be in form of audio, visual, and or audio/visual. The convergence of the internet and learning, or internet enabled learning is called e-learning. The applications and process of e-learning include computer-based

learning, web-based learning, virtual classroom and digital collaboration where contents are delivered via the internet, intranet/extranet, audio and or video tapes, satellite TV and CD-ROM (Islam, 1997).

The concept of Social Justice

Social justice generally refers to the idea of creating a society or institution that is based on the principles of equality and solidarity, that understands and values human rights, and that recognizes the dignity of every human being (Zajda, Majhanovich & Rust, 2006). However, the term and modern concept of social justice was coined by the Jesuit Luigi Taparelli in 1840 based on the teachings of St. Thomas Aquinas and given further exposure in 1848 by Antonio Rosmini Serbati (David & Terry, 2007). Donna, Morgan and Claypool (2008) assert that social justice is based on the concepts of human rights and equality and involves a greater degree of economic egalitarianism. The Constitution of the International Labour Organization further affirms that universal and lasting peace could be established only if it is based upon social justice. This supports the view that the concept of social justice is a revolutionary concept which provides meaning and significance to life and makes the rule of law dynamic. This uniquely, is realized through productive education and attain via acquisition of knowledge. This gives credence to Castles' (2000) assertion that the quest for social justice is a natural consequence of the spread of enlightenment.

Unlike justice in the broad sense, social justice is a relatively recent concept, born of the struggles surrounding the industrial revolution (UN 2006). The concept of social justice and its relevance and application within the present context require a more detailed explanation. As mentioned previously, the notion of social justice is relatively new. None of history's great philosophers—not Plato or Aristotle, or Confucius or Averroes, or even Rousseau or Kant—saw the need to consider justice or the redress of injustices from a social perspective. The concept first surfaced in Western thought and political language in the wake of the industrial revolution and the parallel development of the socialist doctrine. It emerged as an expression of protest against what was perceived as the capitalist exploitation of labour and as a focal point for the development of measures to improve the human condition. It was born as a revolutionary slogan embodying the ideals of progress and fraternity. Following the revolutions that shook Europe in the mid-1800s, social justice became a rallying cry for progressive thinkers and political activists. Projecting this idea further in the nineteenth century, in a context of deepening inequality and poverty in the United Kingdom, the Commission for Social Justice established by the then Leader of the Labour Party (CSJ 1994) suggests that the elements of social justice would include:

- the equal worth of all citizens;
- the equal right to be able to meet their basic needs;
- the need to spread opportunities and life chances as widely as possible; and
- the requirement that will reduce and where possible eliminate unjustified inequalities.

Open, distance and e-learning for Social Justice

The rise in inequality in the distribution of income among people is well-documented in literature. This has not only compromised access to education, it has also made delivery of social justice negatively skewed to the disadvantage of majority people most especially in developing countries. There is great inequality in the distribution of opportunities for remunerated employment, worsening unemployment and underemployment in various parts of the world. This has affected a disproportionate number of people at the lower wrung of the socio-economic scale. The inequality gap between the richest and poorest countries, measured in terms of national per capita income, is growing as well. However, access to education by a wider proportion of the global population via the opportunity of Open Distance and E-Learning Education could bridge the gap positively. This, however, depends on the policy thrusts of education.

Many countries are progressing towards the goals of Education for All (EFA), but struggle to achieve equitable access constitutes a great challenge to individuals, nations and stakeholders in developing countries. There is a broad consensus that access and equal opportunity for all is the single most important influencing criteria to making the goals of Education for All attainable (Darling-Hammond, 2000; Rivkin, Hanushek, & Kain, 2005; UNESCO, 2006). It is also an important element in promoting social justice in terms of educational quality in rural and remote areas. In recognition of its importance, the support for open and distance e-learning educational system as a measure of human capital development is gaining momentum across the globe and most especially the developing countries as the expectation of the new world order is that people must be equipped with qualitative education life-long learning to be able to meet new challenges.

The growth of Information and Communication Technologies (ICT) has added new options for the operation of open and distance learning education (Collis & Jung, 2003; Unwin 2005; Leach, Ahmed, Makalima, & Power, 2006) as well as give opportunity for the inclusion of disadvantaged groups. This supports Vrasidas, Zembylas and Glass' (2009) assertion that the use of open and distance learning educational resources as catalysts for social change through inquiry, problem-solving and knowledge building in Nigeria and some other developing countries is beginning to manifest positive results. They assert that these educational resources are sustainable because they are openly available to everyone without changes in access or increased costs over time. These characteristics are conducive to meeting many of the Millennium Development Goals, especially the goals of achieving universal primary education and promoting gender equity.

In Nigeria, distance education has enabled many hitherto unreached and disadvantaged groups to have access to higher education.

Open distance and e-learning for capacity building: implication for National development

From the above premise, education is seen as a universally acknowledged potent and dynamic instrument for national development and social transformation. It is an important instrument for the development of the individual and the society as it is a weapon against poverty, illiteracy, and disease. Therefore, over the years, Nigeria has expressed commitment to education with the belief that overcoming illiteracy and ignorance will form a basis for accelerated national development. Based on this, access to educational opportunities has been widening through the provisional opportunity of the Open and Distance Learning (ODL) system of education.

In view of this, Open and Distance Learning (ODL) methods have become an effective and equitable means of providing learning for people in all situations and of all ages. Thus, the development of Open and Distance Learning in Nigeria has indeed been a revolution to the problems of education and capacity building. ODL is the mode of teaching in which learners are removed in time and space from the teacher. The desire to anchor as much as possible to the train of globalization demands that all sectors of society must be literate and this kind of mass education can only be afforded through the distance-learning scheme. Jegede (2003) observes that all nations of the world need a cost-effective, convenient, conducive, efficient and comprehensive way to educate all its citizens have embraced Open and Distance Learning.

Thus, Open and Distance Learning system of education plays a vital role in work integrated learning which is germane to the capacity development of disadvantaged individuals. It helps to assist in the delivery of education and training economically to a large number of people who are member of the workforce in the available industries and this serves as a mean of further developing individuals potentials for a more functional and effective society. At the side of the learners, it offers them flexibility of time and place. Most adult learners and even those who are young but are working can only study on part-time basis. This, the open and distance learning has made possible. It has proved particularly useful for busy, mature and motivated adults and most importantly, has also allow them to choose how they wish to study and at the same time, fix learning into their lives activity (Awonuga, 2010). This assertion can also be deduced from Moran and Rumble's (2004) observation. They remarked that the distance education is more cost-effective and can take place while continuing full-time employment. People who live in remote areas find that ODL permits them to enroll in programmes which otherwise would not be available to them or which would have been very costly to them if they will need to register for it considering the location of the institutions offering the course along with the financial implications of other related commitments that will go with it.

The ODL mode through its online learning opportunities, web-based training or e-learning approach has rapidly, expanded the workplace training ideas. It has in all ramifications allowed delivering of knowledge to individuals anywhere and anytime in the world. It has been recognized as the modality for vocational

education and the different kinds of training offered through it has allowed vast number of people, hitherto unreached, to take advantage of education and training opportunities (Mishra, 2002). However, advances in information and communication technologies (ICTs) have posed complex problem for colleges and universities in Sub-Saharan Africa (Ololube, 2006), especially in their distance education programs to reaching the goal of promoting the development of a knowledge society.

Challenges

The ineffective functioning of essential services and infrastructure such as electricity supply, internet services, telecommunications and postal services serves as a serious threat to the full realization of the aims and objective of the open and distance learning education system in Nigeria. Also, the most serious challenge facing distance education at this level is the need for the integration of new purposeful knowledge beneficial to national development into academic courses and programmes. This parlous state of social services has greatly compromised the expected full blown of open distance education in Nigeria. Open Distance Education which is supposed to be truly global in practice and philosophy, is yet even to have national appeal in Nigeria. This makes it to be restricted to geographical enclave in operation. To truly make distance education to have national appeal and global integration, all hands must be on deck to reappraise its mission and vision with a view to expanding its horizon. While doing this, efforts should also be made to embark on capacity building for its workforce albeit with a proviso that such a workforce is team-played and affectively committed to the programme of distance education. Also, poor funding prevents the progress of distance education.

For emphasis, Yusuf (2006) avers that successful distance education cannot be assured without the use of effective communication and technological tools (e-mail, fax, Internet, television, radio, etc.). However, several cities and rural areas in Nigeria are yet to have or have fluctuation in electricity supply. Just like electricity, most Nigerians do not have access to telephone and other telecommunication facilities. Services for those who have access are in most cases are epileptic. These may make the integration of telecommunication in the delivery of distance education difficult. Even with the availability of GSM access is still limited and services are yet to be perfect and service charge may make GSM unattractive for distant learners. Poor economic situations and its effects on middle level manpower, stands as the major obstacle towards the implementation of ICTs in distance education. Even an average middle income earner cannot afford basic technological and communication gadgets. Thus, computer-related telecommunication facilities might not be useful for most Nigerians, as computer is still a luxury in institutions, offices and homes. This has made the integration of necessary on-line resources (e-mail, newsgroups, worldwide-web, etc.) into distance education in Nigeria most difficult.

Conclusion

Open and Distance Learning is a globally recognized and accepted answer to the huge demand for tertiary education in a country such as Nigeria where the

statistics show that only 18 out of every 100 applicants gain admission into the limited number of tertiary institutions in the country. Open and Distance Learning provides access to and availability of educational contents to motivated students who are of college age and are seeking one qualification or the other in a vast array of professional disciplines that cuts across the Humanities, Social and Management Sciences, Pure and Applied Sciences, and Education in order to further their education cum career. However, despite its significant to personal development, societal growth, development and sustainability, the gain might be short lived if appropriate measures are not put in place to re-engineer the vision of open and distance learning education in Nigeria to meet the strategic challenges of technological development of the new millennium.

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Teaching Australian tax law in a transnational context

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Abstract

Teaching in the large Australian business school referred to in this paper is multi-national and international. As a professional and academic, the second author coordinated and taught in units in which large cohorts of approximately 1000 students per semester learned about taxation through open, distance and e-learning. Initially, concern for students who experienced isolation as a result of studying in non-face-to-face environments motivated this teacher to adapt and use technologies to create a sense of community. The teacher was further concerned about students' lack of understanding about Australian tax law and indeed its relevance to them beyond the unit, and students' unfamiliarity with the English language and Australian style of instruction. Consequently, the teacher developed a series of videos and utilised discussion forums via a learning management system to support student learning locally and internationally. The case study presented in this paper was developed from research into teaching practices and is underpinned by a review of relevant literature. Findings indicate tailored video presentations in conjunction with the sense of community and rapid feedback generated through online discussion forums support multiple learning styles.

Introduction

Teaching Australian tax law in a transnational context is complex; in this context large numbers of students with diverse needs displayed a variety of learning styles and teaching occurred in multiple locations and modes of instruction. Issues of student equity and manageability of workload inspired the second author to adapt, and adopt innovative technologically driven approaches to teaching - particularly the use of Lectopia and discussion forums. The case study presented in this paper was derived from a larger inquiry into the practices of higher education teachers. Accordingly, the authors investigated how a technologically driven teaching style was used to support student learning internationally and maintain a socially just learning environment. In addition to providing evidence about teaching practices, the authors interpret teaching practices in the light of literature related to the issues of teaching and learning styles and the use of technology to support student learning.

Approaches to teaching and learning

For almost half a century, there have been competing and contradictory research and comment about the existence of and matching of teaching and learning styles (Dewan & Dewan, 2010; Evans, Cools & Charlesworth, 2010; Farden, 2003; Fischer & Fischer, 1979; Heredia, 1999; Robotham, 1999; Xiao, 2006). Experience would suggest that in higher education teachers tend to generalise about the learning style trends of cohorts of students rather than by methodically gathering data about students' individual learning styles. Even so, teachers are encouraged to provide learning experiences that promote self-regulation and self-directed learning, and cater for student diversity (Evans et al., 2010; Robotham, 1999; Xiao, 2006).

In the quest to enhance student learning, the benefits of using technology to implement appropriate teaching practices must be considered (Chickering & Ehrmann, 1996; Chickering & Gamson, 1987). For example, the use of discussion forums and Lectoria may support flexible approaches to teaching and learning which enhance communication and feedback between students and teachers and could, also, address equity issues such as illness and disability, family and work commitments, distance and language proficiency (Chang, 2007; Chickering & Ehrmann, 1996; Fardon, 2003; Grant & Thornton, 2007; Preston et al., 2010). Teachers may choose to converse with students through discussion forums and/or face-to-face communication according to their teaching contexts (Laurillard, 2002). Meyer (2003) found that the asynchronous nature of some discussion forums gave students more time to think reflectively whereas face-to-face discussion was more useful for activities like brainstorming and visual demonstrations which were enhanced by fast paced high energy environments. Alternatively, teachers may choose to use Lectoria to capture audio recordings of actual lectures which may be linked to PowerPoint presentations (von Kinsky, Ivins & Gribble, 2009). Chang (2007) and Fardon (2003) note that the use of Lectoria is best suited to highly structured, academically-focused, content driven teaching styles. Although some teachers feared that using Lectoria would result in students' diminished attendance at lectures, research has shown that students attended lectures as well as using Lectoria as a study tool. The majority of students used Lectoria to: pick up things they missed (79%), revise for exams (76%), revisit complex concepts (76%), work at their own pace (74%), take comprehensive notes (63%) and to get hints for the exams (62%) (Gosper et al., 2008).

