CROSS-CUTTING ISSUES IN ICT USAGE AMONG MALE AND FEMALE TEACHERS IN KENYA AND UGANDA

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Introduction

In the educational sector, there is no question that the diffusion of ICT has profoundly changed teaching and learning approaches. Continuing advances in ICT available at increasingly low cost have opened new frontiers in teaching since the end of the 20th century. However, disparities in access, infrastructure, policy, socio-cultural factors and attitudes are a major determinant of inequities between male and female teachers in use of ICT in Schools.

The purpose of this article is to analyze the relationship between the use of ICT - number of hours spent on computer, among male and female teachers as related to cross-cutting issues such as age, professional training, socio-cultural factors, access, special needs, location and subject area. While gender disparity in ICT usage among learners has been studied widely (Isaacs 2002) less attention has been given to its use by teachers. Knowledge on the situation of male and female teachers in use of ICTs is inadequate.

Gender refers to "the differences between women and men within the same household and within and between cultures that are socially and culturally constructed and change over time…They are reflected in: roles, responsibilities, access to resources, constraints, opportunities, needs, perceptions, views, etc." (Moser 1993). Gender differences may vary, according to local circumstances, within a region as well as between regions.

Gender relations are also conditioned by ethnicity, socioeconomic level, and age. That is, a range of factors affects the relations both *among* and *between* women and men. Educated women who live in urban areas with access to some level of discretionary income are in a much better position to take advantage of opportunities such as ICT, than either women or men at lower socioeconomic levels who live in rural areas.

The study will focus on teachers in selected learning institutions in Kenya and Uganda. The data will be drawn from the Observatory of the Pan African Research Agenda on Pedagogical Integration of ICT in Education in Africa.

Context

Previous studies have shown that ICTs are not gender neutral and they impact men and women differentially. In almost all cases, women have many disadvantages that result in their having less access to and use of ICT. This study sought to investigate the factors influencing the use of ICT among male and female teachers in Uganda. While many studies seem to have focused on learners, use by teachers has been rather inadequate. The study is guided by three objectives namely to:

1. Establish the influence of age on ICT usage among male and female teachers
2. Determine the relationship between professional training and ICT usage among male and female teachers
3. Determine the relationship between the subject taught on ICT usage among male and female teachers

