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EXPANDING WOMEN'S CAPACITIES THROUGH ACCESS TO ICT: AN OVERVIEW FROM SRI LANKA

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ABSTRACT

Using ICTs to enhance women's capacities and for their empowerment has many dimensions. The current trend of a technology push will not achieve the desired results without equal attention being paid to other dimensions - institutional and human capacity building-education, training, capacity building of teachers, trainers and mobilisers. As importantly the gender barriers that exist have to be recognised and removed to enable women and girls to have access to equal opportunities for training, acquisition of skills and knowledge. This paper presents an overview of the current ICT policies and strategies in Sri Lanka and examines whether gender issues at different socio-economic levels are addressed. Using examples from two different models that are currently being used by a government agency and a NGO to reach the grassroots the paper will assess the extent to which these initiatives contribute to enhancing women's capacities through access to information and knowledge.

EXPANDING WOMEN'S CAPACITIES THROUGH ACCESS TO ICT: AN OVERVIEW FROM SRI LANKA

Introduction

The ICT policy statements that had been prepared over the last two decades in Sri Lanka recognised the need to reduce urban-rural disparities but none had an explicit reference to addressing gender issues. The Millenium Development Goal 18 – "In cooperation with the private sector make available the benefits of new technologies especially information and communications technology" and its conventional indicators measure only infrastructure development. Yet ICTs are to be used as a lever for the achievement of other MDGs. The major initiative that is now underway in Sri Lanka to use ICT for "the benefit of the people and for socio-economic development" also ignores gender issues. The lack of gender mainstreaming in ICT policy is not surprising given the lack of gender mainstreaming in many other areas.

New information and communication technology has the potential to benefit women but at the same time it also has the potential to marginalise them in the knowledge-based economy if gender issues are not addressed. Digital technologies are looked upon as an enabler to overcome poverty, improve welfare and empower women. The government has a crucial role in ensuring that women are able to access the benefits of ICT. However, these national ICT policies have not been engendered while they are heavily biased towards the private sector, and technical and financial considerations and are not particularly pro-poor. The ICT sector is also male dominated with no women in decision making positions in policy bodies. As gender inequalities are entrenched in society any policy intervention should ensure that existing gender inequalities are not exacerbated and that new inequalities are not created when policies and programmes are implemented to develop human resources. In addressing gender issues in national policies and programmes gender equity should be an explicitly stated objective with clear-cut strategies to achieve these objectives and indicators to monitor progress. If not, the gender-neutral policy could translate into gender discriminatory action when the policy is implemented it would be unlikely that girls and women will be able to get the benefits of the information society.

For the purpose of this paper expanding women's capacities using new ICT[1] will be looked at from two broad perspectives. First integrating ICT in the education system[2] as a separate subject/discipline, and in using ICT as a part of the curriculum. The paper will focus on ICT education as a discipline from the point of view of expanding the capacities of women to have access to new employment opportunities that arise in the ICT sector, and in sectors that use IT. Second is from the broader perspective of giving women more space to expand their capacities to challenge unequal gender relations and to fully participate in society in the context of the current efforts at increasing access to technology.

[1] ICTs are defined as technologies that use both telecommunications and computer technology that enable the processing and storage of large quantities of information and their rapid distribution through communication networks.

[2] The education system for the purpose of this paper includes state and private schools, universities and training institutions, and vocational training institutes.

Education

One the most important factors in enhancing the capacity of women and girls to access the benefits of digital technologies is education. By all indicators girls have equal access to education from primary to tertiary levels, retention rates for girls at both the primary and junior secondary levels are higher than for boys and the gender gap in literacy levels is minimal[3]. Educational opportunity to all socio-economic groups was extended with the establishment of a network of schools spread throughout the country. Gender equality in access to general education was achieved in the 1960s.

Yet despite positive achievements in basic education, literacy and enrolment rates have stagnated in the 1980s and 90s, 18% of students drop out after year 8 the majority of whom are from impoverished districts and conflict affected areas. Cut backs in educational expenditure and low investment in the sector[4] leading to a decline in the quality of education has implications for access to IT education. Disparities in the provision, utilisation and outcomes of education have emerged, persisted and widened. High repetition rates and low pass rates at ordinary and advanced levels in the national examinations have accompanied the decline in educational standards. Only 40% of ordinary level students qualify for the advanced levels, 50% fail in Mathematics, and 70% fail in English. Sex disaggregated data show that more girls than boys fail in mathematics and consequently are unable to enter the science stream at the advanced level limiting their access to graduate level studies at universities. Further, science education is available only in about six per cent of the schools. Twenty five per cent of these schools were in urban areas while in rural areas only four per cent of the senior secondary schools had science education (Jayaweera, 2004). The lack of facilities places the vast majority of students, mainly from non-urban areas at a disadvantage in studying science and technology related subjects and limits their prospects of remunerative employment. In the 1990s however attention was refocused on equity primarily in response to international conventions. The imperative of improving the quality of education and policies focused on reducing disparities in access to science, technology and improving English language skills gained the attention of policy makers.

