Study of IT Programmes for Youth from Low Income families in Bangalore

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1. Context of the Study

The IT Policy of the Government of Karnataka emphasizes the role of IT education in improving the quality of performance of the IT sector in the state. In 1984, the Karnataka state government initiated action to form a Technical University. The intention was to bring together all engineering colleges in the state and thereby strengthen development of technical education. In April 1998 the Visveshwaraiah Technological University (VTU) was established to accomplish this. Today about 103 colleges, including four evening colleges, are affiliated to the VTU and are divided region-wise. About 59 colleges are under the Bangalore Region, 20 under Mysore, 14 under Belgaum and about 10 under Gulbarga. The university offers over 20 under-graduate courses and 39 post-graduate courses in the field of technical education. Besides the colleges affiliated to the VTU, several Universities also offer courses in technical education. In the last 15 years, the proliferation of private IT training institutes that provide training in technical skills also indicates the extent of interest in IT education.

Several development agencies and civil society organizations plan to provide educational support services to individuals - both faculty and students, and institutions to enhance IT education. The Board for Information Technology Education Standards (BITES) is a body that works to enhance education standards in Information Technology by disseminating information, accrediting educational institutions, and offering educational support services for updating IT skills, including certification courses and teacher training programmes. The Government plans to take Information Technology to school children in all parts of the state. This involves setting up of training centers and encouraging private companies to set up training centers in schools. American India Foundation's (AIF) digital equalizer programme is an example of the attempt to promote the proficient use of technology in under-resourced schools by improving the quality of education and institutionalizing the programme by actively engaging children in interactive, collaborative learning using technology and the internet. Mahithi, the government of Karnataka's IT policy, seeks to establish 225 training centres all over the state, primarily for the purpose of training unemployed educated youth in various IT skills.

IT jobs are generally assumed to be high paid and formal in nature. But the sector also requires a large number of people in low skilled jobs. It offers opportunities for professionals trained at smaller IT institutes. The proposed study would focus on 'low end' IT workers recruited after basic IT education.

IT-enabled services like call centres, medical transcription, back office work processing, data entry etc., are held to offer considerable and growing employment opportunities for both women and men, unlike the traditional manufacturing sector. In anticipation, a large number of IT training institutes have come up in recent years at several locations catering to students across the economic segments of the society, including recognized and formal institutions as well as informal, unregistered institutions run by a variety of persons – private entrepreneurs, NGOs, etc.

In the above context this study would look at the various institutions rendering trainings especially to the youth from the low income group and the job opportunities that is available for them.

2. Background and in the Context of Bangalore a Review of Literature

Bangalore City and the ICT Sector

Bangalore is the capital city of the south Indian state of Karnataka, is well known globally as the IT capital of India. In India, urban centres have emerged as spatial clusters for the IT industry of which Bangalore is the most important software hub. "Technology-intensive production tend to concentrate in spatially agglomerated clusters of firms, networked with each other, and with other support institutions like universities and research institutes, financial firms, etc"[i] Research studies say that the success that Bangalore has seen is a result of the role of government policies that have responded favourable to the global value chain and the low wage cost.[ii]

Since the 20th century, the urbanisation and industrialisation of Bangalore has been driven by the state. The princely state of Mysore gave Bangalore much impetus since some state owned factories were set up. Between 1950 and 1980, large public sector units and research laboratories were opened that specialised in electronics, aerospace, defence research, telephone equipment etc. In the late 1980s, multinational corporations began setting up location in Bangalore.[iii] The national IT policy in 1998 and supportive state government policies like tax holidays and emphasis on e-governance have been an incentive for IT export. However the penetration in rural areas has been limited.[iv]Dittrich sees six favourable conditions that enabled the rise of Bangalore as an IT hub.

"(1) the city's reputation as one of Asia's leading locations of education and research; today Bangalore has three universities, 14 engineering colleges, and a plethora of well-reputed research institutes devoted to aeronautics and space, science, health and so forth. There are also various industrial-training institutes, including the Indian Institute of Science, the Indian Institute of Management, and the Indian Institute of Information Technology;

(2) the large number of large-scale and knowledge-based public sector industries and the numerous small-scale workshops which service them;

(3) the availability of an apparently inexhaustibly large labour pool of highly skilled, English-speaking and relatively inexpensive young urban professionals;

(4) investor-friendly government policies;

(5) a more stable and liberal socio-political environment with lower real estate prices and cost of living than in Mumbai and Delhi; and

(6) the salubrious climate of the so-called Garden City"[v]

Dittrich also describes the Bangalore's ICT industry. "Bangalore's ICT-industry is divided into three main clusters : the International Tech Park, one of India's first world-class plug-and-play ICT parks located in the suburb of Whitefields; Electronics City in the southern outskirts which houses more than one hundred ICT-companies, including such leaders as Hewlett-Packard, Motorola and Siemens (Wipro and Infosys are also headquartered there); and the Software Technology Park of India, a government agency that provides high speed connectivity to technology parks, freedom for 100% foreign equity investment and tax incentives. Besides these main clusters many of the small and medium-scale ICT-firms have settled in

isolated office blocks in high income neighbourhoods."[vi]

production based on mass markets to one based on fragmented and flexible markets. The earlier era typically characterised as