Conceptual framework
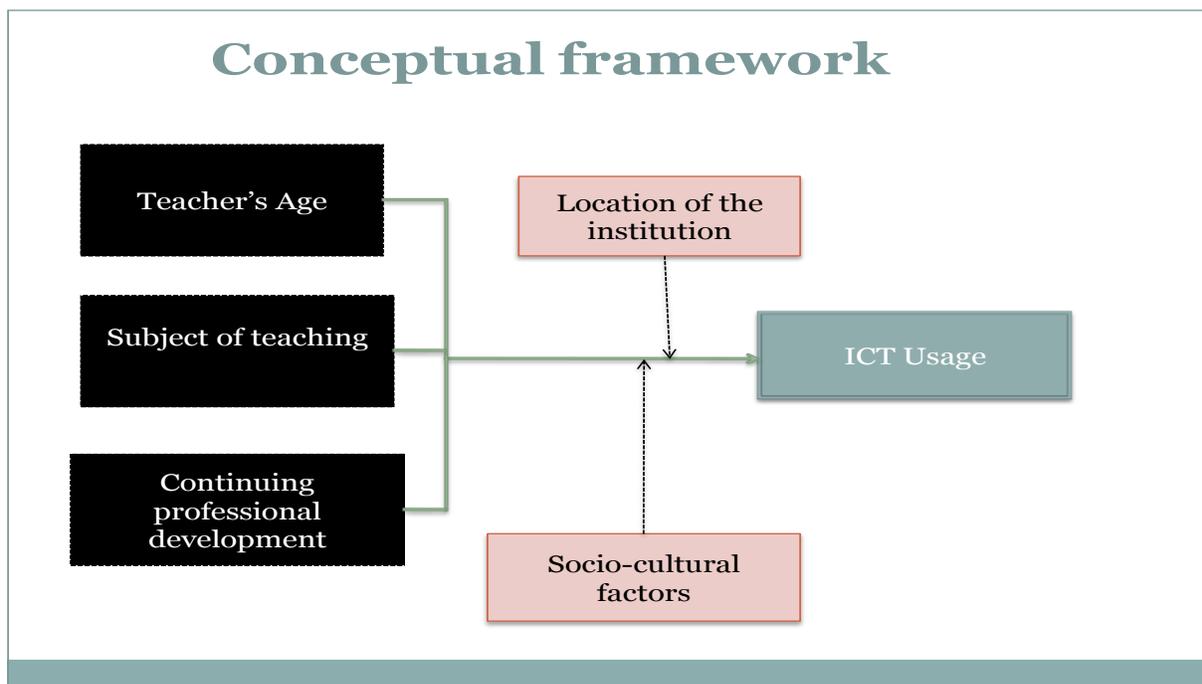
Methodology

The mixed method approach where both qualitative and quantitative approaches were used to collect data was chosen for this study. The selection of subjects was based on a multi-case approach as opposed to a single case study. Twenty educational institutions in Kenya and Uganda were targeted for study. The target population was male and female teachers.

Selection was not based on a statistical model, but on the significance of the case for the objectives of the study, which in this case was the presence of computers in the institution. Diversity factors taken into consideration for the selection of institutions included gender, type of institution, geographical location and ownership.

The indicators of ICT usage: the frequency of ICT use by the teachers for academic purposes; types of ICT use by teachers; types of software and number and types of courses/subjects taught using ICT. For every indicator, triangulation was employed by seeking views from the school managers, educators and learners on the same indicator. The following qualitative and quantitative data collection instruments were used:

- semi directed interviews with school directors, administrators, pedagogical advisors, and parents;
- focus group discussions with pupils and teachers;
- audiotapes of discussions, videotaped classroom observations and photographs of school environments;
- review of school documents on ICT and teacher and student productions;
- Questionnaires for quantitative data from pupils and teachers on access, usage and training.

By applying similar procedures for data collection, comparison between subjects was possible.

Data analysis was done qualitatively using narratives guided by the research objectives and quantitative data was analyzed descriptively and presented in bar graphs.

Presentation of findings and results of data analysis

- No. of male/female educators per institution (%)

- Access to computers – female/male ratio

- Professional training by female/male educators

- Frequency of use by female/male for academic purposes

- Type of ICT use by male and female educators

- Factors supporting ICT use for academic purposes as stated by female/male educators

- Barriers to ICT use for academic purposes as stated by female/male educators

Profiles of institutions

The study involved twenty one educational institutions in Kenya and Uganda as follows: 9 primary schools, 9 secondary schools

- 3 teacher training institutions

- 952 teachers

- 462 male teachers

- 490 female teachers

SCHOOL	TYPE	LOCATION	GENDER	OWNERSHIP
Aga Khan High School	Secondary	Urban	Mixed	Private
Enna Girls School	Secondary	Semi-Urban	Girls	Private
Kenya Technical Teachers College	Teacher Training	Urban	Mixed	Public
Musa Gitau Primary School	Primary	Semi-urban	Mixed	Public
Musa Gitau Secondary School	Secondary	Semi-urban	Mixed	Public
Ruraka Academy	primary	Urban	Mixed	Private
St, Joseph's Githunguri High School	Secondary	Rural	Boys	Public
Green Garden School	Primary	Rural	Mixed	Private
Tigoni Primary School	Primary	Rural	Mixed	Public
Uthiru Girls High school	Secondary	Urban	Girls	Public