The introduction of IT into state educational institutions has been affected by the slow development of ICT sector. Sri Lanka had recognised the need to use new ICT for economic and social development when it first formulated the National Computer Policy in 1983. Attempts made at implementation were not successful and two decades later telecommunications infrastructure has not expanded significantly into semi-urban and rural areas where the majority of girls live, and universal access is still a long way off. The computer literate population is 10% and only 3% could use email and the Internet, these users are predominantly urban based and concentrated in the Greater Colombo area (Department of Census and Statistics, 2004).[5]. Twenty of years of armed conflict, political and social instability, slow economic growth, resource constraints

[3] These achievements were brought about by the change of the medium of instruction from English to local languages, and the provision of a social welfare package comprising free education, availability of free health services and food at subsidised rates.
[4] Sri Lanka spends only 2.8% of its gross domestic product on education compared with the 3.5% average in Asia.

impacted on ICT penetration. Sri Lanka still lags behind many countries being ranked 61 out of 72 countries in the Technology Achievement Index (TAI) of the UNDP.[6]

Integration of IT or computer education into the formal curriculum in school education has occurred at the year 10 and 11 levels in combination with science. Teaching is limited to theory. The Educational Reforms Committee made strong recommendations for the incorporation of ICT as a subject into the school curriculum[7] but still it is only an optional subject for the GCE (AL) examination. Sri Lanka has not made any headway in integrating IT into the curriculum or using it for teaching-learning purposes.

Starting with children makes sense, as it is easier to get children used to the new technology. The WSIS Declaration of Principles (Article 11) states "we recognise that young people are the future workforce and leading creators and earliest adopters of ICT. They must therefore be empowered as learners, developers, contributors, entrepreneurs and decision-makers." The integration of technology at an early age into education would be particularly advantageous to girls as that would dispel the perception that technology is for men and weaken gender role stereotyping. Equal access of girls to education and their higher retention rates will be an advantage to them in having access to computer literacy.

The introduction of IT as a subject and as a tool for learning-teaching requires a large amount of resources, which countries like Sri Lanka lack. Resources need to be allocated mainly for hardware, maintenance, connectivity, and training of teachers. Some progress has been made in equipping schools and meeting hardware requirements to enable the integration of ICT into the school curriculum. Over 1500schools have been equipped with computer labs with loan funds from multilateral agencies. The targetted equipping of 15% of all primary schools with ICT labs within the next three years under the e-Sri Lanka programme too will be undertaken with concessional loans from the same source.

The ongoing teacher-training programme will benefit mostly women who comprise about 60% of the total teaching cadre in government schools. The capacity of pre-service and in-service teachers is being enhanced through 17 National Colleges of Education which have also been equipped with computer labs to introduce IT into teacher education programmes to create opportunities for system wide professional development. While the quality of such training is still to be evaluated enhancing the capacity of female teachers to use IT would immediately increase the number of women who could access information, act as mentors and role models to schoolgirls and increase the capacity of the community through the computer resource centres that have been established. Earlier studies found that parental and teacher attitudes were constraints to the study of

[5] The survey covered 11,000 households in all but two districts of the country and all members between 5-69 years in the household were interviewed. The data however have not been disaggregated by sex.`

[6] The components of the index are: Technology Creation-patents granted to residents, receipts of royalties and license fees; Diffusion of Recent Innovations -Internet hosts, High and medium technology exports: Diffusion of Old Innovations - telephones, electricity consumption; Human Skills - mean years of schooling, gross tertiary science enrolment ratio.

[7] The six-year strategic plan from 2002 to 2007 developed based on the National Policy on Information Technology in School Education (NAPITSE) also proposes IT literacy programmes with exposure to computer education from junior secondary level and as a subject at the two national examinations.

technology by women. If teacher attitudes towards technology are to be changed technology training needs to be accompanied with gender sensitisation programmes and awareness of the usefulness of IT to give women the opportunity to create a space for collaborative action.