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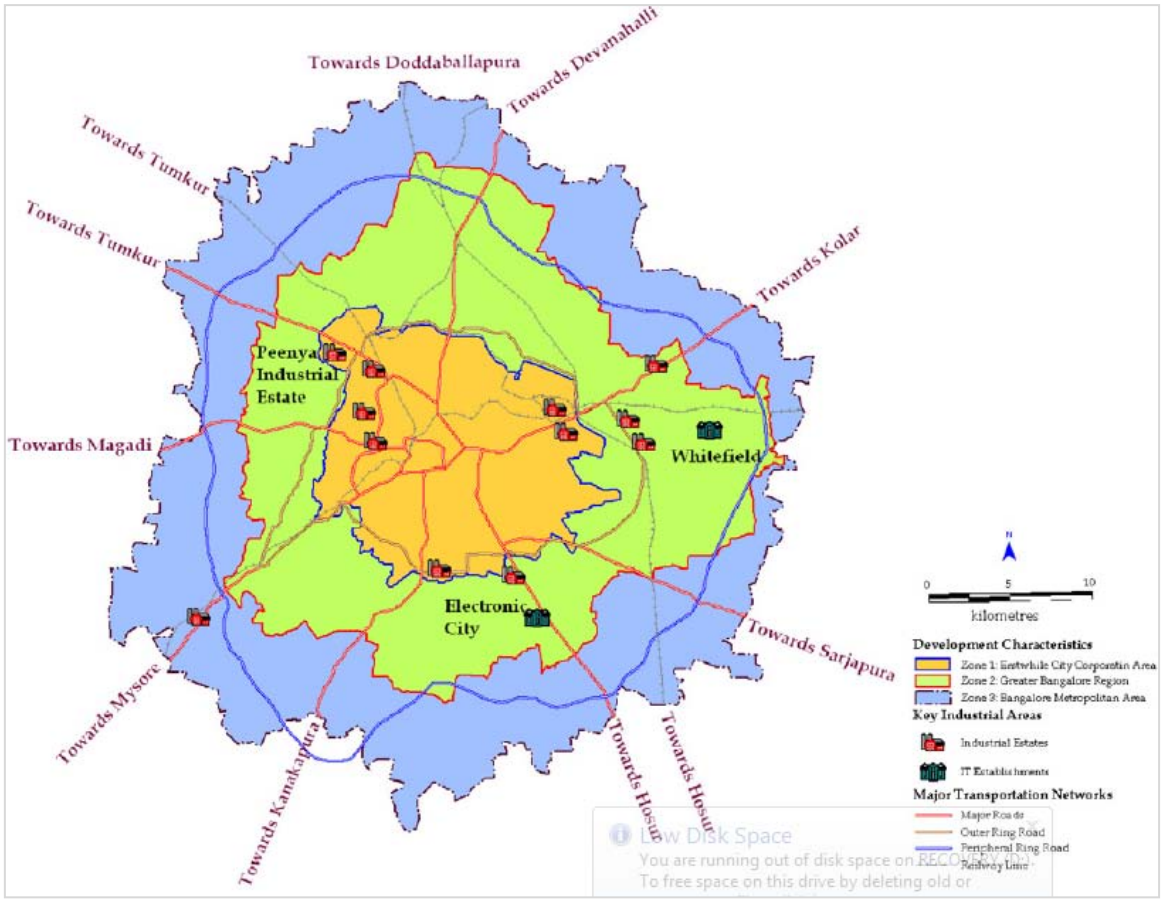


ICT and the garment industry comprise two important export led industries in Bangalore. "The large public sector industries and the private textile and garment production units still have an important impact on the city's economy. Together with all their subcontracting units these two pillars of the formal economy are employing approximately 250,000 people."[viii]

The changing global scenario has led to changes in the nature of production. "Accompanying this process of globalisation has been changes in the characteristics of dominant global output markets. To begin with, it is observed that there is a shift from Fordist, emphasised mass production technologies, scale economies, detailed technical division of labour, divorce of conception from execution leading to monotonous, routinised work for a majority of the work force and a hierarchical organisational structure." [ix] Teganas and Kaul say that the 'software and services export segment (including ITES/BPO sector) has emerged as a significant export earner for the country contributing 34 per cent of total services exports and accounts to 64 per cent of the total information technology (IT) industry. "The ITES/BPO sector is the fastest growing segment within the software services sector. Within five years since its emergence

in 1999-2000, its size grew to almost 10 times from US $ 565 million in 1999-2000 to US $ 5.2 billion in 2004-05. Within ITES services lines, customer care and finance have been the fastest growing segments. In terms of outsourcing of IT services, proficiency in the English language provides a comparative advantage to India's exports vis-a-vis those of competitors such as China and Mexico. At present, India's BPO has captured 44 per cent of total worldwide outsourcing. Presently, India's software and services exports are oriented towards western countries, primarily the US. Around 62.7 per cent of India's IT services export revenues are realised from the north American market alone.' [x]

The annual report of the Department of Industries and Commerce of the Government of Karnataka shows the contribution of the ICT sector to the state.