Teaching and learning approaches must enable students to become lifelong learners who can cope with increasing amounts of information in a climate of constant change (Evans et al., 2010). To foster lifelong learning, teachers must encourage students to become self-directed learners who can use a range of learning styles tailored to meet their own needs and the demands of various learning situations (Fischer & Fischer, 1979; Robotham, 1999). Hence, effective teachers facilitate and enable student learning by using flexible, collaborative and innovative teaching strategies (Dewan & Dewan, 2010).

Background: Teaching Australian tax law in a transnational context

A context of internationalisation and a concern for social justice shaped the second author's approach to teaching students Australian tax law. The teaching situation was complex as the taxation law unit was offered 'on-campus' via a three hour seminar or 'off-campus' through distance education which included, but was not limited to, Open Universities Australia (OUA), and in off-shore locations taught by local tutors. Traditionally students who were 'off-campus' studied in isolation because they had no lectures and limited or no access to the lecturer. The significant number of students studying 'off-campus' prompted the lecturer to design teaching resources, such as videos and discussion forums, to provide 'off-campus' students with an experience similar to that of students who studied 'on-campus' in a face-to-face mode. Please note, the taxation law unit was compulsory in the commerce degree and a pre-requisite for students seeking membership in professional bodies like the Certified Practicing Accountants Australia (CPA) and Institute of Chartered Accountants in Australia (ICAA). International students not resident in Australia had no prior experience with the Australian tax system and many students expected the unit to be boring. In addition to the issues of distance and motivation, some students had physical disabilities. As successive Australian Governments could change their stance on taxation issues, it was more beneficial for students to have the skills to read, understand and apply legislation rather than memorise it. However, because many students typically learned by memorisation, the students and teacher were challenged to learn and teach in different ways.

Research methodology

The interpretive research referred to in this paper describes a case study derived from a pilot study in which teaching practices in higher education were investigated. The first author was the leader of the pilot study in which teachers volunteered to have their teaching videoed and participate in a semi-structured interview. The second author was a participant in the pilot study. Video data collected in the pilot study were analysed using video analysis software called Artichoke and coded using a Business Teaching Observation Schedule (BTOS) which was derived from earlier research into the practices of literacy and numeracy teachers (Bolt, Kerr & Wauchope, 2011; Fetherston, 2010; Loudén et al., 2005; Loudén, Rohl & Hopkins, 2008). Qualitative data collected through the semi-structured interview were categorised and are reported thematically; quantitative data were analysed statistically and are reported in tables and figures in the next section. The use of "direct observation and experience, enriched by fruitful discussion with sensitive competent teachers" is an appropriate method of investigating styles in teaching and learning (Fischer & Fischer, 1979, p. 246). Thus, the case presented in this paper describes the teaching practices of one of the participants in the pilot study, particularly in response to the research question: How can different teaching and learning styles be supported internationally?

Results

The results described in this section are limited to findings in relation to how the teacher adopted a style of teaching that incorporated the use of technology to teach Australian tax law and address social justice issues in a transnational teaching context. The teacher sought to overcome the isolation experienced by students studying online or through distance education and challenged students to adopt deep rather than surface learning strategies (Marton & Saljo, 1976). The two main strategies the teacher used to overcome the isolation of 'remote' learning were the use of Lectopia and well monitored discussion forums.

Use of Lectopia and discussion forums

The teacher, in this case study, pre-recorded i-lectures which students were asked to view and answer five related questions prior to class. Thus, the teacher integrated i-lectures into the learning experience. In the face-to-face situation the teacher facilitated interactive seminars based on the weekly topics covered in i-lectures. In offshore locations local tutors fulfilled the face-to-face teaching role. Whilst online discussion forums were available for students in all modes of study, 'online' students relied more heavily on the use of discussion forums.

In this study, the sample i-lecture was 40 minutes in duration and was pre-recorded in a studio; thus, students had access to studio quality video of the teacher (audio and visual) and the PowerPoint slides. Analysis of the i-lecture showed that the teacher, primarily, demonstrated characteristics in the *knowledge* dimension of the BTOS; the teacher explained the sections of the Income Tax Assessment Act (1936, 1997) by defining key terms and using specific examples to demonstrate how to do the calculations. Further to this, the teacher demonstrated secondary BTOS dimensions such as *delivery* - using voice, body language and technology - and *respect* for student diversity. Data collected through the semi-structured interview provided evidence of the effectiveness of the use of Lectopia for both face-to-face and online students. For example, Figure 1 shows that students accessed i-lectures in Australian tax law units more frequently than i-lectures in other units.

Table 1 shows percentages of student agreement with statements about learning and teaching in an Australian taxation law unit for both 'face-to-face' and 'online' students.

The results shown in both tables represent averaged scores derived from an online student satisfaction survey for the years 2007 to 2010. Student feedback collected using the student satisfaction survey included:

"The i-lectures were also helpful as it provided a recap of each seminar which could be listened to while preparing tea, driving the car or just simply laying in front of the heater" (face-to-face-student)

“The inclusion of i-lectures is fantastic, it definitely takes away the feeling of studying alone” (online student)

“The i-lecture is very help to me who just arrived in Melbourne [not where the teacher was located] and English is not my first language. The examples in the i-lecture are very easy to understand. Much easier to understand than I go through the text book” (online student)

“Questions were answered promptly on the discussion board by the teacher and the activity produced through the questions and answers by the students was a stimulating learning experience” (online student)

“Almost every Blackboard thread/question/grizzle was answered (patiently & politely) making it an invaluable & reliable learning tool. Any question asked ... could be viewed by all students & probably assisted overall comprehension of the unit” (face-to-face-student)

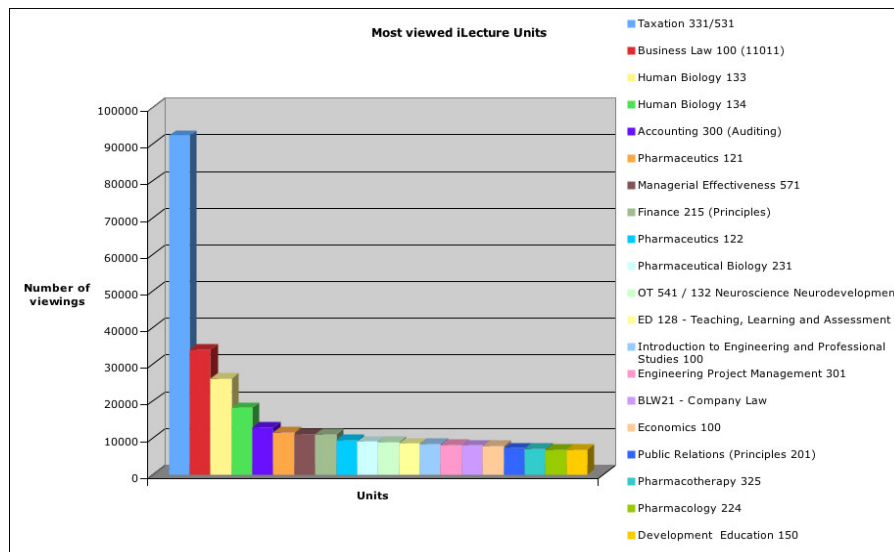


Figure 1: Comparison between students' viewing of i-lectures in the Australian Taxation Law unit and other units at the same university

<i>Percentage of students across the unit, faculty and university who agreed with the statements listed below</i>	Face-to-face			Fully online		
	Unit	Faculty	Uni	Unit	Faculty	Uni
Mean number of students in unit per semester	750	-	-	245	-	-
Mean response rate of students in unit	34%	-	-	23%	-	-
The learning experiences in this unit help me to achieve the learning outcomes.	91	84	83	96	88	87
The learning resources in this unit help me to achieve the learning outcomes.	91	84	83	97	88	87
The quality of teaching in this unit helps me to achieve the learning outcomes.	90	83	82	94	80	82
I am motivated to achieve the learning outcomes in this unit.	91	84	84	96	92	89
I make best use of the learning experiences in this unit.	90	84	84	94	91	89
I think about how I can learn more effectively in this unit.	90	84	83	91	92	89
Overall, I am satisfied with this unit.	90	83	83	96	87	86
Mean % student agreement across the statements	90	84	83	95	88	87

Table 1: Evaluation Data - Percentages of student agreement with statements about learning and teaching in an Australian taxation law unit 2007-2010.

Discussion and conclusion

By using new technologies to provide a range of audio, visual and communicative learning resources the second author was able to support different teaching and learning styles internationally. Students in various locations and study modes were able to direct their own learning by accessing teaching and learning resources suitable to diverse learning styles (Chang, 2007; Chickering & Ehrmann, 1996; Fardon, 2003; Grant & Thornton, 2007; Preston et al., 2010). The iLectures provided a quality lecture which allowed students to understand the basic concepts – listen to difficult concepts again and then read both the legislation and the text book. The iLectures also set the

context behind the legislation which allowed the students to understand the intention of the legislation.

The regular monitoring and use of the online discussion forum was significant in breaking the isolation usually felt by 'off-campus' students. It created a learning community in which students had direct, quick contact with the lecturer.

Students could ask detailed questions and receive replies swiftly enough to assist their learning. The lecturer responded to questions by guiding students to relevant sections of the legislation or suggesting that students should consider particular aspects of questions. In this way students received answers to questions which promoted critical thinking and self-directed learning. It should be pointed out that some students became overly reliant on ready access to the lecturer and were reluctant to direct their own learning; hence, it was necessary to set boundaries with these students.

Evaluation data indicated that students appreciated the direct access to the lecturer and compared the unit very favourably to units across the faculty and university. In conclusion, the use of both iLectures and daily monitoring of the discussion forum provided all students with equitable learning experiences. The technologies overcame the isolation of 'off-campus' learning and included students in an on-line community that allowed them to learn how to read, understand and apply taxation law.

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Equitable student access and success in the 21st Century through ODEL: a chimera?

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Abstract

Our global ICT environment is providing unparalleled access to information and communication through increasingly sophisticated technology platforms and applications and, in so doing, revolutionising the world. ICTs' undeniable potential and promise have also been seized upon by higher education practitioners, and ODEL practitioners and proponents in particular, often as a "cure-all" for many of the higher education challenges confronting us today.

It is often asserted that ODEL is the answer to accelerating demands for higher education in a changing global environment. However, there is also the view that we are all too often seduced by the potential of ICTs and all that they encompass, to the extent that we are blinded to the realities of the socio-economic and political environments within which we operate, and that the constant tension between the two is inducing a stasis in the kind of creative and innovative thinking that is required to marry the two effectively, in pursuit of institutional efficiency and student success.

This paper argues that if we are to provide an equitable education that results in the kinds of students and throughput rates we aspire to, then we need to know who we are educating and what kind of delivery model will best suit their diverse needs in our changing knowledge economy. It is suggested that having done that, we may need to rethink our assumptions around ODEL.

Introduction

The global demand for higher education is predicted to expand to over 262 million students by 2025 (UNESCO, 2009:10 a). Of that number approximately 75% is likely to be from developing nations, this despite the fact that participation in tertiary level education in low income countries has improved only marginally from 5% in 2000 to 7% in 2007 (UNESCO, 2009: iv a). A participation rate of 40 – 50% for young people in higher education is considered by the OECD to be vital for economic growth, but the *2009 World Conference on Higher Education: Reacting to New Dynamics* (UNESCO, 2009:1b), states:

Regional participation is 71% in North America and Western Europe, 26% in the East Asia/Pacific region, 23% in the Arab States, 11% in South and West Asia and, despite rapid growth, only 6% in Africa.

In line with the burgeoning knowledge economy, the ever-growing sophistication of ICTs and the massification of higher education, distance education has

evolved to the extent that today, we have the somewhat generic term *Open Distance and e-Learning* (ODEL), which encompasses the entire spectrum of possibilities in distance education delivery. So it is not surprising that ODEL continues to gain ground as a viable means of mass access and delivery. But equally, there have always been clear indications and warnings of the many challenges that need to be overcome in providing quality distance education to an increasingly disparate mass of students. For developing nations especially, ODEL is a double-edged sword whose promise and potential must be tempered by a sober assessment of the environment in which it functions and the students it serves.