ICT Usage

Average use in hours per week – males and females

Proportional gap in male/female averages

ICT Use among male and femal e teachers
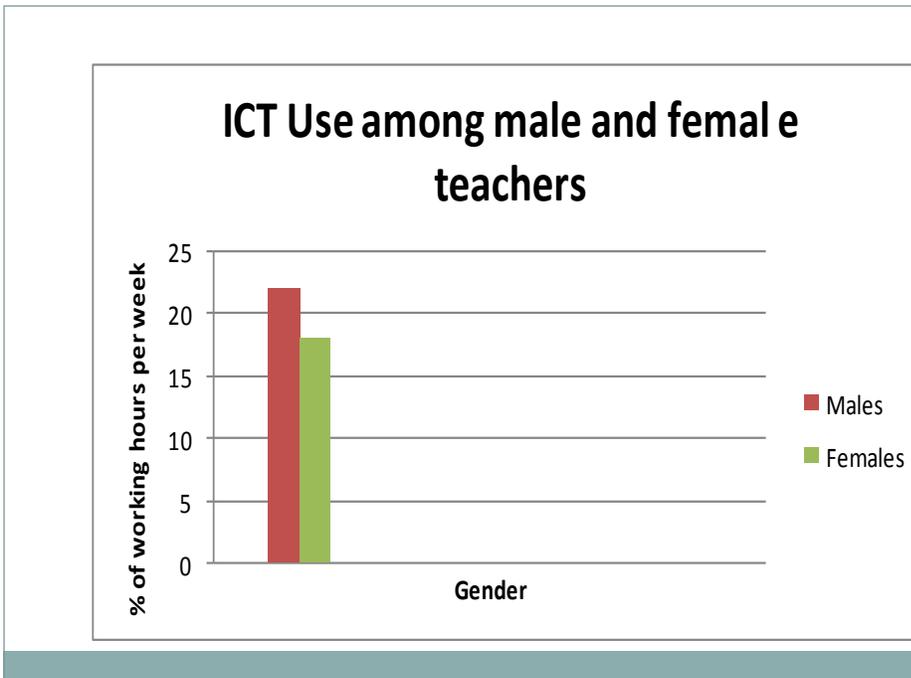
Age

Younger male and female teachers use ICT more than older teachers

Younger teachers have more experience with computers through email, social networking like facebook etc.

- Teacher training colleges teach computer literacy

- Older teachers (born before computers) have to struggle and suffer from technophobia

- Among the older teachers, male teachers are likely to use ICT more than female teachers – science teachers, mathematics, more income and time to learn computers

Teacher's age

Years of experience is used as a proxy for age

Gender	Less than 10 years	11 – 20 years	More than 21 years
Male	15%	30%	55%
Female	18%	33%	50.5%
Mean	16.5%	33%	50.5%

- Younger male and female teachers use ICT more than older teachers

- Younger teachers have more experience with computers due to email, social networking like Facebook etc.

- The results showed that the teachers who are already regular users of

ICT have confidence in using ICT, perceive it to be useful for their personal

work and for their teaching and plan to extend their use further in the

future.

- positive factors which encourage

- teachers to use technology: collegiality among computer-using teachers at

- their school,

- Recent graduates from Teacher Training Colleges have computer literacy

- Curriculum of older teachers (> 20 years experience) or BC (born before computers) suffer from technophobia

- Among the older teachers, male teachers use ICT more than female teachers as majority teach science subjects, mathematics and technical subjects which have ICT component

- It was found that the teachers could be grouped into three distinct categories: 'the

- fearful' represent those usually older teachers for whom ICT is generally a

- threat and the cause of much anxiety. As a percentage they might represent

- approximately 16% of all English teachers.
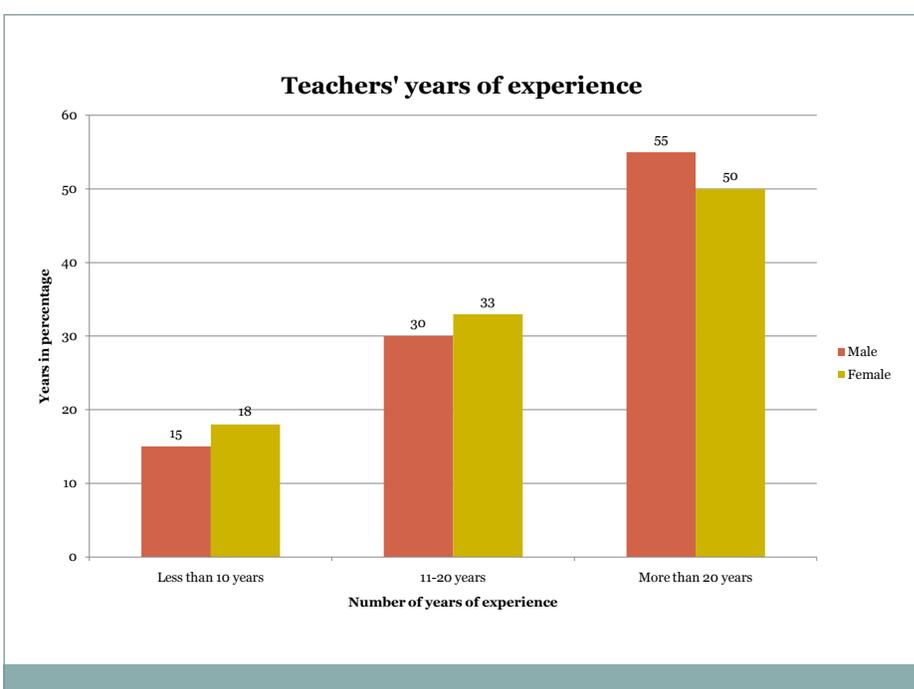