[xi]

EXPORT PERFORMANCE OF KARNATAKA STATE									
					(Value Rs.in Crores)				2008-2009
Sl.no	Commodity	2001-02	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-08	(Apr - Dec)
1	**Electronics & Computer Software***	11533.06	15899.77	20522.28	31488.73	42180.81	56478.16	79517.50	32739.41
2	**Readymade Garments***	2820.00	4000.00	4038.00	4500.00	4980.00	6773.00	4125.00	3918.75
3	Petroleum & Petroleum products	NA	1915.00	4472.15	6186.00	11912.00	11602.25	11232.00	10605.15
4	Engineering	1048.07	1650.11	1899.49	3021.35	3052.00	5461.00	8301.00	3996.44
5	Iron Ore and Minerals (incl granites)	691.56	1524.10	2093.43	4480.00	5920.10	8791.32	10197.00	4001.12
6	Silk Products	672.24	746.09	967.99	898.80	1050.68	1273.94	912.12	678.15
7	Coffee Products	881.42	730.65	757.57	705.65	1103.94	1476.65	1307.60	1176.18
8	Basic Chemicals, Pharamaceuticals and Cosmetics	320.24	413.33	649.22	746.03	1018.63	1839.05	2069.76	1841.30
9	Agriculture and Processed Food Products	349.51	366.99	361.25	362.41	384.11	398.36	415.51	444.16
10	Gem and Jewellery	281.05	295.85	2631.00	4644.00	5725.00	7799.11	9749.00	6133.26
11	Cashew and Cashew Kernals	163.54	279.83	265.72	518.35	521.81	552.78	527.05	435.70
12	Handicrafts	48.59	260.58	324.28	330.15	360.01	389.01	428.36	288.36
13	Leather Products	237.64	221.58	276.51	186.75	214.59	218.05	201.28	156.37
14	Chemicals and Allied Products	201.22	215.36	338.62	705.52	732.00	745.12	399.28	241.00
15	Marine Products	85.76	96.91	81.58	91.65	98.22	136.13	153.46	196.29
16	Plastic Goods	83.07	96.84	749.07	2779.1	1850.70	552.15	215.25	193.68
17	Spices	69.12	91.65	99.58	109.54	169.98	219.72	245.15	262.91
18	Wool & Woollen Products	44.46	76.80	89.25	109.40	124.86	140.03	147.59	86.75
19	Miscellaneous and Others	615.03	1016.55	1053.25	775.13	880.16	2529.76	2559.52	1508.36
	Total	**20145.58**	**29897.99**	**41670.24**	**62638.56**	**82279.60**	**107375.59**	**132703.43**	**68903.34**
	Country's Exports	**245517.97**	**299290**	**349581.9**	**430888.00**	**546466.00**	**709641.87**	**817872.00**	
	State's Share in Country's Exports	**8.21%**	**9.99%**	**11.92%**	**14.54%**	**15.06%**	**15.13%**	**16.23%**	

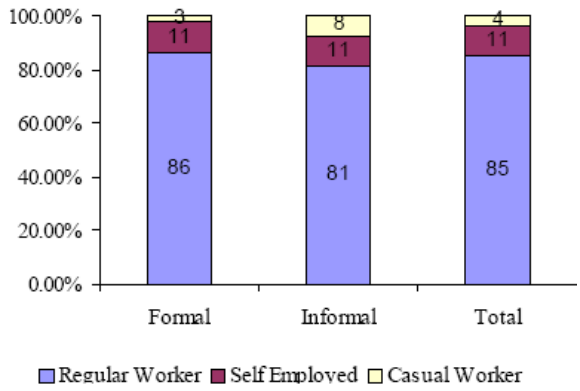
The low end IT sector does not require much formal education, only a familiarity with certain software programmes and proficiency in English. There is the belief that ICT may enable developing countries to 'leapfrog' and catch up with developed countries with increase in employment. However, this does not belie the digital divides that already exist. "The point is that "the digital divide" is really at least four divides, all closely related. The first is internal, between the digitally empowered rich and the poor. This gap exists in both the North as well as the South, although the baselines differ. The second linguistic-cultural gap is largely between English and other languages, or more generally, between "Anglo-Saxon culture" and other world cultures. The third is the gap exacerbated by disparities in access to information technology between rich and poor nations. Finally, there is the emergent intra-national phenomenon of the "digerati", an affluent elite characterized by skills appropriate to information-based industries and technologies, by growing affluence and influence unrelated to the traditional sources of elite status, and by obsessive focus, especially among young people, on cutting edge technologies, disregard for convention and authority, and indifference to the values

of traditional hierarchies."[xii] What is of concern is also the nature of work and employment conditions that prevail in the low end IT sector. "The discussion on the diffusion of ICTs in such countries, has however, by and large ignore the contractual position, wages, career paths and working conditions including employee health and safety of new technology workers. Given the amount of interest in these issues within the advanced capitalist economies, this is a serious omission."[xiii]