Does technology drive education or does education drive technology?

One of the more complex conundrums faced by ODEL practitioners in the developing world and Africa in particular, is the fact that most ICTs have been designed from a world view that is often alien to the lived experience of many people in the developing world, and oblivious of the more nuanced challenges that need to be overcome in their application and use “on the ground.” Most require access to the world-wide-web, which, while it is certainly improving in Africa, can by no stretch of the imagination be deemed satisfactory. Where access is available, there are often real challenges such as computer ownership and literacy, and the cost of uploading and downloading, all of which compromise effective and efficient ODEL delivery.

One sometimes gets the sense that ODEL is being employed in the service of technology, and not the other way round. Tinio (2011:26) asserts:

“Technology then should not drive education; rather, educational goals and needs, and careful economics, must drive technology use. Only in this way can educational institutions in developing countries effectively and equitably address the key needs of the population, to help the population as a whole respond to new challenges and opportunities created by an increasingly global economy. ICTs, therefore, cannot by themselves resolve educational problems in the developing world, as such problems are rooted in well entrenched issues of poverty, social inequality, and uneven development. What ICTs as educational tools can do, if they are used prudently, is enable developing countries to expand access to and raise the quality of education. Prudence requires careful consideration of the interacting issues that underpin ICT use in the school—policy and politics, infrastructure development, human capacity, language and content, culture, equity, cost, and not least, curriculum and pedagogy”.

Who are we teaching?

In speaking of the need to consider the nexus of issues that inform ICT usage, Tinio (2011: 26) goes to the heart of the matter. Very often we don't know who it is that we are teaching and we don't fully appreciate the environment in which we operate. We have difficulty in envisioning the “coalface” of delivery. Of

course we have statistics that indicate age, gender, race, course enrolments, and so on, but to date there appears to be scant empirical research, especially in the developing world, on levels of computer and mobile phone literacy amongst ODEL students, actual ownership of computers and mobile phones (and if so, what models these are), affordable, regular and reliable access to the internet, and living conditions that might impede ODEL delivery. Instead, assumptions are made about our students' preparedness for ODEL based on data that is derived from various sources, each of which is generally aimed at a specific aspect of ODL delivery or specific cohorts of students. One cannot for example, gauge student ownership of computers or access to the internet using hits on the student portal or the number of online registrations when there is no way of determining whose computers were being used during that access. Did they perhaps register at the university, at work, at a library, at an internet café? One could of course assume that post grad students would have acquired some stable means of access and competency, but when it comes to the large numbers of undergrads, and especially new registrations, existing data on these vital considerations, are unreliable, nonexistent or in the process of being gathered, which poses a significant challenge for effective, quality delivery.

While many students do have the necessary access, who are highly computer literate and require little or no learner support, it would be ill advised to believe that if we deliberately limit or eliminate traditional delivery and support options, we will induce technical literacy and proficiency amongst those who lag behind, and in so doing, bridge or leap the digital divide. The digital divide remains a harsh reality, not only between the developed and the developing nations, but also between the "haves" and the "have-nots" in our student bodies. In that view, making assumptions about our students and imposing solutions that fulfill our criteria, from positions of relative comfort and privilege and in the absence of critical data, could be construed as yet another form of elitism.

It is a fact for example, and this has been the experience at my own institution, that in their desperation to improve their life circumstances, students, especially those in the rural areas, will lie about their access to computers and their computer literacy in order to be able to register for a particular course. When the time comes to complete an assignment online they arrive at our centres asking for help. They don't have any computers, any access to computers or the Internet and they are not computer literate. That is our reality, and although they may be the exception to the rule at Unisa, I would like to suggest that this phenomenon is more common than what we would like to believe.

Getting it in context

Let me contextualize what I am saying. South Africa's higher education institutions are impacted by the following statistics. Our current Gini Co-efficient is 0.68 – some even assert that it is 0.72 – one of the highest in the world (Makhanya 2011). South Africa exhibits a massive disparity between the "haves" and the "have-nots". Fifty percent of the population lives below the breadline as compared to 36% in Tanzania and 25% in India (CIA World Fact Book, 2011). Unisa's Bureau for Market Research asserts that 47% of credit active consumers are either blacklisted or in arrears for at least three months,

72% of the economically active youth are unemployed and there are extremely low financial literacy rates (Makhanya 2011). According to a recent report by the South African Institute of Race Relations (SAIRR, 2011: 1 - 2) nearly 100 000 (0.5%) children are living in child-headed households countrywide and by 2015, 32% of all children in South Africa would have lost one or both parents to HIV and Aids. The SAIRR also notes that between 2002 and 2007, the number of children who had lost both their parents doubled from 352 000 to 701 000. At the time of the release of the report, this number stood at 859 000. The total number of orphans, that is, children who have lost one or both parents is currently 3.95 million and of that amount 1.4 million are HIV/AIDS related. Single parent households are the norm in South Africa. Only 35% of children live with both biological parents.

Add to this the results from the Annual National Assessments tests that were conducted by the Department of Basic Education (DoBE), on more than 6 million school children, and our challenge becomes starker. The national average performance in literacy for Grade 3's was 35%. In Grade 6 the national average performance in languages (note, not an individual language – all languages) is 28%. In Grade 3, 47% of learners achieved above 35% in Literacy and 34% of learners achieved above 35% in Numeracy. In the case of Grade 6, 30% of learners achieved above 35% in Languages, and 31% of learners achieved above 35% in Mathematics (DoBE, 2011).

Of course, we are not alone. Many nations in the developing world are grappling with students who are completely underprepared for the rigours of higher education. This is particularly true where feeder systems are failing and where socio-economic conditions are declining rather than improving. Instead of getting a better calibre of student, it is likely that we will get a worse calibre, until the measures currently being implemented begin to come to fruition. The knock-on effect in terms of appropriate ICT acquisition, access and literacy are self-evident.

At a university such as Unisa, which now has close on 350 000 headcounts and counting, these realities and challenges are magnified proportionately as we grapple with designing a “best-fit” architecture for the institution that will offer our disparate students an equal opportunity to develop as they learn, and to succeed. Rather than attempting to leap the digital divide in a single bound, I would like to suggest that a simpler, planned, incremental approach might achieve more solid gains over the longer-term.

ODEL in the “real world”: pragmatic considerations and approaches

There are no easy solutions, but there are approaches which appear to be bearing some fruit. In an article entitled, *How Student Technology Profiles Affect Open and Distance Learning in South Africa*, Hendrikz (2011) discusses the University of Pretoria's experience and approach to accommodating South Africa's challenges in their unit for distance education. Their students are all teachers with a minimum three-year qualification. Almost 80% are women and more than 85% are older than 35. Just over 50% of the student population is

graduate students. The majority, by far, lives and teaches in rural communities throughout South Africa (Hendrikz, 2011).

Their delivery remains predominantly paper-based, with structured opportunities for face-to-face sessions and other student support services. Enrolled students' profiles are analysed to direct the introduction of appropriate ICT to support and enhance learning. The technology profile of the distance education students in 2002 and 2003 showed that almost all students had access to, or owned a mobile phone. (The model of the phone is not known.) Very few students indicated that they had an e-mail address. Fewer than 5% of the students indicated that they had access to a computer at home or at work. Only 1% indicated that they had access to the Internet (Hendrikz 2011).

These statistics were used in deciding whether or not to introduce the web based/online delivery mode for distance students and to explore ways of using mobile phones in its distance programmes. A decision was taken to load all the programme material, with the exception of the textbooks, on the University's LMS (ClickUP), a non- interactive site aimed at enabling distance students to access their learning material, tutorial letters and administrative information. Despite providing information about the site and how to access it to all new and existing students, almost no students have ever accessed the site over the years (Hendrikz 2011).

For the period 2004 to 2006, the mobile phone profile stayed the same and the number of students who had an e-mail address remained very low. This was also true for Internet access. From 2007 to 2009, the percentage of students with both e-mail addresses and Internet access grew. Internet access rose annually from 2% in 2007 to 7% in 2009, while growth in e-mail use grew from 20% in 2007 to 35% in 2008. However, it declined again in 2009 to less than 20%. There has however been noticeable growth in ownership or availability of computers for this cohort of distance education students from 2002 to 2010 (Hendrikz 2011).

This profile underscores the realities that I have sketched above. There are those communities, especially in urban areas that have comprehensive and adequate ICT connectivity, while the majority of the population living in rural areas have limited or no ICT connectivity.

Over the years, the University has carefully monitored the technology profile of its students and introduced – in a carefully planned manner – technologies that are accessible, dependable, and affordable to students, including SMSs and CDs. However, because not all students have access to a computer, the information on the CDs is not compulsory content, but information that will enrich their studies, for example, an e-library with recommended readings. Greater access to computers has resulted in more students submitting assignments online and it is anticipated that over time, delivery will evolve in line with the student profile and available technologies. However, it is not envisaged that this will happen in the near future. It was also clear from the start of the study that SMS could not be used for in-depth academic conversations or to convey complex academic content, but revolved more around students'

perceptions and how they react when they receive an SMS from the University. The study concluded that the Internet and mobile phone penetration rate, as well as South Africa's ICT Development Index (IDI), is reflected in the ICT profile of the University of Pretoria as a micro reflection of the reality of South Africa (Hendrikz, 2011).

This study offers a small window into the complexities of ODEL provision in South Africa. At Unisa, we are even more challenged, not only in terms of numbers, but also a hugely disparate profiles and a curriculum which we all agree, is too large. We are in the process of remedying that.

The study concludes:

“One could argue that, if the most advanced sub-Saharan country in Africa reflects this reality in its student population, this student population should be very similar to that of other African countries. We are challenged by the ICT realities in Africa to carefully plan and contextualise our e-learning strategies before introducing them. In education, it should not be about technology, but rather about how we can expand access to study and how we can improve support to our students in a way that will at least give them a fair opportunity at success” (Hendrikz, 2011).

A second, much smaller, but equally important study was conducted in 2009 by Gitau (2011) in the township of Kayelitsha, Cape Town South Africa. In it she juxtaposes the rhetoric of the mobile phone as the “messiah of ODEL, driven to a crescendo by the arrival of inter-terrestrial internet cables on our shores” (Gitau 2011) with the practical reality of its use in an urban township setting. Excluding such devices as the Blackberry, Android and I-Phone which few of the poor can afford, she speaks of simple feature phones that have been customised by mobile phone makers for Africa. These phones mostly have basic browser capabilities and 2.25 inch screens. The users comprised eight women in an NGO collective, and the challenge was to train them how to access the internet on mobile phones they already owned. Gitau found that 6 months after the training they continued to use the mobile internet for a combination of utility, entertainment and connection, but that they encountered barriers including affordability and difficulty of use. Bearing in mind that such users are to be the prime potential beneficiaries of mobile internet, the challenges she identified include:

- **GPRS settings:** There was no plug and play. Users had to master complex multistep menus, visit the mobile phone shop or get a knowledgeable friend to set up the phone. The different phone providers also each had their own unique instructions and settings, including download requirements, which add to the cost of the user.
- **Security Settings:** Users assumed that once they were online they would be able to navigate and browse any site. But the service providers had set up gateways that routed all browsing through their landing pages which contained end user agreements, licenses, and agreements. This causes many users to give up

- **WAP/Menu/Hard Key confusion:** Every phone had a different button and/or menu to get into the WAP/Internet application. Even different handsets serviced by the same provider were not consistent. Access skills had to be retaught for each new phone.
- **Webmail chicken and egg:** E-mail Identifiers unlock the internet. For virtually every service such as Facebook, job services and so on, one needs an e-mail address. At the time of the study, none of the major webmail providers allowed for mobile-based account creation, which meant that an e-mail address had to be created on a PC on behalf of the user to enable them to access the net on their mobile phones.
- **Unfamiliarity with passwords:** There was some confusion on the part of the users, between a pin number and a password. A pin needed four or five digits, but a password needed a combination of characters with a minimum of eight.
- **No mobile friendly websites:** There was nothing to get people to go online and stay online. At the time there were no mobile-friendly websites within the community.
- **Limited functionality:** The most obvious challenge was the low memory and processing times of the phones, which were in no way comparable to a computer (Gitau 2011).

Three years later, Gitau now works in Kenya, with different users. But she faces exactly the same problems. She asserts unless these challenges are addressed, the poor will remain technically marginalised.

Conclusion

The World Development Report (World Bank 1998/1999) asserts:

.....the reality of the Digital Divide—the gap between those who have access to and control of technology and those who do not—means that the introduction and integration of ICTs at different levels and in various types of education will be a most challenging undertaking. Failure to meet the challenge would mean a further widening of the knowledge gap and the deepening of existing economic and social inequalities.

