Challenges and Opportunities of Technology Based Instruction in Open and Distance Learning: A Comparative Study of Tanzania and China

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Introduction

• ODL is now becoming significant all around the world as an alternative way to meet the huge educational demand.

• ICT has the potential to address most of the challenges that distance learners encounter in their learning (Carr, 2000; Galusha, 1997).

• Thus, technology based instruction refers to the use of technology to facilitate and support effective learning (Duchastel, 1994).
Purpose of the Study

• Despite the notable potential of technology in ODL, many challenges loom concerning the use of technology and thus printed materials still dominate the teaching and learning process especially in developing countries.

• The purpose of the study was to identify and compare challenges and opportunities of technology based instruction in ODL in Tanzania (OUT) and China (CCDE).
Accordingly, the following research questions guided the study:

• What are the current forms of technology based instruction used at OUT and CCDE?

• What are the available institutional factors (human, policy, infrastructure) to support technology instruction/learning at OUT and CCDE?

• What are the challenges and opportunities of technology based instruction between OUT in Tanzania and CCDE in China?

• What strategies do OUT & CCDE use for effective implementation of technology based instruction in the provision of Distance education.
Forms of ICTs Used In Learning

- Computers, internet, mobile phones, TV/LCD, audio/visual cassettes, CDs, DVDs, blogs, wikis, podcasts and social networks
- TV/radio, one way video conferences, emails, and discussion forums (Chen & Bonk, 2008; Usluel & Mazman, 2009; Maro, 2008).
- **China**: TV/radio, printed materials, Audio tapes, CDROMs, Moodle, PowerPoint, computers, blogs and email
- **Tanzania**: radio and television in 1960s then stopped in 1970s, printed materials, Audio tapes, CDROMs, Moodle, computer, & mobile phones
Institutional factors to support technology based instruction

- The institutional factors are important for the effective use of ICT in ODL (Farrell, 1999).
- **China:** Some staffs lack ICT pedagogical skills, there are policies at ministry level and organization, There is high access to Technological infrastructures (Hu, 2005; Guo & Cai, 2006)
- **Tanzania:** Insufficient ICT literacy and pedagogical skills, Few technical staffs for installation & operation, Policies at ministry level and organization, Minimum access to Technological infrastructures (Nihuka, & Voogt, 2011; OUT ICT Policy, 2009; Sife, et al., 2007)
Opportunities of Technology in Education

- ICTs have the potential for increasing access to education
- improving the relevance and quality of education
- facilitates interaction between students and instructors
- helps instructors to develop interesting course materials through electronic courseware development.
Challenges of Using Technology in Education

Generally in developing countries:

- access to internet is very expensive,
- teachers lack technical and pedagogical skills to use technology,
- fear of inappropriate internet content that may have negative impact to local culture (Chapman, et al. 2004).
- inadequate funds for staff development and infrastructure development
Strategies To Overcome Those Challenges

• teacher professional development on pedagogical use of technology,

• sharing of content and information through education network,

• private and public partnership in ICT funding

• development of quality education online resources in local languages. (Tinio & Browne, n.d; Sharma, 2009)
Methodology

• This is descriptive study employed a cross sectional survey research design.

• Participants: were instructors (OUT=22; CCDE=10), students (OUT=57; CCDE=47) and technical staffs (OUT=4; CCDE=4) making total of 144 participants.

• Data collection instruments: close-ended questionnaire and focus group discussion
Results and discussion

Access to technology

- OUT instructors and students have access to **computers** (about 90%), **internet** (90%:86%) **mobile phones** (80%) and **TV** (about 80%) at large.

- CCDE have access to **multiple forms of technology** like computers, internet, mobile phones, TV, CDs/DVDs (for more than 90%), and video conferencing for more than 50%.

- CCDE respondents & OUT instructors have **multiple access points to computers and internet** like at working places, at home, at university library, or commercial internet centers while **OUT students** have access mainly at commercial internet café.