Employment

There are differing views on the role of the ICT sector in the Indian economy. One view suggests that it is dominated by the organised sector, requiring at least a graduate qualification. "It is a predominantly urban dominated sector; however, in rural areas the telecommunication segment of ICT does provide employment. In this sector more than 80 per cent are employed in formal segment and completely dominated by regular workers. About one-half of these workers are involved in public and corporate sector. Education plays an important role in the ICT sector employment, where graduates & above constitute more than 40 percent. In the new emerging sector of IT & ITES has also more than 67 per cent workforce are graduates & above. The wage level of ICT workers is higher than non-ICT workers." [xiv]

Employment Status in ICT Worker [xv]



A review paper also makes the same case. "IT use is beneficial for workers and employees in terms of much higher employment demand, better wages/ salaries and reduced work 'hours', thereby implying enhanced job-quality."[xvi]

However, the IT sector provides a very small percentage of employment in the country. The nature of exports is also worth looking at. "Exports of software services assume two forms. One, firms send personnel to the client's premises to develop software according to their needs. Termed as *body shopping* or onsite work, such services are paid on the basis of quantum of labour required/used. Or else, projects can be on a turnkey basis, wherein firms are responsible for delivering an entire software package and are paid on a project basis. It is found that clients mostly outsource low end, labour-intensive tasks to Indian firms, retaining more skill intensive high-end activities like design and product development in-house."[xvii]

Mahadevia makes a scathing critique of the hype around the IT sector. While admitting that the IT sector has had a substantial indirect impact, with the construction industry being an important beneficiary, she maintains that the manufacturing sector has been left in the shadow. "Bangalore having high proportion of manufacturing sector

workers indicates that there has been a hype created with regards to employment in IT sector in the city when the city's employment is still dominated by manufacturing sector. This is so much for Bangalore being an IT city! Absurdly, the policy focus and the resource allocations in the city have shifted to the IT sector, as various documents and newspaper reports reveal. The individuals in the IT industry have been making great efforts to modulate city development policies according to their needs inspite of not so large presence of this economic activity in the city."[xviii]

Elaborating on the composition of industry she says, "Bangalore, besides being a manufacturing or secondary sector city, also has 22.26 per cent population engaged in wholesale and retail trade, a small decline from 23.78 per cent in 1987-88. Just 4.34 per cent males were employed in computer and other high end services in Bangalore in 1999-00. In 1993-94, this figure was 4.78 per cent and in 1987-88 it was 9.28 per cent. Probably, the sample has not been able to cover the IT and ITES (IT enabled services) sector well. As per a recent survey by Carol Upadhyay and A. R. Vasavi, between 200,000 and 250,000 were estimated to be directly employed in the IT and the ITES (IT enabled services) in Bangalore city. That meant that between 6.0 per cent and 7.5 per cent of the total workers in the city were directly employed in the IT and ITES sector. Even then, other economic activities provide employment in the city, more than the IT sector. But, the recent spate of constructions and increased spending in the economy is attributed to the IT sector. There is increase in regular employment in Bangalore in 1999-00 as compared to previous two NSS rounds, and at the same time, there is also increase in manual labour type of jobs (where proportion has increased from 41.08 per cent in 1993-94 to 43.58 per cent in 1999-00) and partly in skilled managerial and technical jobs (where proportion has increased from 23.03 per cent to 24.26 per cent in the same period. Thus, part of the new regular employment created is also manual labour type, and this would be in the construction activities. It is also likely that there have been low skilled jobs generated in other service sectors, but where it is more as salaried jobs than daily wage jobs. Since, both managerial and technical jobs and manual labour jobs have increased in Bangalore city, inequalities would have increased in the city with high wages in one sector of the economy which is tied to the IT and low wages and unskilled employment in other large sector of the city's economy." [xix]

The low end ICT sector has also come in for critique. Noronha and D'Cruz summarise recent research that has described call centres as " 'electronic sweatshops' and 'assembly lines in the head', with jobs being characterised as dead-end, with low complexity, low control, repetition and routineness"[xx] Locating these developments in a larger context they see changing relationships between employer and employee as marginalising the role of unions. They go on to say that "simplistic policies focus on exclusivist strategies, while a more sophisticated approach embraces both inclusivist human resources management techniques as well as exclusivist methods. Exclusivist strategies include firms casualising and outsourcing staff, the outright refusal to negotiate with unions, while inclusivist strategies involve the use of employee involvement schemes and human resource initiatives. Nonetheless, each of these actions has a real and symbolic dimension."[xxi]

Gender in ICT

As mentioned earlier, ICT within the development discourse is seen to be able to

bridge digital divides. This belief targets women, where ICT is seen to provide opportunities for empowerment in developing countries. [xxii] This is confirmed by studies in India which cite women specifically as beneficiaries of the sector. "The recently established IT taskforce to the government which addresses the future of IT industry including software production expects a net employment creation by 2.2 million employees by the year 2008 (NASSCOM 2000). Further, this sector, especially IT-enabled services like call centres, medical transcription, back office work processing, etc., are held to offer considerable employment avenues for women unlike the traditional manufacturing sector. Elsewhere, especially in the South East Asian newly industrialising economies (NICs), introduction of ICT sectors like information processing and hardware assembly led to the entry of large numbers of women into the labour force, lending credibility to such initiatives to enhance women's participation in the workforce. Given the potential role envisaged for ICTs in both employment generation and reduction in labour market segmentation, it is worthwhile to understand the various approaches and examine empirical support to them as a prelude to our enquiry."[xxiii]