Higher education practitioners in developing nations are also increasingly sensitive to the socio-economic and political dynamics around rampant ICT development and hard-sell, particularly in regard to prolonging, extending or expanding existing hegemonies that may impede efforts to grow and develop indigenous knowledge, canon, culture and systems. This is a growing reality that nowadays, is made more complex by the influence of emerging powers. Quality ODEL provision in our rapidly transforming global and national environment requires a multi-focal understanding and approach that may demand far greater levels of pragmatism, collaboration and partnership (especially at regional levels) on the part of higher education practitioners than has hitherto been the case.

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Implications of cross-border education on access and quality of products of African tertiary institutions

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Abstract

Open, Distance and E-Learning (ODEL), is a weapon of mass instruction aimed at widening accessibility to educational opportunities of those who would otherwise not have had the advantage of enjoying the benefits of formal education. This is because the conventional tertiary institutions do not have the absorptive capacity to meet the educational demands of the public due to many inevitable factors.

Notwithstanding the educational access which would be created by ODEL, cross-border educational delivery has its accompanying demerits. These include the issues of programme relevance, accreditation and quality guarantee, commercialization drive and the problem of cultural dilution.

In this paper, we have systematized a framework of ODEL which can be operated within the parameters of best practices that will ultimately result in mutual benefit to the foreign ODEL institutions as well as to the beneficiaries of educational products vis-a-vis the government of the host country.

Keywords: Cross-border education; Access and quality; African tertiary institutions; product quality; Open, Distance and E-learning (ODEL); massification and commercialization; cultural dilution; ODEL best practice framework.

Introduction

Pedagogical practices have evolved throughout the decades. Early forms of education relied on oral tradition delivered by a class of specialists more or less authorized by a society to pass on verbal knowledge of recognized importance in its cultural, intellectual and spiritual life (Zwettler, 1978:3) with no printed resources to support the pedagogy. Apprentice based practices later emerged in the form of increasing numbers of learners under the wings of the master artisan or artist, a characteristic feature of the renaissance era which resulted in the mentoring of artists from doing menial jobs such as sweeping art studios and washing the masters' brushes to becoming accomplished masters. Today we witness interactive collaborative learning through the use of online media. Currently computer based learning is growing in popularity across the globe and has been incorporated in both conventional face to face classrooms as well as in the broader field of Open and Distance Learning (ODL). The incorporation of computer based learning in ODL is referred to as e-learning. A term that encapsulates ODL and e-learning is Open and Distance E-learning (ODEL).

The potential of ODEL in addressing the educational needs of a growing number of learners is immense. Despite this potential, there exist a number of threats to the quality of ODEL programmes. However, in order to mitigate these threats and to enhance the quality of programmes, a sound framework for the implementation and practice of ODEL in Africa is necessary.

Role of open, distance and e-learning in mass instruction

In its earliest form, education occurred through oral means and apprenticeship was delivered on a one to one basis. With the industrial age came a wave of proletarian workers who worked in assembly lines with factory skills acquired on the job with or without formal apprenticeship (Offer, 2008: 538). Career-focused education gained a foothold in the industrial age with developments in the field of mass production. The pedagogy of the day was based on linear learning. The invention of the printing press allowed for mass production of print based educational material which allows more people to access these resources. These developments highlight the role that technology played, and continues to play, in educational trends, particularly in the field of ODL. Traxler (2011:150) views educational technology as 'parasitic' in nature due to its adaption of technological devices meant for retail niches and corporate markets and converting them for learning purposes. Education has co-opted desktop computers and mobile devices meant for the corporate world and for individual usage and adapted them to advance teaching and learning. This trend is evident in ODL which has used, and continues to use, various technologies depending on the pedagogical leaning of the time or of the instructors to facilitate teaching and learning.

In its early forms, ODL was based on behaviourist teacher-centred modes of instruction. This occurred at a time when the teacher was seen as a fountain of knowledge and students were viewed as empty vessels that required filling with knowledge. The term "sage on the stage" is used to characterize this form of teacher-centred teaching and learning. The students of the time were expected to memorize and regurgitate information without either acquiring a deep understanding, or employing higher order thinking skills to solve problems in an innovative and creative manner. Paulo Freire (2007) refers to this as a banking system of education which views students as empty bank accounts into which teachers deposit knowledge. He argues that this approach to education dehumanizes both the student and the teacher as well as stimulating oppressive attitudes and practices in society. The resources used to facilitate ODL based on behaviourist pedagogies were mainly print based and did not allow for robust communication between either the teacher and the student, or the student and his peers. Although print based technology is still in use today, the possibilities for incorporating rich learning experiences that require audio and visual interaction are absent. Computers have been incorporated in teaching and learning for a number of decades and were initially utilized to enhance behaviourist pedagogy through the use of drill and practice capabilities. With movement towards constructivist learning preferences, computer technology is used to facilitate interactive problem based learning. Furthermore, computer technology is developing at an accelerated pace in congruence with a public that demands information at the click of a mouse from

a variety of sources irrespective of spatial, cultural or language barriers. This has impacted on ODL and led to learning facilitated through the means of ODEL.

ODEL has the capability of reaching large numbers of students if the technological infrastructure, hardware and software, pedagogical grounding and sound policies are in place. Researchers indicate that technology in itself does not lead to improved learning outcomes. Student learning strategies (Tsai, 2009) and instructors' teaching strategies continually determine learning outcomes regardless of the technology employed. Online inquiry based teaching and the way in which the technology is utilized is fundamental to the achievement of desired learning outcomes.

Absorptive capacity of conventional tertiary institutions

ODL has, since its inception, been a means of making education accessible to large numbers of people who for various reasons were unable to access conventional face to face instruction. Conventional institutions of learning have experienced unprecedented growth in student numbers across the world as a result of global and national initiatives as well as other factors.

The Global Education Initiative whose objective is to catalyse educational initiatives at the global, regional, and country levels through the establishment of multi-stakeholder partnerships, involving the private sector (World Economic Forum, 2007:7), has increased the demand for education in a number of countries.

Changes in employment criteria have also led to the need for skilled personnel to join the work force. Employers demand a skilled entry level workforce who do not require further training as the employers lack the resources to retrain new employees and they require a return on investment as regards their new personnel. This has led to prospective employees seeking the necessary competencies through institutions of learning in order to acquire employment.

Global economic factors have also led to the shrinkage of budgets for public education. The result has been less funding available to public providers of education in many countries. With the shrinking of the national budget provision for education, which would have been used to fund more physical facilities in educational institutions, conventional institutions have been unable to cater for the growing demand for education and as a result, many students are excluded from admission.

Global democratization of education was launched at the end of the Second World War as a means towards modernization. The reforms that came as a result of this initiative saw the expansion of compulsory education and reform in education systems to allow for larger sectors of the population to acquire secondary school education (Resnik, 2007: 215). This resulted in a greater demand for education within an education sector that was designed to cater for a limited number of students.

Another initiative that has driven the demand for education up is UNESCO's Education for All (EFA). The declaration, which was signed by delegates from 155 nations, has led to 192 countries having laws making basic education compulsory (Kosack, 2009:498).

A number of changes have occurred in the higher education landscape as a result of socio economic factors. These changes have impacted on the absorptive capacity of conventional institutions of learning. Hall (1996) in Peters (2004) summarizes some of the changes which have been experienced in the education sector as follows:

- The education of children and juveniles has changed to the education of adults, and a shift in the age and status of students to include older senior citizens has led to increased demands for education.
- The goals of education have evolved from a general well-rounded education to more specialized training to meet professional needs.
- There have been changes in the meaning of higher education, from being viewed solely as preparation for a career, to an important asset of a person in their struggle for social survival and employment prospects. This has led to greater numbers of people seeking education.
- Governments have recognized the role played by mind power, which is developed in universities and which increases the value of human capital for developing and maintaining national industries to make them fit for global competition and markets.

Cross- border educational delivery

As with all initiatives, there may be promises as well as challenges. ODEL allows for educational institutions to offer programmes across spatial, cultural, economic and social barriers. ODEL also allows for access to Open Educational Resources (OERs) which enable collaborative creation of new knowledge and use of this knowledge by all who can access it. Another feature of ODEL is the ability by a myriad of educational providers to seek students from across geographical borders. Though this may lead to massification of education and giving students a wider choice regarding education providers on the one hand, it may also lead to a number of challenges if left unchecked.

Programme relevance

Despite the metaphorical shrinking of the globe into a global village as a result of advanced communication and transport infrastructure, nations have educational needs that are highly contextual in nature. Despite the nations of the continent of Africa sharing a common colonial past, there are challenges which each country has which is unique to that particular country. These unique features may be based on religious, cultural, political or geographical positions. The predominantly oil-rich Muslim north may experience challenges which the nomadic arid north east Christian regions of the continent may not experience. The contextual nature of challenges facing nations impact on the education programmes which would be most relevant to the region. With ODEL, educational programmes designed for a specific context may be served to learners from a different context thus making the programme irrelevant to the needs of that country.

The creation of new knowledge is highly contextual as regards indigenous knowledge systems. It is therefore imperative that scholars are able to unearth knowledge from their various contexts and regions and present this knowledge to the rest of the world. As Garuba (2010) contends, since Africa was not present at the “tea party” where the fragmented self-understanding of knowledge was consolidated into disciplinary formations, there was no African history, literature, sociology, philosophy, et cetera, to speak of. If researchers fail to showcase their contextual and indigenous knowledge the question that arises is, who will?

Accreditation and quality guarantee

ODEL programmes accessible across borders may result in students falling prey to programmes which are designed without their profiles in mind. For example, many students who would enrol for ODEL programmes in sub Saharan Africa, may not have the necessary technology at their disposal at all times given the inadequate and unreliable communication infrastructure in the region. Students from some regions may also lack the necessary training and skills to engage in ODEL programmes. These programmes may have passed the accreditation and quality tests in one country or region but fail to meet the requirements of the students in another.

Commercialization drive

Peters (2004:28), notes that there is a new way of viewing education. The realm of academia has been permeated by the concepts and practices of business with students viewed as “customers” and education as a commodity. This has had an impact in the field of ODEL and may serve as a threat to the quality of ODEL programmes from providers who view education provision purely in terms of monetary gain and thus compromise educational quality. An ODEL provider who seeks to gain monetarily often overlooks the rigorous systemic and pedagogical aspects required of ODEL provision, thereby offering sub-standard programmes which do not achieve the required educational outcomes and which ultimately lead to dissatisfied students. This will consequently create a ripple effect in the job market employment drive to discriminate against similar qualifications but of doubtful qualities...societal polarization on an economic basis.

Cultural dilution

Though globalization has been embraced across the world, autonomy is guarded by nations and viewed as a strong determinant of democracy and independence. ODEL allows for the proliferation of information and knowledge across national and regional boundaries. The challenge of this trend is the dilution of cultures which form a part of national and regional identities. Issues of attitude, behaviour, moral etiquette respect and so many other variables are basically imported to other countries which may ultimately lead to what Durkheim in Harriford & Thompson (2008) labelled as “anomic suicide”, a situation of acculturation with a concomitant social dilemma.