Professional training

Kenya – Trained males 40% and trained females 31.69%, Uganda – Males 58.56%, females 41.14%

- Total males managers for both countries is 168, % trained 79/168 = 47%

- Total females mangers for both 207, %trained 83/207 = 40%

- Shows more male managers have received more training than female managers

- **Socio-cultural factors**

-   Different roles for male and female – Females have triple role of domestic, productive and community responsibilities, hence longer workdays

-   Time limitations due to dual roles

-   Misconceptions that women are less suited to technology hence attitude problems leading to lack of interest

-   The socio-cultural and economic context reflects use of ICTs by men and women

-   Limited disposable income by female teachers

-   Differentials arise from structural gender inequalities in society

-   Unequal power relations in society

Geographical location

Endemic challenges of rural schools – infrastructure, connectivity, affect both male and female teachers in the same way.
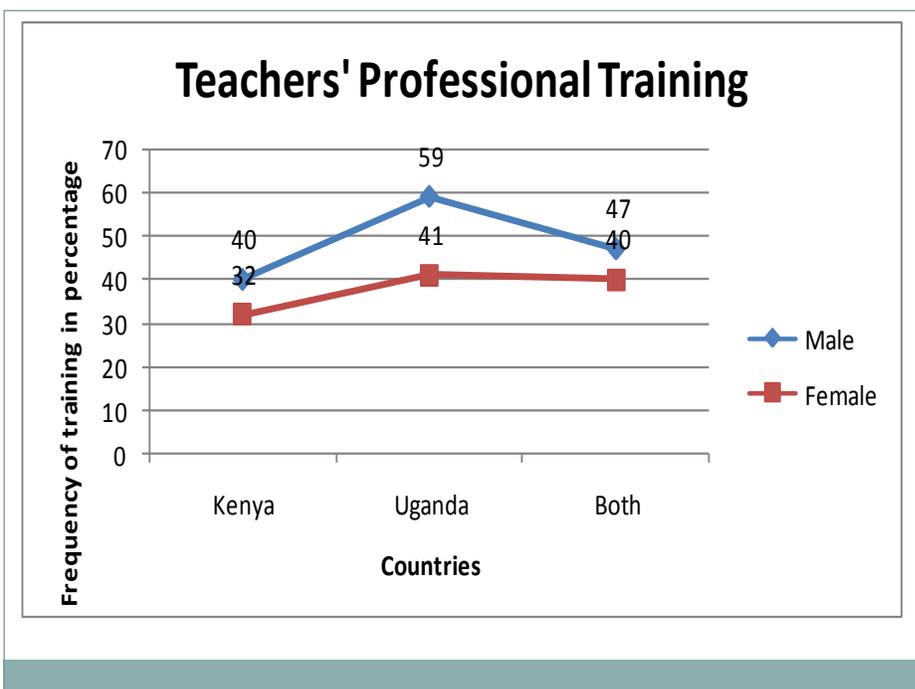
Teaching a science/technological subject

Subject areas where ICT is used most

In Kenya and Uganda 80% of ICT use is in Science and mathematics; 90% teach computer studies and computer literacy; 30% use computers for science competitions; only 15% use it for other subjects.