Women as workers remain mainly within the informal economy. "There is a *significant overlap* between being a woman, working in the informal economy and being poor. Available evidence suggests that, in most regions, women are more likely than men to work in the informal economy; women in poor households are more likely to work in the informal economy than men in poor households or women in non-poor households; and the average wages or earnings of women in the informal economy are lower than those of men in the informal economy. But, again, there is no simple relationship between being a woman, working in the informal economy and being poor. It depends on what women do and under what conditions. One of the important reasons why women in the informal economy are likely to be poorer than men is because they are less likely to be micro-entrepreneurs who hire others (who often enjoy relatively high earnings) and more likely to be home workers (who typically earn extremely low piece rates). Also, even within specific categories of informal employment, women are likely to earn less than men."[xxiv]

Exploring the participation of women in the ICT sector, Swasti Mitter says, "The opportunities for women, in the emerging global digital economy, come not so much from the high value end of the information processing work, such as software programming or system analysis, as from the relatively low value added operations that include a wide range of activities from customer services in call centers to secretarial work for medical transcriptions. These are categorized as Information Technology Enabled Services (ITES): jobs related to these services require proficiency in written and spoken English, familiarity with the culture of the client countries as well as social skills. Although precious, these skills do not need training of elite and expensive institutions; hence can be acquired by those, who, because of their class or gender, do not have access to elite technical institutions. My research in India last month gives me reasons to be optimistic. In call centers in India, the proportion of women in total employment could be anywhere between 38 to 68 percent."[xxv]

3. Basic Research Questions

3.1 Statement of the Problem:

A large number of IT training institutes have come up in recent years at several locations catering to students across the economic segments of the society in response to the perceived potential of the sector and the high and expanding demand for persons with basic knowledge of IT skills. In addition, IT education is increasingly being introduced into schools.

Given the potential role envisaged for ICTs in both employment generation and contribution to economic growth, it is important to understand the nature of new economic opportunities that may be opening up especially for the poorer sections of society, and examine the empirical evidence on the role being played by different kinds of training / educational facilities.

3.2 Objectives of the Study

The proposed study would attempt to see to what extent a new pathway to employment has been created that is free of caste, class or gender bias and is primarily responsive to training and skill development opportunities.

The key questions to which answers will be sought include:

1. Nature of training – duration, nature of institute, cost
2. The role of the training institution in finding work
3. Time spent in job search; process; factors helping/ impeding
4. Details of the present job: Nature of contractual arrangements – access to benefits and paid leave; level of earnings; length of contract
5. Conditions of work – timings, safety and security issues, occupational health concerns, any gender specific concerns
6. Skills acquired on the job
7. Perceptions regarding future opportunities in IT sector

3.3 Methodology, Data and Study Locations

The objective of this study has been fulfilled through primary source of information and supplemented by secondary information, wherever required. The secondary sources include published and unpublished data and literature on the subject. The primary data for this study has been collected through a survey by canvassing the questionnaire and in-depth interviews of key informants.

The study was carried out in Malleswaram of Bangalore Urban district, selected for the high concentration of computer training institutions here. Because of the proximity to the central areas of the city and well connected transport services, there are a large number of other educational institutions (schools and colleges) in the vicinity.

It was proposed to sample fifty students (both girls and boys) who had completed the training with reasonable proficiency and are employed in the computer related jobs, and to canvass a short questionnaire along with a few detailed interviews.

Interviews with these students will seek to understand

- Where was the training conducted, duration, institute/ school, cost to student (if any)

- In what way is the IT training being used- not being used, used at home/ occasionally, used at work

If at work:

- Did the school/ institute help in finding work – yes/no
- If no, what was the job search process, how much time, factors helping/ impeding
- Present work: nature of work, nature of contractual arrangements, access to benefits (eg PF), paid leave, earnings range, length of contract
- Conditions of work – timings, safety/ security, any occupational health or gender specific concerns
- Skills acquired on the job
- Perceptions: what are future opportunities like? Good/bad/don't know

What are other work alternatives?

What are perceived advantages or drawbacks of the IT job as compared to other sectors?

Limitations of the Study:

While it was possible to map the training institutes and obtain some basic information about them, it proved extremely difficult to trace students who had completed the training and started work. The private institutes did not keep any records on the background of the students; hence it was difficult to trace their socio-economic status. The government and NGOs run computer courses were exclusively for the weaker sections of the society. As the primary intention of the study was to understand the situation of youth from low income families, the latter were approached and an attempt made to get the addresses of those students who had completed the course and were now working.

Even though many of the students were from in and around Bangalore it proved to be difficult to trace the addresses specified in their admission forms. Often only the door/ house number had been given along with the locality, but without specifying the street or lane or giving any suitable land mark to locate their households in the slums.