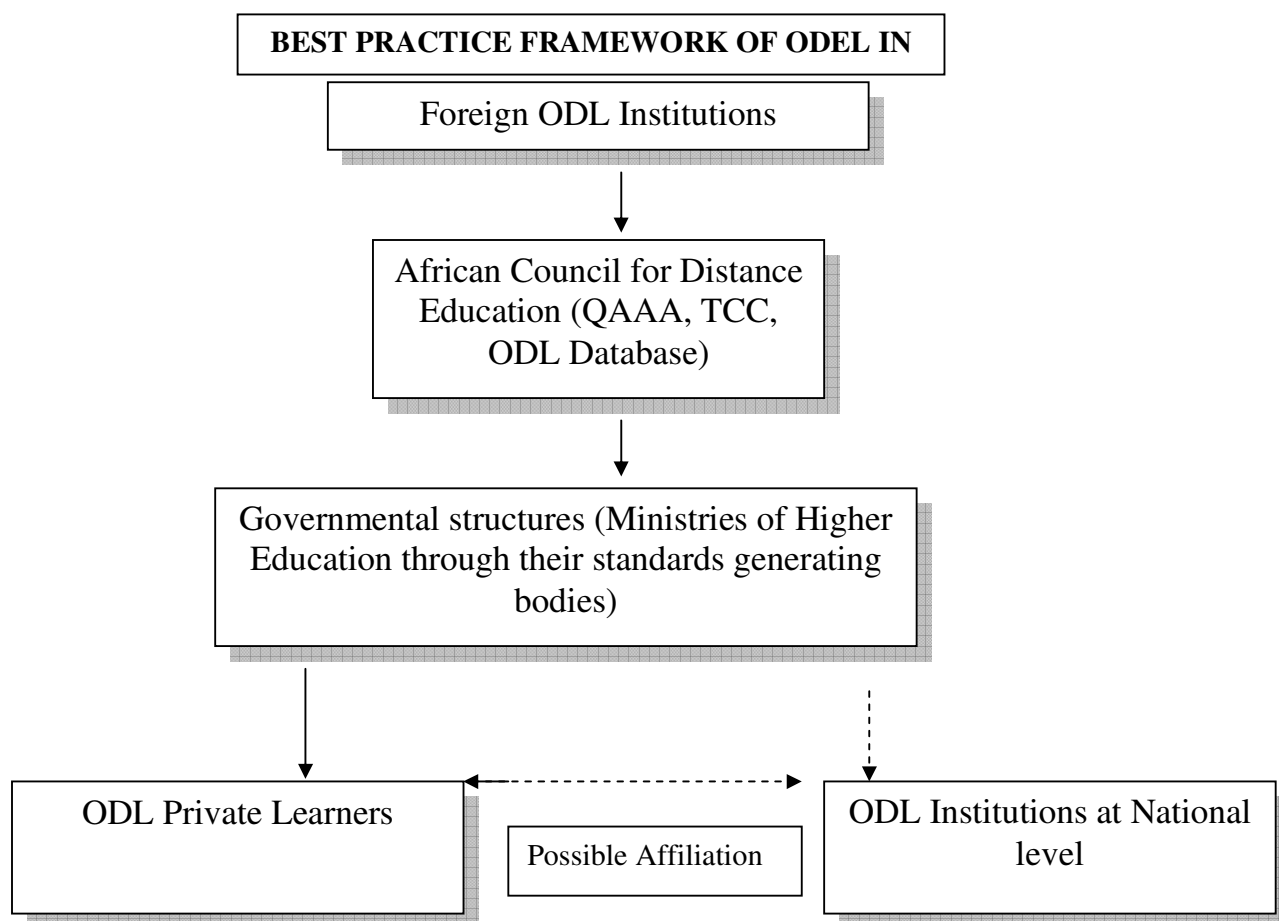
Best practice framework of ODEL in Africa

The higher education industry has many uncertified competitors, especially from the private and corporate organizations, who have no direct business with education. The principle of democratization of education and the growth in knowledge economies have given rise to many groups becoming deeply involved in educational provision and using the ODEL route. While we are not against the widening of people's access to education, our postulation here is to send a note of caution through the recommendations of adhering to this framework as an operational guide to foreign ODL institutions who seek to provide education to people on the African continent.

A. Foreign ODL Institutions

This may be individually, publicly or corporately owned foreign ODL institutions interested in establishing educational centres in African countries. There must be clarity of vision and mission including their modus operandi. They should be accredited with the national accreditation bodies within their own countries or regions.

Application to the African Council for Distance Education (ACDE), as the repository of ODL activities on the continent.



Role of the African Council for Distance Education

This is a recognized, overarching ODL council in Africa charged with serving as a clearing house for any African government which intends to allow any foreign ODL institution to operate in any African country. Their specific roles include the maintenance of quality, standards and relevance of programmes. They must also certify the adequacy of curricula, staff complement, learning facilities, equipment and so on. ACDE has three effective organs,

- The Quality Assurance and Accreditation Agency (QAAA)
- The Technical and Collaboration Committee (TCC)
- The continental ODL Database.

These organs work in unity to safeguard learners from the negative consequences of fly-by-night ODL outfits as well as to guarantee possible credit transfers for students from among African ODL institutions.

B. National Governmental Structures (Ministries of Education)

On the advice of the ACDE, the Ministries of Education in each of the African countries in which such foreign ODL institutions intend to operate, will be guided on the legitimacy and quality of such institutions. Such advice will include the issues of certification, regulation, policy, authentication, recognition and fees to be charged, vis-a-vis the comparison with the African-based ODL institutions.

C. National ODL Institutions

While the National Ministry of Education can guarantee and certify foreign ODL institutions to operate after ACDE's advice and linking directly with interested ODL private learners, the national ODL institutions could also collaborate in many respects with the foreign ODL institutions. Such collaboration can include the joint use and production of ODL resources, student recruitment, learner support engagement and sharing of programmes. This will serve to curb the discrimination of certificates to be awarded to students of the different ODL institutions by employers of labour in the final analysis.

Conclusion

The main focus of any ODL institution operating in Africa should not only be to enhance access to education of the hitherto marginalised citizens, but also to guarantee access for success, otherwise the investment of funds and time will amount to a colossal waste of national resources. Quality must be maintained through a deliberate, regulated operation guided by a policy framework, so as to avoid the danger of making Africa a dumping ground - apart from the economic exploitation of the innocent but curious individuals yearning for education.

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Cross-border collaborative learning in pharmacy - design and reactions

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Abstract

The paper outlines the details, outcomes and evaluation of a cross border e-learning course in clinical pharmacy. Intercultural issues were relevant in different aspects:

- Pharmacists from four European countries were responsible for the development of the course.
- Cultural differences between pharmacists in hospitals and community pharmacies on the one hand and the professional guild of medical doctors on the other hand were widely discussed.
- The geographical variety in the student group provided insights into different perspectives regarding the status of pharmacy in different European countries.

The case provides an example of how to balance the different aspects, cultures and learning targets and thus leading to new learning experiences for all groups involved.

The centre for continuing university education and distance learning of Hamburg University (AWW) offers programmes in the area of

- traditional general university education (lecture series open to the public, a programme for senior citizens)
- subject specific postgraduate programmes continuously assessed and certified (art history, general management, management of conflicts, train the e-trainer, clinical pharmacy...)
- and - based on a co-operation contract - the AWW is local contact point for students and enquirers for the Open University, UK, in Hamburg, northern Germany.

Funded by the EU Leonardo programme within the project "Standards of Continuing and Professional Development Education in Specific Fields of Pharmacy on the European Level", pharmacists from the universities in Cracow (Poland), Barcelona (Spain), Montpellier (France) and Hamburg (Germany) developed a joint curriculum for an e-learning master programme in clinical pharmacy. The target groups are pharmacists in hospitals as well as community pharmacies. Clinical pharmacy has only in recent years become part of undergraduate pharmacy programmes at universities in most EU-countries. Therefore there is a demand for university continuing education programmes in this subject in an optimal way harmonized EU-wide.

Moreover pharmacists' work both in hospitals as well as in community pharmacies had undergone a radical change towards non-pharmacy activities over the past 20-30 years (e.g. negotiation of discount-contracts with insurance and drug companies). As a follow-up, the profile of pharmacists has become rather low in the countries involved, in many cases they are today seen as salespersons. The Leonardo-project academics involved were aiming at a harmonized programme to initiate a change in the design of the work by outlining the big potential of high profile counseling activities. This change also meant to influence the cooperation between pharmacists and doctors both in hospitals or medical practitioners.

The partner on the side of Hamburg University, Prof. Dr. D. Dartsch, contacted the AWW at the very beginning of the project to make sure that the AWW's e-learning expertise is widely used. In parallel to the development of the modules we were able to prepare the pilot run and subsequent presentations with 20 students each according to other Hamburg university continuing academic education programmes.

Curriculum

The harmonised curriculum consists of the following four clinical pharmacy modules (150 h workload each) which will eventually lead to a master in clinical pharmacy:

Module 1: Solving drug-related problems

Module 2: Information and counseling

Module 3: Pharmacotherapy

Module 4: Special aspects of hospital pharmacy / Special aspects of community pharmacy

Prof. Dr. Dorothee Dartsch, University of Hamburg was the responsible project manager for Module 1. The four universities agreed that this modularized master programme would be offered in the native language only in each of the countries involved in order to avoid competition. Project language was English. Hamburg University decided to run the first pilot in winter-semester 2008/2009. Meanwhile we have had four presentations of the first module with participants from six different countries: Italy, Switzerland, Austria, Germany, Luxembourg and Norway. The course language is German with a lot of English articles and references involved.

Unfortunately the Leonardo project did not manage to develop modules 2-4 to a mature status to be offered as a course but only the content of what needs to be included in these modules. Since there is no more funding in the project it is up to Prof. Dr. Dartsch herself to work out the detailed contents of those modules.

E-learning concept

The e-learning concept is based on communication, collaboration and teamwork in a moderated process. This applies to all AWW e-learning-modules and courses. In order to prepare the students for the special study skills needed for

e-learning we start with a compulsory preparation module “Virtual teamwork”. Students across all subjects have to pass this four weeks module before they move on to their specific subject. The advantage of running this compulsory course for mixed groups across subjects, cultural and professional backgrounds lies obviously in the expected mix of learning styles and types in combination with diverse cultures. All students profit from the diversity.

2.1 Student preparation - Study skills

The preparation

use of e-learning platform (OLAT),
time management and
working in virtual teams.

Because of the mix of students (across academic and professional backgrounds, age, working experience, media-competence, cultural background...), we cannot assume that they are well prepared for our concept of web based university further academic education. To meet these needs, all students have to go through a compulsory course “Virtual Teamwork” in the first place. The topics covered are: getting familiar with the learning platform and its tools, time management issues, web based group work, web-related communication skills, reading and note-taking, basic knowledge of learning styles and their influence on efficient learning, individually and in groups. The didactic concept is based on doing/experimenting with the different tools, experiencing virtual teamwork and the reflection of all these experiences. Although our target group consists of part-time postgraduates, in the beginning we always face students who act like students at school: passively waiting for the teacher to tell them what to do. It is the preparation module that is used to motivate and train them how to become an active self determined learner. The results become very clear when the students start with one of the other modules.

The group of pharmacists turned out to have huge difficulties with teamwork which is not so much a surprise when recalling their work situation: they have to make decisions at very short notice without having time or colleagues around to consult or to discuss issues. Their focus was to learn facts and figures about clinical pharmacy and in the beginning they did not see any advantage for working in groups.

2.2 Clinical pharmacy

The pharmacy module “Solving drug-related problems” consists of theoretical input, case studies and examples. Students have a series of tasks to do: individual activities, plenary discussions, multiple choice tests, participation in virtual classroom sessions, filling wikis with information and using blogs to keep a record of their learning processes.

Design

The structure of the course is laid out in a course calendar which specifies the different tasks, individually as well as in teams or in plenary. It also provides information about the estimated workload as well as fixed deadlines for every task to enable intensive cooperation.

Typical Course timetable:

Kursfahrplan für: Klinische Pharmazie I - Arzneimittelbezogene Probleme lösen			
1. Block: Klinische Pharmakokinetik von Mo 20.10. bis So 16.11. (25 h > 4 Wochen)			
Selbststudium		Plenardiskussion	Teamaufgabe
Texte: 9 h • Einleitung • Faktoren, die die Pharmakokinetik beeinflussen • Therapeutisches Drug		Mo 20.10. - So 26.10.: 2 h Diskussion: Praktische Erfahrungen im Bereich Pharmakokinetik Mo 27.10. - So 02.11.: 2 h Diskussion: Einfluss des TDM auf den Therapieerfolg Mo 03.11. - So 16.11.: 1 h	Mo 20.10. - So 02.11.: 2 h Journal Club: Zusammenfassung der Ergebnisse verschiedener Review-Artikel im Bereich PK/PD - anschl. Diskussion im Plenum Mo 03.11. - So 16.11.: Fallbeispiele

Estimated workload - for orientation

Fixed deadlines for every task - to enable cooperation

Individual tasks Plenary discussions Group work

Typical group tasks are the analysis of a case study or writing the abstract of an article, typical plenary tasks comprise sharing experience and discussing different approaches.

Students have clear responsibilities:

- regular checking of email and discussion forums
- informing group and tutors about times of absence
- appointing a responsible person per group work
- contacting tutor in case of difficulties
- Getting in contact with tutors when there are difficulties in time management or group organisation

Tutors regularly and reliably support the students in the areas:

- Team building at the face to face meeting
- Facilitating participants' online activities and group work
- Giving feedback to group solutions (content, process, team)
- Input and feedback by external experts

The clear and rather restricted timetable provides a working basis for both students and moderators which reduce the flexibility on the one side but guarantees interaction on the other side.

Reactions

The experience in the preparation module “Virtual teamwork” prepared the ground to be open for new ways of working together among the pharmacists. The participants’ feedback was as follows:

- They accepted the provided team settings
- They appreciated team building activities
- They realised the potential benefit of group work
- They disapproved the tight online schedule
- They approved organisational support by tutors

How well they had taken the new competencies on board became clear by the intensive interaction in the pharmacy module: 84 relevant postings in only one forum within the first online week.