Integration of IT into the school curriculum would require not only hardware and teacher training but a host of other issues also need to be taken into account. These include awareness raising, curriculum reform, financial sustainability, content, technical training and pedagogical capacity building. Above all the danger of creating more disadvantages have to be considered if equality in access is not available to all children as has happened in the case of the lack of facilities to study science.

All the state universities offer professional courses in IT for internal and external students. However, equality in access to university education has not enabled women to study for IT, science of engineering degrees due to the current subject requirements of physical science as a prerequisite for enrolment in IT degree courses. The enrolment of women in IT education-degree, higher diploma, diploma and certificate levels offered by private sector institutions is approximately 25% but they are crowded at the certificate level.

The 25-year period 1966-2000 (University Grants Commission, 2002) has seen an increase of women in all the academic streams at universities. However, while the number of women in such fields as law, social sciences/humanities/education has recorded substantial increases despite high rates of unemployment among graduates of these disciplines, the engineering course recorded only a marginal increase over the same time period. This also reflects enrolment trends in schools where Arts students who qualified to enter the university constituted 70% of girls and students qualified in Physical Science comprised 30% of girls. Thus despite gender equality in access to education, subject selection and poor performance disadvantage women in gaining entry into IT and engineering courses.

When strict entry requirements are relaxed enrolment rates of girls in IT have increased, as was the case of the Bachelor of Information Technology external degree offered by the University of Colombo School of Computing. But other factors such as the lack facilities, lack of transport, late evening classes and high cost of access have acted as constraints leading to high drop out rates among both girls and boys from the regions.

The democratisation of educational opportunity with the introduction of free education and the introduction of national languages benefitted girls more than boys as seen by overall enrolment rates. However, studies have shown that there is socio-economic differentiation in access to areas of study that leads to remunerative job opportunities and that women were the most disadvantaged by their low participation in technological education. Computer awareness programmes are being conducted in schools but no concerted effort has been made to eliminate gender role stereotypes. Private institutions offer a variety of training courses but there is little sensitivity to addressing gender issues.

Research in Sri Lanka (Gunawardena, 2004; Jayaweera, 2001) as well as elsewhere, suggests that the process of socialisation of girls and teacher

attitudes that promote stereotypical behaviour among girls and boys result in girls being channeled into 'appropriate' 'feminine' areas of study. Girls themselves have internalised gender roles and tend to select subjects that are consistent with their nurturing and servicing roles while boys take on technical subjects (Gunawardena, 2004; Jayaweera, 2002). This process of subject selection makes them continue with conventional courses at higher secondary and university levels and excludes them from acquiring skills in technology. However there are changes. An ongoing study by CENWOR[8] shows that parental attitudes to girls' study of technology are changing but that more awareness is required among parents and girls on the importance of acquiring and using new skills.

Due to the low representation of women among computer professionals women currently make up only a very small percentage of managerial, maintenance and design personnel in networks, operating systems, or software development despite the increasing demand for professionals in the ICT sector. Men dominate at professional levels and in decision-making positions[9] making employment patterns highly skewed.

Manpower projections show the potential for employment in the ICT sector. The expected growth of the sector will require approximately 20,000 ICT professionals and a host of other workers by the year 2010. However it is unlikely that the requirement for professionals will be met at current enrolment rates. Women's representation in IT education, especially in higher levels of the profession is also not likely to improve dramatically for some time given all the constraints to their participation. The human resource development component of the e-Sri Lanka Road Map unfortunately does not recognise the role of women to "drive" its implementation. The other government agencies such as the Ministry of Women's Affairs also do not have any special island-wide programmes to enhance the capacities of women in this field.

Women's Use of ICTs

ICTs could provide space for women to share knowledge and a space to overcome isolation, marginalisation and improve their well being. Many of the women who use new ICTs feel empowered. The women's movement has been able to become more visible and women have been able to create spaces for themselves using new ITCs.

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[8] ICT and Gender in Sri Lanka.

[9] For instance Wanasundera (2002) found that out of the 462 IT professionals in 138 organisations women accounted for less than a quarter- 28.6% in the public sector, 21.9% in the private sector user organisations and even lower in IT supplier organisations at 17.9%. In technical areas too a similar pattern is seen. In a premier university for modern technologies women were 19% of engineers and technical staff. Women have not reached the highest decision making levels in both the private and public sectors. Among the 11 top managerial posts in the Information Communication and Technology Agency entrusted with the task of implementing the e-Sri Lanka programme there was only one woman. The gender gap in the Sri Lanka Telecommunications Regulatory Authority is also wide. The majority of women who use IT in the workplace are at the lower end of skill levels in low ranking positions. Women who predominated as secretaries and typists in the pre-automation era find themselves upgraded as data entry operators in the computer age after acquiring the ability use computer software packages.