After attempting unsuccessfully to trace trainees in this manner, it was decided to focus on former trainees of one particular NGO, which has a constant interaction with the students who had passed out of their centre. This organization was able to organize a meeting with eighteen boys and girls who had completed their training and had started working. Thus instead of the proposed sample of fifty youth, it was possible within the time available to interview eighteen persons.

4. Main Findings of the Study

4.1 Type of training institutions rendering computer courses that are accessed by youth of low income group in Bangalore and the kind of jobs they are able to access.

The key findings of the study highlight the kinds of training centres engaged in imparting various software and hardware skills, the duration of training and the cost involved. The study identified the type of institutes chosen by the youth of the low income group to access the computer skills, time spent in acquiring the necessary skills and how they get jobs and their perception as ICT workers.

A mapping of computer training institutes in Malleswaram and surrounding areas clearly showed that majority of the institutes were run by private entrepreneurs who were registered under one of the acts of the Government of Karnataka - Companies Act, Shops and Commercial Establishments, Societies Act or as training centre. Only a few of the centres were under the government or government aided organizations and a few were run by NGOs. Thus training centres can be classified into three categories – private, government and NGOs. The table below gives the number of training institutions surveyed.

Type of Institutions

Sl. No.	Types	Numbers
1	Government	2
2	Private	14
3	NGOs	8
	Total	**24**

Most of the private institutions got established between the year 1995 and 2000, when the demand from the IT and ITES sector for persons with computer skills was on the rise. Some of the private training centres opened branches in other parts of the city. The private institutes can also be classified into small, medium and large based on the number of computers installed, as they varied from 3-25 computers within one institute.

In small institutes it is mostly the owner himself who teaches the students. In medium and large institutes it was seen that very often old students are offered a job as instructor, at a relatively low salary, and the quality of training given was determined by the abilities of the owner and his own teaching skills. It was also noticed that most of the private institutes do not upgrade their systems and there is usage of pirated versions of programmes; this further limits the skill acquired by the students.

The two government organizations – Canara Bank Institute of Information Technology (CBIIT) & KEONICS had more than 50 computers with qualified instructors. These institutions were exclusively catering to the needs of the youth from socio-economically weaker sections of the society. They give out advertisements in the leading newspaper announcing the commencement of the free course and receive a large number of applications. They scrutinize the applications and take around 60-75 students per batch for a course, KEONICS offer scholarship to SC and ST students as an encouragement to complete the course.

Eight NGOs were identified that had been involved in giving computer training to the youth from their community outreach programme areas (urban slums and nearby rural areas). Four of them had discontinued the training recently due to lack of funds and non-continuation of computer projects.

The various courses conducted by the private, government and NGOs are specified in the table below. It also specifies the fees taken by the private institutes for different courses and the duration of the training for each course.

Course, Duration and the Fee Structure

Sl. No.	Courses	Duration	Fees (in rupees)
1	M S Office	25 hrs to 3 months	200 - 2000
2	DTP	1.5 months	2000
3	Statistical Analysis System	60 hrs	12000
4	Advanced Excel	20 hrs	3000
5	M.Sc (hardware)	3 - 4 months	18000 - 20000
6	Tally	3 - 4 months	2200 - 8400
7	Office Management	2 - 4 months	2800 - 3600
8	Diploma in Advanced Accountancy	5 months	5800
9	Hardware	2 - 6 months	4500 - 17500
10	Diploma in computer application	6 months	11 600

The demand for training in Hardware is greater from boys than from girls. The reason for this, as given by the institutions, was:

- Boys can reach out to the clients quickly, as many of them own a vehicle
- Clients are spread out over a wide area and boys have greater mobility
- Boys are more techno-savvy than girls, that is they are more keen on doing repair works

Private Institutions being profit oriented do not assess needs of the students and are not interested to know their background. Some of these institutions claimed that they gave a discount or allowed students to pay on an installment basis, for those students who cannot afford to pay the fee as a lump sum. They have started separate spoken English classes for a fee for those who want to learn but personality development classes were not available.

Free courses given by Canara Bank Institute of Information Technology, Keonics and NGOs cover the following skills.

Sl. No.	Organization	Skills	Duration
1	CBIIT	DTP, Fundamentals, Tally, Excel, Hardware (separate course)	3 months
2	Unnati	Computer Basic	3 months
3	APSA	Computer basics, MS paint & notepad, MS office, page maker, Photoshop, Corel draw, In design, basics of internet, web design. Hardware - components of computers, network basics, trouble shooting, installing software, assembling, CD writing, using scanner, printers, movie, camera, analog to digital conversion.	10 months
4	Keonics	Computer basics, DTP, tally, hardware etc	1 year
5	Life vision	MS word, power point, DTP, corel draw, page maker, Photoshop and the only center where kannada package (Nudi) is taught	2 months

Government and NGO run institutions render free training only to the youth of socio-economically backward sections of the society who have completed X standard; the course package is designed to meet the needs of the low profile jobs in the sector. These institutions were able to identify that not knowing English can be a factor preventing the youth from being able to get IT and ITES related jobs. In order to build self confidence and boost their personality these institutions have incorporated half a day session on spoken English and personality development / life skill development during the course work. Classes are held from morning 9.00 / 9.30 am to 5.00 /5.30 pm and post lunch session is exclusively dedicated for English and personality development.