They intensively discussed these topics:

- Routines of interaction check (Data bases used: ABDA data base, Pharmavista, Up to Date, Micromedex,
- Dosage adjustment
- Databases, literature, checklists, fax templates
- Typical problems and possible measures to be taken:
problems arise mainly with clinical relevance of interactions (polypharmacy, flood of interaction warnings, incongruent classifications in different data bases...) and lack of data (customer cards may be helpful, electronic patient records optimal), inform prescribing doctor (e.g. phone, fax) about major interactions, counsel patient about intermediate interactions, recommend observation of specific symptoms if possible

The first group work, writing a summary of an English review article on pharmacokinetics, demonstrated the advantage of working in a team. Some of the students were fluent in English, where others did not feel comfortable with it. They spread the task on different shoulders and thus experienced that the team is more than the sum of the individuals. To summarise:

- Group work was very profitable
- Knowledge sharing became very important
- Shared labour was appreciated
- We observed a deeper reflection on all topics discussed
- Mutual motivation through groups must not be disregarded
- Organisational support was necessary for some groups.

Outcomes and conclusions

Although pharmacists are generally speaking solitary workers, they quickly noticed how much more enriching working in teams can be. It also takes some of the pressure off their shoulders when they work on group tasks. Moreover, the mix of hospital pharmacists and those working in community pharmacies

inspired all participants to review their working style and opened new paths for them - or how one student in the end said:

“...You managed to guide our international team in an optimal way and you successfully provoked everyone to perform in the best possible way. Thank you very much!”

They all said in the end that they are much more confident and now feel to be on a par with medical doctors because they realised that they have special knowledge which medical doctors do not have but which would disburden them. Some of the students even managed to start a process of change: pilot projects were set up in hospitals to include pharmacists in their ward rounds. It turned out that some countries are more open to such projects than others but the students learn from the exchange how to initiate and support a change and even develop strategies on how to move forward.

About 80% of the students are still staying in touch: they have set up a learning group within the platform and continue to discuss cases or just to share different upcoming projects in hospitals and to keep each other informed about new scientific findings and ongoing changes in the different countries.

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Reflective-frameworks and international education: Rethinking, teaching, learning and the curriculum: a case study

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Abstract

Recent educational reforms in New Zealand have resulted in the creation of diverse cultural cohorts and the integration of e-learning applications in course delivery. As a consequence, educators are now engaging with increased numbers of culturally diverse learners in ICT environments they are unfamiliar with. Educators are encouraged to reflect on their prior experiences, acknowledge the influence of learners' prior experiences on the learning process and engage in the design of e-learning events to meet the needs of this diverse cohort of students. Reflective-frameworks enable individuals to make connections and comparisons between their existing experiences and recognised standards. In essence, individuals make meaning from their experiences in relation to accepted practice. Building on an institutional initiative this case study will explore the use of reflective-frameworks. It will illustrate how self-reflective frameworks encourage educators to re-think their conceptions of teaching, learning and the curriculum. It will demonstrate how the use of a competency assessment tool (The CAT) helps individuals generate personal learning plans to suit their time-frames, location, language and culture. The paper concludes by arguing self-reflective frameworks encourage educators to be facilitators of learning rather than transmitters of knowledge.

New Zealand Context

Driven by fiscal restraints and the need to remain globally competitive in an increasingly knowledge-based, networked world, successive New Zealand Governments have introduced a raft of educational reforms. In the tertiary education sector these reforms have focused on firstly, improving performance and efficiency ensuring more learners from a broader ethnic, cultural and educational background can complete higher qualifications at an affordable cost (Maori Tertiary Reference Group, 2003; Ministry of Education, 2010) and secondly, increasing the organisational integration of e-learning systems and Information and Communication Technology (ICT) applications for administrative purposes and teaching and learning (Ministry of Education, 2004). As a consequence of these reforms tertiary institutions widened entry criteria, aggressively marketed course offerings (internally and externally). This resulted in greatly increased enrolments from both domestic and international markets. Educators now engage with increased numbers of culturally diverse learners in environments that often discourage group and/or individual tuition. Learners and educators need to acquire ICT skills and master software applications they were previously unfamiliar with. In essence, the introduction of

these reforms has seen a fundamental shift in perceptions of teaching, learning, the curriculum and the use of e-learning in the New Zealand tertiary sector.

Conceptions of Teaching

Historically, educators in the tertiary sector have generally been employed for their depth of knowledge of a specific discipline rather than their expertise in teaching practice. Not surprisingly, many of these educators have a limited repertoire of teaching skills often dominated by transmission modes of delivery such as demonstrations, tutorials, workshops or lectures (Brockbank & McGill, 2007). In these modes the educator is a 'broadcaster' transferring ideas, facts, processes and concepts wholesale into learners' heads. This concept of the educator broadcaster is illustrated in Figure 1 below (Clayton, 2009, p10).

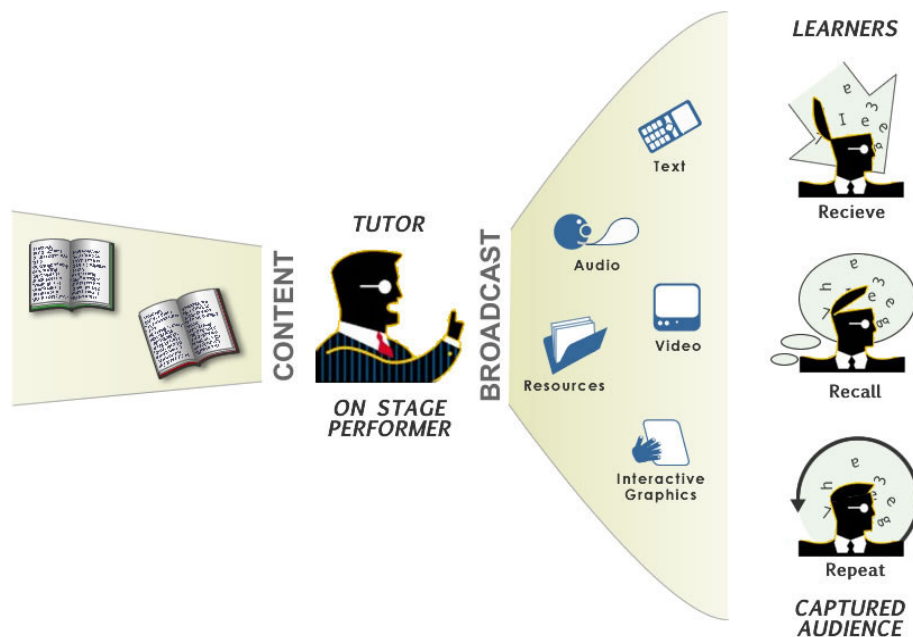


Figure 1 Educator broadcaster

The acceptance by tertiary institutions of increased enrolments of learners from broad ethnic, cultural and educational backgrounds creates a culturally diverse learner cohort. This cohort holds multiple-views of phenomena and has multiple-meanings for words that have proved to be useful to them in making sense of the world that surrounds them. In the learning environment created by this cohort it is an expectation educators will adapt instructional strategies and content presented to meet the educational, social and cultural needs of this diverse audience (Zimmerman & Schunk, 2001).

Constructivists acknowledge learners hold views of the world and meanings for words that are intelligible, (coherent and internally consistent) plausible, (reconciled with the views currently held) and fruitful, (useful to the learner in making sense) (Osborne & Freyberg, 1985: Posner, Strike, Hewson, & Gertzog, 1982). Knowledge is constructed as participants make connections between new materials and previous knowledge and experiences. It is in the recognition

of patterns and the creation of connections that is the key to learning (Gunstone, 1994; Sugerman, Doherty, & Garvey, 2000). In essence, understanding is dependent on an individual making meaning from their learning experiences. In this mode the educator actively encourages learner engagement with materials, they facilitate learning. This concept of the educator facilitator is illustrated in Figure 2 below (Clayton, 2009, p11).

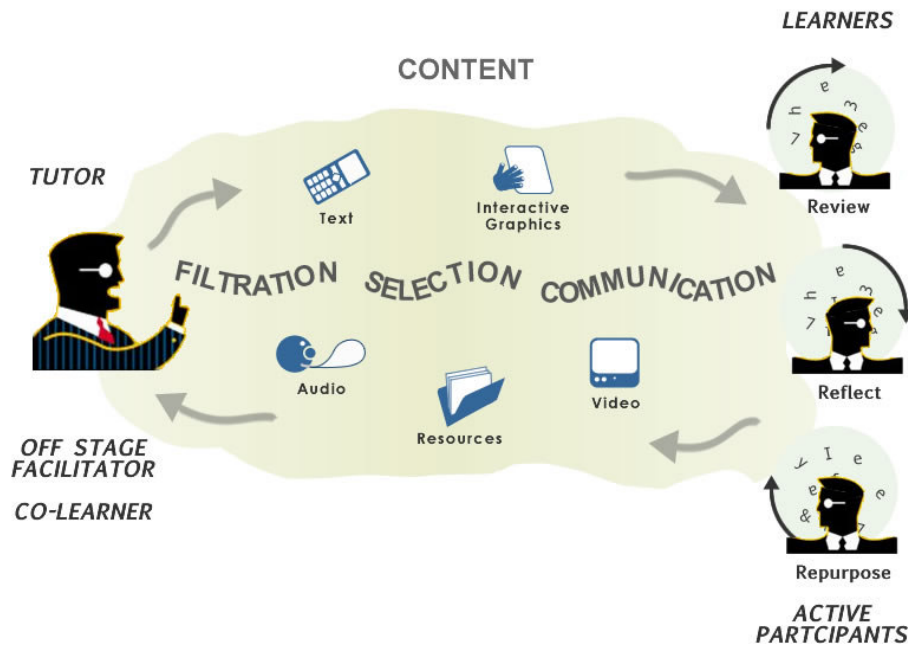


Figure 2 Educator facilitator

Conceptions of Learning

The conceptual shift in the role of the tutor from broadcaster to facilitator has led to a parallel conceptual shift in the perceived roles of learners. Under transmission modes of learning the focus of learning activity was upon discipline knowledge acquisition and mastery. In this mode significant indicators of progress and success are, in part, measured by the learner's ability to recall and repeat (see Figure 1 above). Under the facilitation modes of learning the focus of learning is on student skill acquisition and transfer. In this mode significant indicators of progress and success are, in part, measured by the learner's ability to reflect and repurpose (see Figure 2 above). There is an expectation learners will be self-motivated, be able to work independently, manage time effectively, and think self-critically.

Self-regulated learning acknowledges learners are in control of their learning experiences and environment. Learners, through the selective use of personal strategies are able to firstly, improve their ability to learn, secondly, can structure learning environments that suit them, and finally, play a significant role in selecting the form and amount of instruction they need (Zimmerman & Schunk, 2001). The self-regulatory learning cycle consists of three phases (Zimmerman, 1990; Zimmerman & Schunk, 2001; Kreber, 2004).

- Forethought: This phase refers to the selection of strategies to set the stage for learning
- Performance and volitional control: This phase refers to the processes occurring during learning, affecting concentration and performance.
- Self-reflection: This phase refers to the learner's thoughtful reactions to their learning experience.

Conceptions of Curriculum

The development of curriculum is based on the assumption that teaching and learning can be planned. In writing these plans a number of subtle models can be chosen depending on the writers' prior conceptions of teaching and learning. Over the last 60 years two distinct approaches have dominated curriculum development. These are the product approach and the process approach (Howard, 2007). In a product approach to curriculum development a prescribed formula is generally followed. Firstly, key objectives are identified, secondly, a teaching plan is constructed, thirdly, learning events are delivered, and finally, the outcomes of the plan are measured (Smith, 2000). In this approach education is regarded as a science with all elements recognizable and examinable. This product approach is focused on the objectives to be set, the content to be delivered and the prescribed outcomes to be evaluated. It aligns well with transmission conceptions of teaching and learning (see Figure 1 above).