Implication: Most science and computer technology teachers are males

They receive training from suppliers of the software like cyber schools and computer suppliers to schools like CFSK

ICT use is more prevalent among teachers of science and mathematics the majority of whom are male. This means more male teachers use ICT than female teachers

Extent of ICT use in various subjects

Percentage responses from the institutions

Subject	Always	some of the time	Rarely	never
Languages	none	80%	5%	15%
Humanities	none	50%	30%	20%
Mathematics	none	75%	10%	15%
Sciences	none	80%	10%	10%
Technical subjects	90%	10%	none	none
Computer studies	100%	none	none	none

Extent of ICT use per subject
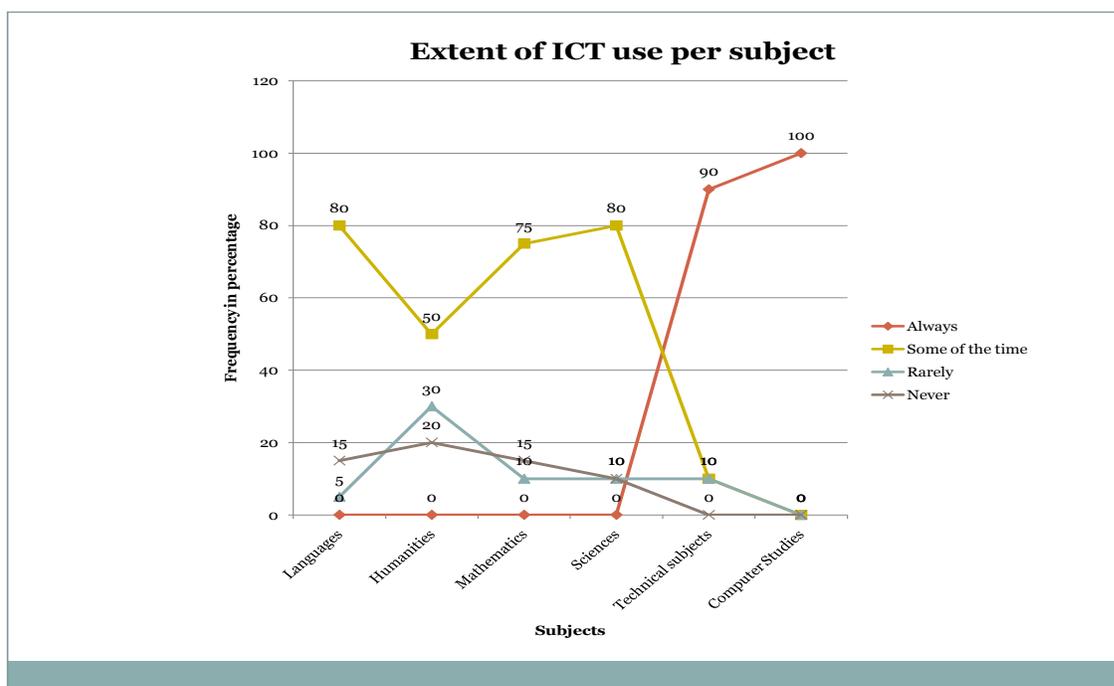
Discussions

- Different roles for males and females in society

- Females have triple role of domestic, productive and community responsibilities, hence longer workdays

- Time limitations due to dual roles

- Misconceptions that women are less suited to technology hence attitude problems leading to lack of interest

- The socio-cultural and economic context reflects use of ICTs by men and women

- Limited disposable income by female teachers

- Differentials arise from structural gender inequalities in society

- Unequal power relations in society

- Geographical location of institution

Conclusions

- Endemic challenges of rural schools – infrastructure, connectivity, affect both male and female teachers in the same way.

- Male teachers receive training from suppliers of teaching software like Cyber Schools and computer suppliers to schools like Computers For Schools Kenya

- It is apparent that structural differences that occur at lower levels of education translate into unintended disparity among male and female teachers in ICT use

- Socio-cultural factors are intertwined with ICT use in schools

- ICT in education is a gendered terrain

- Educational institutions should introduce gender sensitive policies and regulations

- ICTs in education should be designed with women's needs in mind