These institutions are aware of the present needs of the IT industry. For example recently a greater demand for persons with web designing skills has been noted and in response a related training course has been started.

Accessing Jobs: Placement after completion of the course is usually not undertaken by the private institutions, whereas campus recruitments are organized by CBIIT, KEONICS and few NGOs. Those youth who were able to do well in interviews were offered jobs immediately; others had to wait and to search work on their own. Sometimes they are intimated about the vacancies by these organizations. Some of the NGOs found it difficult to place them in the IT related job but were able to place few of them in malls and other retail outlets due to their computer skills. Two of the NGOs had a placement officer, who is responsible for going around to different companies to negotiate for an opportunity for their students who will be passing out/ graduating out of the course.

Existing Gaps in the Institutions: The private institutions were still using the old software packages and many of them did not upgrade their systems. It was also brought to notice by the students that they use pirated versions, which do create problems while learning. Majority of the private institutes employ their old students for a meager payment to teach. Instructors in these institutes are found to be not well equipped with the latest needs in the industry. All these have an effect on the quality of the skill acquired by the students.

4.2 Profile of the Youth

Youth from the low income group were able to access computer training at the NGO run centres or the government centres. This was a better option as the private institutes charge a high fee and also give no guarantee of placement. Tables below gives the socio-economic profile of the students covered for the study.

Age	No. of Youth	
	Male	Female
18-20	2	5
21-23	8	2
24 & above	1	-
Total	**11**	**7**

Social Group	No. of Youth	
	Male	Female
BC	2	
OBC	2	3
SC	4	3
ST	1	1
Christian	2	-
Total	**11**	**7**

Education	No. of Youth	
	Male	Female
SSLC	3	2
II PUC	7	5
Graduation	1	-
Total	**11**	**7**

These youth formed the first generation of persons with computer skills in their communities. Majority of them had completed their secondary PUC (pre university) course, were in the age group of 21-23 years and belonged to scheduled caste. These youth completed their education in Kannada medium, which has been a drawback for getting jobs in the computer related field. They were able to learn spoken English for interacting in the workplaces, as it was incorporated in their course work. More number of girls were found to take up these courses than boys as the families pressurize the boys to supplement the family income and start working in preference to taking further training.

These youth were able to get into low end jobs in small IT companies engaged in journal and magazine publishing or DTP centres and cyber cafes. Medium and large scale IT and ITES sectors needed basic qualification as graduation and proficiency in English language, which hinders the entry of youth from the low income group. Table below tell us the type of jobs accessed by them and the income earned. The work experience of the youth covered for the study varied from four months to three years. The beginners start with a salary of Rs. 2500 to Rs.3000 depending on the type of job taken and they are assessed every six months for their quality of output, for not taking any leave and quickness in learning new skills. On assessing on the above parameters increments are decided which vary from Rs. 500 to Rs. 1000. This is an incentive to work hard and

avoid taking leave. There is low awareness of rights and entitlements. In most of these places they are not even given a formal contract letter of appointment especially in the DTP centres and cyber cafes.

Occupation and Income of the Youth

Occupation	No. of Youth		Monthly Income
	Male	Female	
Graphic designer	8	4	2500 -20000
Instructor -Photoshop	1	-	3000
System & network administrator	1	-	7500
Data entry operator	-	1	2000
Production Executive	1	-	11000
DTP operator	-	2	2000 -2500
Total	**11**	**7**	

Present need for graphic designers has opened up opportunity for the youth of low income group as it does not require the usage of English language. Some of the organizations were specifying that girls are more creative than boys and graphic designing is well suited for them and due to patience and soft nature helps them to do better jobs as data entry and DTP operators too. Stereo typing of girls even in IT and related jobs is clearly visible.

The youth compare their own incomes with what their parents are able to earn and feel that even after working for so many years their parents do not earn better. Additionally, IT jobs are seen as being more respectable socially and leading to their economic empowerment. Here is a table comparing the occupation and income earned by their parents and themselves.

Kumar aged 23 years belongs to SC community and is a drop out from the BCA course. He did the one year basic computer course at the NGO – APSA three years ago and was placed with a small IT company. Initially he earned Rs. 3000/-, which his peers in the community did not. He felt the need to enhance his skills and joined for an evening course in multimedia by paying Rs. 6000 in a private institute. This helped him to get a job as a graphic designer with a good IT company and he is able to earn Rs.20, 000/ per month with other benefits such as PF and ESI. He says that he would not have earned such a salary in his life time, if not for IT.

Occupation of Parents & Income

Occupation	No. of Persons	Parents Monthly Income(in Rs)	Monthly Income of Youth	No. of Youth
Agriculture	6	1500 - 2500	2500 - 20000	12
Carpenter	1	4500	3000	1
Auto driver	3	4000 - 6000	7500	1
Security	4	3000 - 4500	2000	1
Labourer	2	3500	11000	1
Tailor	2	2500	2000 - 2500	2
Total	**18**			**18**

Experience at the Workplace:

Initially the youth were afraid to work in IT companies as the atmosphere is completely different from what they have seen in other industries. They were easily identified by others as poor slum youth due to their behaviour, lack of English language (no fluency), no confidence in interacting with other colleagues who are from middle and upper classes. Very few of them were good to them and taught them in their work. One of the youth said that he was not able to with stand the discrimination faced and quit the job. Some of them were of the opinion that if they are able to do the task given their performance is appreciated and then there is no need to bother about what others say. It shows the extra effort that these youth have to put in to survive in a stiff competitive and intimidating atmosphere.