Unlike older women young women now have a greater opportunity to use new ICTs. The introduction of computer education in the school curriculum is expected to increase computer literacy and usage skills among women in the younger age groups and give them the ability to enter the world of work on a more equal footing with men and use these technologies more creatively. However, as large numbers do not have access to education and training to use digital technologies programmes and projects are being developed to reach these un-connected communities to provide them the opportunity to use ICT. However, these programmes and projects are mainly technology oriented.

Digital technology, especially the Internet is a place where women can share knowledge and contribute to developing virtual communities. Beijing demonstrated the power of the Internet to mobilise women across the globe. Sri Lankan women too were a part of the process and this process gave rise to an appreciation of the possibilities of the Internet. However, women's groups have not taken up the challenge in a concerted way to introduce the technology to women.

Consequently the diffusion of ICTs is taking the path of physical infrastructure development to provide access to digital technologies and training is predominantly technology centred. All the formal education and training institutes focus on the ways of using the technology. The "social" competencies required in the use of the Internet are rarely addressed.
In the area of infrastructure development outreach has improved with mobile telephony growing dramatically in recent years. The National Telecommunications Policy has an explicit universal access policy and obligates licensed operators to contribute to universal access development. Under the current e-Sri Lanka initiative a modern information and communication backbone is to be installed (Regional Telecom Networks) and the licenses for RTNs are to be awarded towards the end of 2005.

ICT service delivery is provided by tele-centres in rural areas to be set up by the Telecommunications Authority with Internet and email and telephone facilities to rural sub-post offices. . The telecommunications policy of 2002 "encourages and supports the establishment of Multi-Purpose Community Telecentres in rural areas of the country, as an initial means of providing universal access to information and communication services in these areas" (ibid). It recognises the need to be *mindful of gender*, along with ethnic, geographical divisions in setting up of Multi-Purpose Community Telecentres.

The major thrust of the Information and Communication Technology Agency (ICTA)[10] to extend connectivity and access to rural areas is through a network of centres- *Vishva Gnana Kendra* (VGK), e-Libraries-*Nana Salas* and Distance & e-Learning Centres (DEL) four of which are to set up in the country. Six of the 100 VGKs to be set up in rural and semi-rural areas to promote community access are functioning and of the 500 e-libraries a few have been set up.

[10] The apex government agency for implementation of the e-Sri Lanka programme

Several NGOs too have programmes to extend ICT to rural areas. One NGO, Sarvodaya that had set up Multipurpose Tele Centres in its village centres has now initiated the virtual village-*Vishwa Gammana* to integrate ICT with the traditions and development of the rural community and to identify socio-anthropological issues in relation to the adoption of ICT in a rural context.

The *Vishwa Gnana Kendra* (VGK)[11] programme is the major focus of the e-Sri Lanka initiative to take IT to the periphery. The programme aims to meet the infrastructure requirements to "address the information and communication needs of rural areas and to provide different ICT based services to assist in poverty reduction, social and economic development, and peace building."

ICTA adopts a business model for establishing and operating the VGKs. Sole proprietors, joint ventures, community based organisations are eligible to bid for the VGK with or without the assistance of pre-selected supporting institutions. Selection is based on identified criteria for which points are allocated.[12] Development objectives are not focused on although bidders having development experience and community support score a maximum of 15 out of 100 points.

The establishment of VGKs was preceded by a survey to ascertain the information and communication needs of communities, communication patterns and the ability to pay for information and communication services. Both men and women were included in the survey. However gender issues had not been addressed. Consequently the model pays no attention to ensuring the full participation of women in the VGK programme either as operators or as users.

The VGK model is private sector or market oriented and lays emphasis on profits and achieving financial sustainability by providing mainly communication services to rural and semi rural communities. The focus on financial sustainability does have positive effects. However, the VGK should address issues of inequality – gender, social, economic and human resources. In its present form this model in fact may increase the digital divide although the aim of e-Sri Lanka is to " harness ICT as a lever for economic and social advancement by taking the dividends of ICT to every village, to every citizen…" The aim of the VGK should not only be to provide ICTs to communities but also and more importantly to build the capacity of women and men to articulate their information needs and empower them to access and use information. The model should have taken into account the lack of a culture of information in the communities and the inequalities in the community paying special attention to gender concerns. The lack of gender sensitivity is illustrated by the rationale for the location of one pilot project adjoining a garage on the premise that those who come to the garage for vehicle repairs would use the VGK. Those who patronise the garage are men.

