Issues in gender, information technology and education

Importance of the topic: assuring gender equality in the knowledge society
Caveat

• Research has been done establishing all of the statements to be presented
• That does not mean that they hold true in all cases and all places
Interest in computers

• Girls often have less interest in computers (and, sometimes, math and science) than boys

• Gender bias in technology comes from teachers, parents, the media, association of computer culture with males

• Boys tend to have more positive feelings about computers than girls

• Computer/video games are marketed to boys; playing these games as children increases their comfort with computers

• Age factors: as girls grow older, they tend to decline in interest in computers

• Class factors also impact: parents’ with higher socio-economic status and education gave more encouragement about computers to girls
Learning styles

- Girls tend to prefer collaborative work (group work) on computers, while boys prefer to work individually and competitively.
- Boys tend to like technology for its own sake, whereas girls are more interested in its applications, thus different gender-based learning styles need to be taken into account.
- Much research has been done on whether girls tend to achieve more on computers in single-sex settings: no definitive findings have emerged.
Software
• Software tends to be designed with boys, men as the default

Role models
• Girls’ interest, success in these fields in constrained by lack of female role models, particularly teachers
• However, girls do well with mentors of either sex
• Girls/women tend to continue in computer science when their teachers (of either sex) have positive attitudes towards women students
• Male teachers tend to use computers as learning tools more frequently than women teachers

Teachers and gender bias
• Teachers, both male and female, often exhibit bias against girls’ studying, using computers or favor boys in this regard, treat them differently in class
Access

• Girls’ often have limited (and less than boys) access to computers, in schools, at home and in public places

• Small numbers of computers in schools tend to disadvantage girls if no “fair use” policies are in place

• Girls experience problems with physical safety in going to computer labs/cybercafés at night
Learner confidence

- Boys tend to dominate computer-related tasks and discussions in class.
- Girls tend to have more anxiety about computers than boys, but...
- Girls tend to underestimate their technology skills (while boys tend to overestimate them).
- Girls’ comfort level with computers increases with experience.
- Males frequently denigrate the technological skills of females.
- Given the economic and practical realities of poor countries, sometimes, girls’ overcome traditional barriers to study in these fields.
- Ubiquity of mobile phones/social media in young generation tends to be gender equal.
Gender issues in pre-service teacher education

- Very little research has been done on gender and technology differences in pre-service teacher education
Leaky pipeline

- There are fewer girls and women in science and technology education at each successive educational (and employment) level
- Fewer girls than boys study computer science, go into technological fields
- African women have the world’s lowest enrolment rates in science and technology education at all levels
- It is harder/less common to combine computer-assisted learning with subjects in which girls’ tend to be more interested
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Mobile phones and social media

- Overcome social place disadvantage of computers
- Increasing availability of broadband, smartphones increase information availability
- Girls tend to be more active on social media than boys (girls tending to excel in communication)
- But, Internet and social media frequently portray negative and dangerous (pornography, stalking, trafficking) images of women
  - Other phenomenon such as bullying, eve-teasing victimize women
  - Such images call for schools to teach critical thinking
- Social media have positive aspects for education (group study)
Outcomes/impact

• No consensus that either girls or boys have better outcomes from computer-assisted learning.
• Girls, however, do seem to gain more in self-esteem than boys from successful computer use.

☑️ The larger issue: how can education remove the barriers that are interfering with girls’ and women’s access to technology and success in it.