Role of technology in enabling Inclusion in Education

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Role of Technology in enabling inclusion

Technology in Education – Culp and MacMillan (2003)

1) Technology as a tool for addressing gaps in teaching and learning
2) Technology as a change agent
3) Technology as a central force in economic competiveness

Technology in education – started with Open and Distance Learning (ODL) – UK Open University – 1930s

Later Africa, Latin America and Pakistan – 1970s , in 1990s other countries also joined in

Role of Technology in enabling inclusion – examples from Africa

Seemed to work well for countries with weak educational resources – lack of qualified teachers, infrastructural crunches

Successful in countries like - Somalia and Southern Sudan (Tilson and Thomas, 2009)

Mainly used for – three aspects

1) Improvement in educational quality and relevance of coursework

2) Low cost / cost effectiveness

3) Improvement in access

Various medium of technology was used – Radio being one of the first and more popular modes

Radio as a Supplementary Learning Tool

Interactive Radio Instruction (IRI) was used to improve learning outcomes in English and Mathematics, specially spoken English and mental Mathematics.

Nicaragua started radio math in 1974. This was followed by Kenya (1980), Dominican Republic (1981), Bolivia (1987), Papua New Guinea (1986), Ecuador (1988) Costa Rica (1989).

The South Asian countries first started using radio in 1992 with Pakistan's Radio Math and English in Action projects. Bangladesh started in 1994. The Indonesian government started using radio in 1993 for instruction in civics, math and teacher training. Nepal started using radio for training rural health workers in 1996. India started using radio in school as early as 1937 (Vyas, et al.,2002).

Interactive Radio Instruction (IRI) – Some Outcomes

In Haiti, Zambia and Sudan, IRI mathematics instruction showed positive results with respect to pre- to post-test gains. Even for early learners, IRI proved to improve learner achievement (Radio Instruction to Strengthen Education (RISE) in Zanzibar, 2009).

In India also, similar programmes were implemented. Kurrien (2008) studied the impact of ' We learn English' -2000 to 2008

- A bilingual radio program for teaching spoken English in urban and rural schools across various parts of India.
- Substantial impact on large numbers of urban and rural students studying in government schools, helping them to start speaking and expressing themselves in basic English.
- Despite the fact that their teachers themselves could not speak English. A large proportion of students came from poor families—exposed to any English at all in their homes or in their neighbourhoods.
- Furthermore, improved oral ability indirectly influenced improvements in writing skills

IRI in Karnataka

In 2005-06 Karnataka Government in collaboration with Education Development Centre (EDC) started IRI for Kannada medium elementary schools

A IRI based programme to deliver/teach the identified 'hard spots' in the curriculum using imaginative local themes, songs, games, role plays and activities

The programme also had a provisions for interaction between the teacher and students through 'pauses'

In 2007, similar Interactive Audio Instruction (IAI) was started in Urdu medium schools

CBPS Study on IRI in Karnataka – 2010-11

CBPS study in three districts – Raichur , Chamrajnagar and Bangalore urban with a sample of 1,392 students in 30 schools (10 receiving IRI, 10 receiving IAI , and 10 non intervention.

The study attempted to gauge the impact of the IRI and IAI on learning outcomes of children in mathematics and environmental science

The results although not statistically significant showed –

- Increased learning outcome for learners receiving the IRI in comparison to IAI learners and learners in non intervention schools
- Classroom observations and qualitative data showed – more interactive classrooms in IRI and IAI schools in comparison to non intervention schools
- Students were more active in IRI and IAI schools
- Teachers reported ease in explaining difficult concepts in IRI and IAI schools

Therefore increasing the quality of education and fostering inclusion by ensuring that all students reach at least a basic minimum level of skills irrespective of their backgrounds

CBPS Study on Teacher Recruitment and Transfers - 2016

National University of Educational Planning and Administration (NUEPA) – 9 state study on working conditions of elementary (only government) and secondary (government and aided) school teachers. CBPS studied – Karnataka and Jharkhand

The aim of this study was to document and analyse the recruitment and deployment policies and practice, salary and working conditions (transfer, postings, professional growth and development) of all categories of teachers (regular and contract teachers)

This study involved in depth interviews with various stakeholders, desk review of all policy related documents and secondary data analysis – DISE and SEMIS

Study on Teacher Recruitment and Transfers – Some Results

Technology fostering efficiency in management of processes- recruitment and transfers

Process of Recruitment

- Teachers' Eligibility Test (TET) introduced in 2014
- Centralised Entrance Test (CET) for eligible teacher applicants
- Preparation of merit list based on Social Category
- Total number to be recruited as per reservations calculated
- Computerised counselling for selection of first posting location

Study on Teacher Recruitment and Transfers – Some Results

Process of Transfer

- All transfers (elementary and secondary teachers and HMs) as per the Karnataka State Civil Services (Regulation of Transfer of Teachers) Act 2007(Karnataka Act No. 29 of 2007, GoK, 2007b)
- Only 5% of total number of sanctioned post can be transferred – within a unit of seniority and cadre
- Designate competent authority for transfers
- Redeployment of excess teachers to schools with need (calculated as per PTR, subject wise vacancy)
- Transfer on request – application followed by checks by BEO and DDPI, which is then entered into the computer programme. A priority list is prepared based on various norms which is then categorised into 3 zones (A, B, C). This is followed by a provisional list and counselling

All these processes are software based and lists are updated live.

How does technology foster inclusion in education?

The use of technology promoted transparency , efficiency and equity –need based allocation of resources and in turn Inclusion

Deconstruct the role of technology in the previous two studies – does not break any structural barriers as such. Functions within a framework with certain prerequisites fulfilled –

- Somewhat homogenous users
- Defined pool of users
- Certain levels of technological literacy present and if not, then other support present, to help the end user negotiate the technology
- Within a defined systematic frame – rules and norms – organisational framework
- Access to the medium of technology is not an issue
- Policy has been implemented efficiently
- Sensitive design – to user and the use of technology

With these prerequisites fulfilled technology fosters inclusion, and in cases not fulfilled it can widen exclusion. Examples from CBPS study on RtE and ODL

Thank You