[11] See annex for details of the VGK model

[12] These include the location of the centre, suitability of the building, the business plan, which carry a total of 65 points. Experience in development activities and support from the community has been allocated 20 points.

Sarvodaya is pilot testing a different model. Earlier it had established tele-centres at the district level with linkages to the information societies that had been established in 12,000 villages. The programme attempts to increase ICT outreach, but it has to depend on human interfaces for ' last mile delivery.' The *vishva gammana* project aims to develop and test a last-mile infrastructure model while taking social, cultural, gender, religious and economic factors into consideration in developing ICT-based services.

The virtual village includes a tele-hut using WiFi technology[13], five village access points (VAP)[14] and mobile access modes (MAM)[15]. Gender issues have been incorporated and the project team includes 'gender specialists' who will interact with the team members and the community. The project takes into account gender relations and has provision for conducting gender sensitization programmes, leadership training for women and their capacity building. The project recognises that the village is not a homogenous entity and proposes to research the response of diverse community groups to ICT, changes in attitudes and the impact on the community of ICT enabled economic and social transformation and make on course adjustments as required. Content is to be produced using local languages.

Although Sarvodaya initiated the project community participation has been obtained in developing it. Village elders, leaders of CBOs most of who are women and community institutions such as schools have been involved in the project since its inception to give community ownership to it.

Compared with the VGK model the virtual village project has a higher potential to improve women's capacities as it has incorporated gender concerns and other social dynamics into the project. The real test of this model would be to provide the space to women to mobilise and change cultural and social practices that disempower them. Non-formal education and learning assumes importance in this context. Women's organisations are the best equipped to provide this kind of non-formal learning. Content development is also envisaged, but in developing content the perspective that 'experts' provide information must not predominate if the capacity of the women and the community to create knowledge is to be enhanced. Seeing women (and the community) as creators of knowledge will depend on whether they are seen as consumers of information or creators of knowledge.

The government initiated VGK programme as well as the e-Library are envisioned as knowledge centres but there is no strong focus with the human aspect of capacity building for the use of information by the community. While there is no denying the importance of financial sustainability the real issue of sustainability rests not only on access but

[13] Tele-hut will be equipped with ICT equip and have networking facilities. A wireless network will be set up within the village from the tele-hut and five broadcasting nodes will be set up to cover five distant places in the villages. The tele-hut will be connected to the existing tele centre in the district.

[14] VAP are static IT points located at specific spots for agricultural information, multimedia technology, information for micro-entrepreneurs, educational information and promotion of religious activity.

[15] MAM will serve as mobile ACI service units, which will reach potential village customers such as entrepreneurs, farmers, community leaders.

also on the ability of individual women to demand the kind of information that is required for their empowerment. The ultimate aim is to improve the capacities of the people and to ensure that ICTs are not a separate entity to be 'planted' in a locality but tools to be integrated into all activities especially for the empowerment of the disempowered and the marginalised.

Conclusion

The education system has not been entirely successful in developing the capacities of women to participate in the ICT sector although there is no overt discrimination in the access of girls to technical education. Disadvantages brought about by the lack of quality education in the school system, subject selection even when educational choices are available, resource constraints and no specific gender focus have made fewer girls than boys to study technology and science. The concentration of women at the bottom of the hierarchy in the ICT sector is one of the outcomes of such education and training.

Policies, programmes and projects aimed at providing the benefits of new ICT to the people follow the dominant market driven model, which is not always in the best interests of women. But these technological developments are important and provide enormous possibilities for women and if women are not in the equation they will remain at the periphery of 'information' society. Government interventions are most important in providing access and connectivity, and enhancing the capabilities of the people to use new ICT. The current models that are being implemented by the government have no gender focus and women are in danger of being marginalised in the much vaunted 'knowledge based' society. Women and women's organisation too have not intervened sufficiently to ensure inclusive policies and programmes. The biggest obstacle that women face in appropriating the technology is the lack of understanding of the issues involved, how digital technologies can be used to create alternative means of communication and knowledge and how women's capacities to be creative can be enhanced through both formal and non-formal education.

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