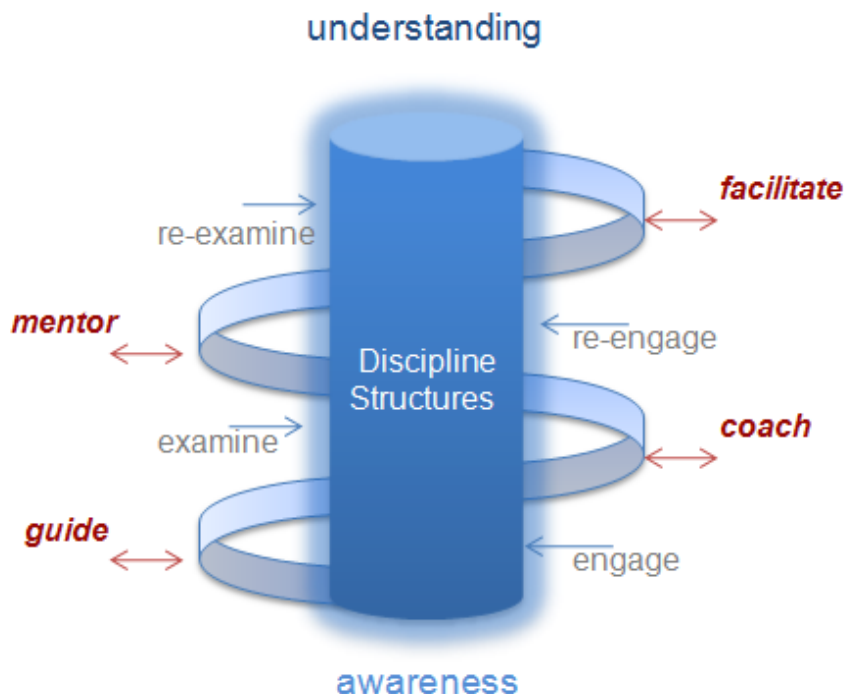


Figure 3 Process approach to curriculum development

In the process approach to curriculum development, greater emphasis is placed on the ongoing interactions of educators, learners and discipline knowledge

(see figure 3 above). Whilst content remains important it is not the defining feature of the process curriculum. Rather, focus is placed on the students' continual engagement with the basic structures of the discipline. As students engage and re-engage, examine and re-examine these basic structures deeper understanding occurs (Howard, 2007; Smith, 2000). This notion of examining and re-examining fundamental ideas over time is known as the "spiral curriculum" and is closely associated with Jerome Bruner (Howard, 2007). It aligns well with facilitation conceptions of teaching and learning (see Figure 2 above).

Conceptions of e-Learning

In a review of the range e-learning courses and activities developed and delivered by training organisations and educational institutions, it was clear developers, providers and users appear to have different concepts of what is meant by e-learning (Clayton, Elliott, Saravani, Greene, & Huntington, 2008). Individual learning events, courses and programmes differed in the degree of interactivity occurring between learners and tutors, the multi-media richness of content developed and the delivery mechanisms used to manage the learning experience. Each educational institution appeared to develop and deliver e-Learning based upon the current experiences of its tutors, the financial and physical resources available and the perceived learning needs of students (Clayton, 2007).

In practice e-Learning typically involves interactivity, such as student engagement with digital content, online interaction between learners and their instructors and online interaction between learners and their peers. It is facilitated by the use of computers (stand-alone and networked), digital communication tools (such as chat, e-mail, forums, messenger, VoIP) digital content creation tools (such as Wikis, Blogs and Web-folios) and digital content (such as web- pages, CD-Roms and DVDs) (Clayton & Elliott, 2007). In some cases, such as in an instructor facilitated video-conference, e-learning activities are carried out in 'real-time' and the activity undertaken is time constrained and dependant on attendance of all participants. This is known as synchronous e-learning. In other instances, such as student engagement with a CD-ROM simulation activity, the learning will occur in 'nominal-time' and the activity undertaken is not time constrained and is independent of other participants. This is referred to as asynchronous learning, or self-paced learning (Clayton & Elliott, 2007). In essence e-Learning can be usefully described as learning that is enabled or supported by the smart use of information and communications technology (ICT).

Curriculum for Diversity: A New Zealand Case Study

The Certificate in Open Flexible and Networked Learning

In 2010 the Waikato Institute of Technology recognised the need to provide professional development (PD) in ICT for staff to meet the needs of its increasingly culturally diverse student population. The Certificate in Open, Flexible and Networked Learning (COFNL) consists of 5 modules based on identifiable Unit Standards registered with the New Zealand Qualification Authority (NZQA, 2011). Basing the modules on these registered standards

ensured the institute was following best national practice and it aligned institutional PD delivery with national goals.

Reflective Practice Framework

As noted previously the concept of reflection has been widely debated in educational circles for a number of decades (Kreber, 2004: Brockbank, & McGill, 2007). To advocates of reflective practice, deep-learning is dependent on individuals making meaning from their experiences through reflection (Sugerman et al, 2000). To engage participants in reflective practice and to aid them in making connections between identified pedagogical standards in ICT and their previous experiences a self-reflective competency assessment tool (The CAT) was created for COFNL learners. The CAT was designed to enable learners to assess their current competencies against nationally defined standards. The CAT interface (see figure 4 below) provides the learner with a series of statements relating to each of the five modules within the COFNL. The statements within each module are classified within three categories, understanding, evidence and moderation.

Examine the relationships between participants in OFNL.	
Understanding	
I have a good understanding of the relationships (such as direct, indirect, active, passive, interactive, independent, and interdependent) that exist in open, flexible and networked learning environments.	Partially agree ▼
I have evaluated the impact different relationships between participants in OFNL (such as direct, indirect, active, passive, interactive, independent, and interdependent) have on student learning in different contexts.	Strongly agree ▼
Evidence	
I can provide digital evidence of my understanding of the relationships (such as direct, indirect, active, passive, interactive, independent, and interdependent) in open, flexible and networked learning environments.	Partially agree ▼
I can provide digital evidence of how my understanding of the relationships between participants in OFNL (such as direct, indirect, active, passive, interactive, independent, and interdependent) has been used in my practice in different contexts.	Agree ▼
Moderation	
My understanding of the relationships (such as direct, indirect, active, passive, interactive, independent, and interdependent) in open, flexible and networked learning environments has been peer reviewed.	Select ▼
Practical application of my understanding of the relationships between participants in OFNL (such as direct, indirect, active, passive, interactive, independent, and interdependent) has been peer reviewed and assessed.	Select ▼

Figure 4 Categories, statements and responses

Learners are asked to reflect upon and then respond to individual statements. As learners progress through the CAT their answers affect the indicator colour on the index page. The indicator colours are based on the familiar “traffic light” theme:

- Red: This indicates to the learner they have limited knowledge and/or experience of the identified standards. It also indicates how these limitations can be addressed.
- Yellow: This indicates the learner has some knowledge and/or experience of the identified standard. It also indicates how this existing knowledge/experience can be built upon.
- Green: This indicates to the learner they meet the requirements of the identified standard. It also indicates to the learner they can now build knowledge and experience in other areas.

As the learner progress through the modules, categories and statements, their responses provide a pictorial reflective framework carpet. This reflective process and visual carpet enables individuals to select which module(s) they need to review, which competencies they need to develop, what evidence they need to provide and how they should evaluate their practice. This reflective framework and visual carpet is illustrated in figure 5 below.

Demonstrate knowledge of support systems required for the provision of open, flexible, and networked learning.			
Demonstrate a commitment to the role of an OFNL teacher as a responsible and ethical practitioner.	Understanding	Evidence	Moderation
Demonstrate research-based knowledge of pedagogically effective use of OFN technologies.	Understanding	Evidence	Moderation
Apply OFNL technology in a range of environments to meet the needs of a diverse student population.	Understanding	Evidence	Moderation

	Competent, confident and capable in this aspect
	Has a degree of competence and confidence in this aspect
	Needs to acquire competence and confidence in this aspect

Figure 5: The reflective framework

The visual carpet produced from learner engagement provides the learner with;

- an initial assessment of their current knowledge, experience and understanding of individual aspects of this domain.
- an indication of potential starting points to begin a learning journey, and
- navigational tips to map a learning route from starting points to intended achievements.

In essence engaging with The CAT assists the learner in the creation of a personalised learning plan (Ward, & Richardson, 2007) enabling them to become self-regulated learners (Zimmerman, 1990).

The Mentor Relationship

Whilst designing individualised personal learning plans are focused on the individual taking ownership of the learning process, the regulations of the certificate recognise individuals cannot achieve their intended goals on their own. When the learner enrolls in the certificate they are allocated a mentor. Ideally the mentor allocated would be of the same cultural background as the learner. The mentor will use the results of the CAT and learners personalised learning plan to guide learners by providing appropriate links to educational theory and practical demonstrations. Through ongoing feedback and follow-through the mentors will create an environment that encourages greater autonomy, personal transformation and deeper self-reflection (Galbraith, M. 2003: Basile, Olson, & Nathenson-Mejia, 2003).

Digital Portfolios

A portfolio can be regarded as the purposeful collection of a learner's work that can be structured to exhibit the learners' efforts and achievements over time (Kim, Ng, & Lim, 2010). Portfolios are increasingly seen to be a valuable tool for assessment of competencies and are used in many professions such as nursing, medicine, and teaching (McColgan, & Blackwood, 2009). In accreditation environments like COFNL, digital portfolios can provide a protected space where learner evidence of competencies can be rigorously controlled and systematically evaluated (Fiedler, Mullen, & Finnegan, 2009).

In COFNL learners are shown how to structure their portfolio around the assessment rubric created for each of the five modules. The assessment rubric provides a measure of quality of performance based on established practice in open, flexible and networked learning environments as identified by the New Zealand National Qualifications Authority (NZQA, 2011). In essence the rubric is based upon what the participant can demonstrate they have learnt, rather than what has been taught. As such it should be regarded as an authentic competency assessment tool. Crucially the evidence provided will be the learners own creation showing how their experiences have met the identified standard. An example of this structure is illustrated in Table 1 below.

Main Category	Sub-category
Demonstrate knowledge of theoretical models of adult learning	Apply sound knowledge and understanding of adult learning theories and epistemological principles to the effective design of learning objectives, curriculum and application of OFNL technologies in learning and teaching.
	Contribute to the development of the knowledge base of the OFNL community.

Table 1: Portfolio Structure

Discussion and conclusion

This paper has argued recent New Zealand Educational reforms have encouraged the creation of diverse cultural cohorts and the integration of e-learning applications in course delivery. As a consequence, educators are now engaging with increased numbers of culturally diverse learners in ICT environments they are unfamiliar with. Educators are encouraged to reflect on their prior experiences, acknowledge the influence of learners' prior experiences on the learning process and engage in the design of learning events to meet the needs of this diverse cohort of students. Therefore, the introduction of these reforms requires a fundamental shift in educators' perceptions of teaching, learning, the curriculum and the use of e-learning. Historical conceptions of teaching as transmission, learning as repeat and recall and curriculum as product are replaced. They are replaced with empowerment conceptions of teaching as facilitation, learning as review and repurpose and curriculum as process.

However, it is recognised a shift from transmission to empowerment models of provision place extra demands upon individual educators. An identified risk inherent in the shift in models is the existing abilities of educators to effectively reflect upon their current practice and have the depth of knowledge to then create a responsive learning environment. To mitigate this risk it is argued a self-reflective framework approach, where learners are able to make meaningful connections between their previous experiences and recognised best-practice in their discipline will be required. This approach enables learners to work independently, manage time effectively, and think self-critically. It actively engages educators in the facilitation of learning mentoring learners as they work through their personal learning plans.

This paper has argued the effects of empowerment models of learning, driven by a reflective-framework approach, will be positive. This approach will enable learners to both make meaning from their experiences and actively learn from engaging in a reflective experience. This recognition of the individual needs of learners allow educators to extend their repertoire of teaching skills improving not only their professional practice but also the experiences of their learners.

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Reflective-frameworks and international education: Rethinking, teaching, learning and the curriculum: a case study

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Abstract

Since the 1980s the integration of Information Communication Technology (ICT) in education has been compulsory in developed nations. In Kenya ICT integration is quite recent and scanty (Amutabi, 2002). The adoption of computers in education has progressed gradually and almost through identical patterns, that is from the acquisition of basic computer skills, to computer aided teaching, communications and research, to usage in every subject. This adoption has been accelerated by the convergence of the computer and telecommunication technologies, like email and the internet.

Despite the significance of ICT in education, its use in secondary school education in Kenya is lacking and its adoption is faced with a number of barriers. In a few isolated cases, where the computers have been introduced in schools in Kenya through the New Partnership for Africa's Development (NEPAD e-initiative) and Computer For Schools Kenya (CFSK) programs, there is no clearly defined role in the teaching-learning process context and yet the secondary school students are in dire need of ICT skills in order to be equipped with the skills to function appropriately in this dynamic, information-rich and continuously changing environment (Republic of Kenya, 2006).

A variety of other surveys (Bosch, 1993; Niess, 1991; Trotter, 1997), while reporting strong computer usage by teachers, actually indicated a lack of integrated use within the curriculum. In many instances, it has been a case of fitting the curriculum to the computer rather than the computer to the curriculum.

The issue confronting the secondary school education system is how to integrate ICT in the curriculum through teaching and learning to meet the increasing pressure to use the new information and communication technologies (ICT) to teach students in the 21st century. Dest (2002) presupposes the need for ICT competent students and for ICT rich environments that enhance students' learning across the curriculum. In Kenya, however, despite the teaching of computer studies in schools, little effort is being made to use ICT for instruction. It is in this regard that this study sought to find out the challenges facing the integration of ICT in the teaching and learning of mathematics and sciences in secondary schools.