- Despite the access, e-learning is **not effectively implemented at OUT**
Results...cont’

Uses of accessed technology forms for learning

- **OUT**-computers and internet (about 70%), mobile phones (60-70%)
- **CCDE**-Computers and internet, mobile phones, DVDs/CDs, tv/Radio (at about 70% and above) and video conferencing (about 50%)

Specific uses for computers and internet

- **OUT** -email communication among staffs; searching learning materials and setting exams; and not for online Instruction/facilitation compared to CCDE instructors
- **CCDE**-managed utilize online education platform..“we use educational platform for learning, where by students have to access learning materials online...”

Preferred forms of technology

- **OUT**-Course management system ;CDs/DVDs; mobile phones
- **CCDE**-CDs/DVDs, videotapes and Course management system (computer and internet).
Results....cont’

Institutional factors to facilitate e-learning

Confirmation of existence of ICT Policy/guidelines
- 50%-CCDE & 90%-OUT, but with limited awareness of the contents of those documents.

Human resource:
- Instructors and students are positive towards the use of technology in education and have basic skills for different computer applications.
- Technical staffs are there, (although not sufficient)

Infrastructures:
- Internet and computer labs; wireless especially at college/university campuses, college/university websites with links to e-journal/online libraries.
Results..cont..’
Challenges (OUT seems to be mostly affected than CCDE)

• **OUT- slow** internet speed, limited number of computers and internet access points; unsuitable computers (speed and capacity), insufficient technological equipment, inadequate technological and pedagogical support and information searching skills (for students), **power breakdown**, **shortage of technical staffs**.

• **CCDE-slow** internet speed, high **cost of soft wares**, shortage of technical staffs, **outdated hardware**, **huge number of students using educational platform**
Perceived Opportunities of using technology in education-to improve:

- Students’ responsibilities for their learning, the relationship between theory and practice, in meeting students’ learning styles, flexibility, course delivery, student support services, feedback to students, communication and interaction
Results...cont’

Strategies to address challenges / encourage technology use in education

• CCDE is more active than OUT

• At CCDE - online examinations are **not done at once**; **maintenance** and use of old software; cooperation/partnership; **provision of frequent training** with technical support, **ongoing online communication** between students and instructors, **online and e-learning study materials to students**.

• At OUT - **one session training**, incentive/motivation provided in ICT policy; technical support (with **minimal pedagogical support**); **fewer e-learning** materials for further references
Conclusions

- **CCDE is more advanced than OUT may be due to multiple accesses to different forms of technology, continuous teacher professional development and continuous technical and pedagogical support.** At OUT instructors’ participation in e-learning is not satisfactory.

- **Computers and internet are the dominant e-learning technologies at CCDE along with print, CDs/DVDs, audio/videotapes and Television, whereas at OUT, print is the main form of education delivery.**

- **Instructors demonstrated minimal awareness of the contents of the guiding documents within their institutions.** Although, regardless of their unawareness CCDE instructors are fully involved in technology based instruction than OUT.
Conclusions..cont’

- Students and instructors from both institutions are **positive** towards the use of technology and have **basic ICT skills** necessary for using computers and internet for learning.

- **At OUT**, instructors have **multiple accesses** to computers and internet than students.

- OUT seem to be **more affected by challenges** like **access** to technological infrastructures, **insufficient pedagogy skills** to use technology, shortage of technical and education technology staffs, and **slow** internet connection.

- **CCDE**, mostly affected by **slow** internet connection, and shortage of qualified technical personnel.
Recommendations
For CCDE and OUT management

• There should be a regular discussion on institutional ICT guiding documents with instructors, management and technical staffs.

• OUT management should learn from CCDE and adapt frequent training programme and provision of continuous technical and pedagogy support to instructors.

• OUT management should learn from CCDE strategy of cooperation and partnership with public and private companies in e-learning

• OUT management should think of the use of blended learning technology like CDs/DVDs, and mobile phones

• OUT management should introduce user fee charges to OUT students when accessing internet at computer labs
For further research

- large scale study on how mobile devices can be formalized to be used by instructors and students in ODL

- How effectively can professional development programs designed regarding instructors’ use of technology in education

- feasibility of technology partnership with private and public enterprises and how can that be established.
Thanks for your attention and participation!!!!