Research Questions

The following research questions were used to gather the information needed for the study:

1. To what extent have students used ICT as a tool in the learning of mathematics and science?
2. To what extent have teachers used ICT as a tool in the teaching of mathematics and science?
3. What are the attitudes of the students, teachers and head teachers towards ICT use in school?
4. What is the status of the respondent schools in terms of:
 - a. Teacher training?
 - b. Hardware availability?
 - c. Software availability?
 - d. Technical support?
 - e. Administrative support?
5. Which of the following factors relate to the use of ICT in the teaching of Mathematics and Science?
 - a. Teacher attitude?
 - b. Administrative support?
 - c. Teacher training?
 - d. Hardware availability?
 - e. Software availability?
 - f. Student attitude?
 - g. Technical support?
6. What are the barriers/challenges facing the integration of ICT in the teaching and learning of mathematics and science?

Hypothesis

There is no significant relationship between the extent of computer use as a tool in teaching and learning mathematics and science (integration of ICT) and the following:

- I. Teacher attitude
- II. Administrative support
- III. Teacher training
- IV. Hardware availability
- V. Software support
- VI. Student attitude

Justification/Rationale

The focus of this research on secondary education development is due to long decades of neglect of secondary education which should equip youth with the essential skills and knowledge needed for social capital accumulation, economic growth and self sufficiency.

The emergence of new technologies is changing society, requiring new strategies for effectively changing the educational systems in the country to fit in the global information village. This study will provide the stakeholders in education with the necessary knowledge and data on how to promote the use of ICT in the Kenya secondary school education system, hence making it relevant to the current global needs.

Theoretical Framework

According to Porter (1997), ICT as a teaching and learning tool in educational systems emerged only in the early 1990's, thus, it may be considered as an innovation. Rogers' (1995) theory of the diffusion of innovations provides theoretical guidance for this study on the challenges facing ICT integration in the secondary school curriculum.

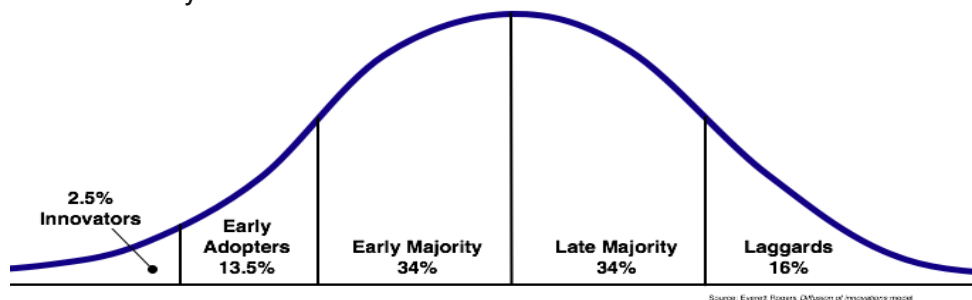


Figure 1: Rogers' Theory of Innovation Bell Curve

Computer technology has been adopted by some schools in Kenya (Amutabi, 2002). Since computer technology is an innovation being adopted by the schools in Kenya, there will always be challenges in as much as according to Rogers' theory of innovation, challenges are inherent in any adoption of innovation. This is reflected in figure 1, where 50% of the adopters are skeptical and traditional who could and would not adopt the innovation easily unless the innovation has become the mainstream. Further, even the 34% that are considered to be the early majority are also cautious about adopting the innovation. This shows that only a small percentage of 16% of adopters are able to immediately adopt any innovation. This theory, therefore, gives a solid foundation for this present study as it identifies the challenges faced by educators as they adopt the innovation of integrating ICT in the teaching of mathematics and sciences in secondary schools.

Research Methodology

This discusses the following: location of study, research design, population and sampling techniques, research instruments, validity and reliability of the

research instruments, data collection procedures and statistical treatment of data.

Location of the Study

Vihiga district formed the study area. Vihiga is one of the 24 districts that make up Western Province. The district is located on 0° 4 minutes N, 34° 40 minutes E. It borders Hamisi district to the north, Kisumu district to the south and Siaya district to the southwest. The district is 29.6 kilometres wide from the east to the west and 19 kilometres from the north to the south and occupies an area of 563 square kilometres (District Education Office, Vihiga, 2008)

Research Design

The study utilized a descriptive research design which involved the description, analysis and interpretation of circumstances prevailing at the time of the study in terms of the challenges facing ICT integration in the teaching and learning of mathematics and sciences in secondary schools.

The researcher identified from related literature variables that relate to ICT use to be able to determine the challenges faced by secondary schools in Kenya. The variables identified were teacher training, hardware availability, software availability, technical support, administrative support, teacher attitudes and student attitudes. The relationship of these variables with ICT use in Vihiga district was determined. The status of the respondent schools on the variables that were found related to ICT use was analyzed. Those variables that were found inadequate were identified as challenges that the schools face in the integration of ICT in mathematics and sciences.

Population and Sampling Techniques

Study Population

The study population comprised of the 50 secondary schools within the district. In these schools, there were 7,300 students, 50 principals, and 750 teachers.

Study Sample and Sampling Techniques

A purposive (judgmental) sampling technique was used. In this technique the researcher used his judgments regarding the participants from whom he wanted to collect information. According to Mugenda (1999), cost dictates the size of the sample that we can draw so that budgetary constraints must be taken into consideration when deciding on the sample size. A sample of 15 schools was used to carry out the study comprising of head teachers, mathematics and science teachers and students across the forms one, two three and four. This represented 30% of the schools. The fifteen schools were picked on the assumption that they are typical of many other schools within the district, these schools have common characteristics. The schools had computers and there was evidence that they have been offering computer studies in the curriculum for the last three years as an examinable subject at the Kenya Secondary School Examination (KCSE) and that, mathematics and science teachers in these schools had attended the SMASSE in-service training courses.

The respondents in this study were 15 principals/head teachers, 110 mathematics teachers, biology, physics and chemistry (science) teachers and 335 students sampled from across the four classes in the selected secondary schools. The mathematics and science teachers who were available when the researcher visited the sampled schools participated in the study. Classes were randomly drawn from across the four classes (forms 1, 2, 3, and 4) and all the students in the randomly selected classes filled in the questionnaires. This was done because computer integration is expected to take place in all the classes.

Fifteen teachers from the 15 schools were selected purposively for interview, that is, one teacher from each school. These teachers had been trained on ICT integration. Eight of these teachers had been integrating ICT in their respective subjects. The remaining seven had been trained but had not been integrating ICT in their teaching. This was done to help the researcher get responses on the challenges faced by these teachers who had been trained on ICT integration as some of them integrated ICT in their teaching while the others did not.

Research Instruments

Questionnaires

Three types of questionnaires, each consisting of close-ended and a few open-ended questions were administered. An interview schedule among particular teachers was also used to gather responses and to supplement the responses gathered from questionnaires.

Validity and Reliability of the Research Instruments

The validity of an instrument refers to the success of the scale in measuring what it sets out to measure so that differences in individual scores can be taken as representing true differences in the characteristics under study (Moser & Kalton, 1971).

Reliability, on the other hand, is the extent to which an instrument produces the same results every time it is used. It helps in identifying problems that might have been encountered by the respondents to the questionnaire items.

The content validity of the data is suitable when the data are true and accurate. Validity is the extent to which the measurement tool does what it is supposed to measure. The instrument must be valid as well as reliable. In order to establish content validity, the researcher gave the instruments to the experts of the University of Eastern Africa, Baraton, for content validity before the collection of the data.

The researcher established the reliability of the questionnaire items using the Cronbach's alpha coefficient, which helped to estimate the internal consistency of items.

The questionnaires were administered to the respondents, that is, the head teachers, Mathematics and science teachers, and students of one school in

Vihiga district for the pilot study. This was done to determine whether the instruments could yield the data needed, identify the problems that the participants could encounter in responding to the items and to find out if the items were clear or ambiguous. The alpha coefficient of the whole instrument was 0.622, meaning that the questionnaires were reliable.

The components of the questionnaires yielded the following reliability coefficients as shown in table 2:

From the table 2, the percentage that the instrument will yield the same result if re-administered to the same people were as follows; students' attitude—69%, teacher attitude—93%, technical support—62%, administrative support—77%, hardware availability—69%, software availability—60%, and teacher training—63%.

Table 2
Reliability coefficient of the components of the questionnaire

SCALE	RELIABILITY
Students' attitude towards computer use	0.690
Teacher attitude	0.927
Technical support	0.622
Administration support	0.769
Hardware availability	0.686
Software availability	0.600
Teacher training	0.627

Data Collection Procedures

Permission was sought from the head teachers of selected schools through letters written by the Dean of the School of Education and the National Council of Science and Technology three weeks before the study was undertaken. The researcher then visited the schools where questionnaires were administered and collected on the same day. The interview schedule was used at the same time for one teacher from each of the sampled schools.

Statistical Treatment of Data

The data collected was analysed and interpretations made based on descriptive statistics (frequencies, percentages, means and standard deviation) and Pearson product-moment correlation coefficient (for students where from preliminary analysis showed approximately normal distribution) and Spearman rank-order correlation coefficient (for teachers and principals where the distribution tends to be skewed), which established the relationship between variables. The coefficients were used in research question five to establish the relationship between the use of ICT in teaching and the independent variables. The level of significance was set at 0.05.

The open ended responses in the questionnaires were content analysed and incorporated in the study. Responses from interview schedule were summarized to supplement the data from the questionnaires.

Summary, conclusions and recommendations

This provides a summary of findings, conclusions and recommendations of the study.

Summary of findings

1. On the extent of students' use of computers, less than 15% of the learners use ICT in their learning .This is compounded by the fact that the software in use is quite foreign and not often used.
2. Less than 17% of the teachers use computers in the teaching of mathematics and sciences.
3. There was generally a positive attitude towards computer use by the students, teachers and head teachers in Vihiga district schools.
4. Regarding the status of schools on the independent variables:
 - a. Teachers lacked training in ICT integration.
 - b. There were few hardware resources in schools.
 - c. There are few software resources in schools. Little investment was made in the area of software by schools.
 - d. Little technical support was available. Most schools lacked internet connectivity and hence there was no on-line support.
 - e. Vihiga district schools lacked adequate administrative support as revealed in this study. Head teachers in the district do not offer adequate support to enhance ICT integration in schools, yet they were aware of the national ICT policy.
5. The study revealed that there is significant positive relationship between the use of ICT in teaching and learning mathematics and sciences and the independent variables.
6. The following are the challenges facing ICT use in Vihiga District schools; inadequate technical support, inadequate administrative support, inadequate hardware availability, lack of adequate and relevant software and inadequate teacher training.

Conclusions

Based on the above findings, the researcher made the following conclusions:

1. The use of ICT as a learning tool is quite low, an indicator that learners have not adopted ICT as a learning tool.

2. The use of ICT as a teaching tool is also quite low. This implies that teachers still have a higher preference of other resources to computers.
3. Students, teachers, and head teachers had accepted fully the role and importance of computers in the teaching and learning process.
4. On the status of the respondent schools:
 - a. Teacher training in ICT integration is inadequate, which has prevented many teachers from integrating ICT in teaching mathematics and sciences.
 - b. There are limited hardware resources in Vihiga District Schools which has therefore limited the access to computer use by teachers and students.
 - c. There are limited software resources in the schools. The available software is foreign software and hence, results in difficulties in terms of adopting for teaching.
 - d. Schools in Vihiga district lacked technical support which is a sensitive area as far as the future of computer resources are concerned.
 - e. There was generally a lack of administrative support and moreover, lack of ICT policies in schools.
5. In schools where teachers and students have a positive attitude toward computer use, adequate technical and administrative support, adequate software and hardware and relevant ICT training for teachers, there is a high likelihood of integration of ICT in the teaching and learning of mathematics and sciences.
6. Generally, schools in Vihiga District lacked adequate technical and administrative support, hardware and software resources and also teacher training.

Recommendations

There is a need for more teachers to be trained in ICT integration through pre-service and in-service training. From the study, only about 60% of the teachers are trained with basic skills and knowledge in the use of ICTs and their training must be upgraded or developed so that they are able to use the computer as a personal productivity tool for their classroom tasks.

The teacher recruitment process lays emphasis on the computer literacy of the teachers. Only about 44.5% are able to integrate ICT in teaching. Computer literacy may be one of the requirements when the Teachers Service Commission (TSC) is hiring teachers.

The head teachers should ensure that schools purchase more computers for schools and relevant software for the computers. Internet access should be made available and reliable in all the schools. Schools need to make an effort so that every teacher has his/her own computer connected to the internet and that all students and teachers must access email.

Schools ought to have computers serviced regularly and more technical support should be offered to teachers and students.

All school administrators are supposed to be competent in the use of ICT and have a broad understanding of the technical, curricular, administrative, financial and social dimensions of ICT use in education. National ICT policy should be part and parcel of the school curriculum. The policy should facilitate the affordable use of telecommunications and acquisition of computer hardware and software for educational purposes.

For a school to achieve ICT integration in a span of less than ten years administrators need to review the curriculum and consider approaches to teaching and the structuring of tasks

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