Regarding work timings they have to work for nine hours or more, sometimes when they work on project basis with deadlines. Those who are with companies are provided free tea, snacks and lunch, in case of long hours of work dinner is also provided. Those who are working for DTP centers do not get these benefits and have to work more than 12 hours. Holidays and leave are limited and linked to their performance and increments. Hence most of them see that they do not take any leave.

Being beginners in this sector they were not able to understand the impact of long hours of the monotonous work on their health, not able to assess the benefits that are being enjoyed by those working in medium and large scale IT industries.

Opinion of IT Jobs by the Family and Community

Family members and the community gave them high status and respect, most of the younger siblings have been motivated to study and complete graduation. Youth in the neighbourhood were keen in joining the computer course at APSA but many were not able to afford a year in doing the course, as their parents ask them to earn and support the family. Those youth who have completed X standard were working in malls and other retail outlets as sales assistants or security personnel. Their earnings were discussed by the peers and parents were very happy to see that at least one child from the family is in the IT sector. These youth have become role models in their community and home for motivating the younger ones to get educated.

This shows the impact of computer training on the community which is encouraging the present young generation not to drop out of school.

Changes within these Youth

Interaction with these youth made us to capture their perception towards life and society. They were able to distinguish the digital divide and had formed a group to help and support those needy youth to acquire skills. Some of the youth were of the opinion after accumulating some money they want to start their own business and employ poor youth. Work atmosphere has changed their way of dressing, interacting with other members and trying to maintain a standard to that of the middle class youth by owning mobiles and other necessities. Many of the youth want to continue their education in order to get better jobs in the industry. Aruna's case narrates the urge within the youth for acquiring advanced educational qualification in order to move up and build a career in a good IT company.

Aruna Jayapal aged 20 years belongs to ST community. Her family consists of father, who is a tailor; mother a domestic worker and an elder sister who works in a garment industry. Parents are illiterate; sister has studied upto X class. She had completed II PUC and joined APSA's (NGO) one year free computer training. By the end of the course she was given a placement with a small IT company, due to her efficiency in the work was offered a contract for 3 months with a starting salary of Rs. 3,500/-. On the job she was given training in English communication, call conferencing, E-mailing (formatting text). She worked for a year and was earning Rs. 6,000/ per month. She accumulated the money and quit the job to continue her studies. ..... Presently she is studying BCA (Bachelor of Computer Application) and taken up a part time job to support her education. She says IT and related sector pays good salary than the other sectors, hence there is a need to upgrade one's skill as the technology keeps changing on day to day basis. Her aim is to complete her degree and join Infosys. She also says the big companies take in persons with graduation and not with less educational qualification.

Impact of Recession

The study was able to capture the impact of recession, which had affected the IT sector adversely. During the survey one of the private institutes which was on the verge of closing down had offered us to take it over or to find persons who would be interested in running it. Many of the small institutes in the study area had closed down as there was no demand from the students to learn or upgrade their computer skills. It was also observed that freshers were not getting jobs and job loss in the sector was on the rise.

At CBIIT, which is engaged in rendering computer training to the youth of the low income group, the Director was of the opinion that the students who were prepared to take up data entry work did not have demand and related it to the impact of recession. But he sensed demand for designing and of late they have started web-designing course.

The placement officers at APD and APSA were of the opinion that now salary offered has come down to Rs. 2,500/- earlier they were able to place the youth at a starting salary of Rs. 3000/- to Rs. 3,500/-. Work timings have also been changed, now long

hours of work for the same payment, earlier if they put extra time overtime was paid.

5. Implication of Findings and Policy Choices

- The creation of some opportunity for the youth from the low income group to access the computers has in a way empowered them to learn a skill that was not earlier in their reach. But limited seats at the existing free training centres run by the government and NGOs means that only a few persons are able to benefit from this opportunity.
- For the boys and girls of the low income group, it was a new technology that they were accessing, which completely differed from the work that older members of the community had been engaged with. Learning a new skill has empowered them to get a job that their peers and others in the community were not qualified to get.
- Though the training provided equal opportunity for both boys and girls such jobs, it was seen that more girls were absorbed in work requiring software skills and they are entering into stereotypical jobs such as data entry operators, DTP operators etc where opportunities for vertical mobility are limited. Enhancing their skills further requires money and time.
- Graphic designing is somewhat better paid than jobs at DTP centres or cyber cafes and has provided girls who have been encouraged to learn this, an opportunity to build up a better career. More boys are seen in work requiring knowledge of hardware

Policy Choices:

The study throws light on some areas to be strengthened in order to help the unemployed youth from low income group to seek better job opportunities by accessing and enhancing the computer skills.

- The opportunity to access basic computer knowledge and skills to be strengthened at the school level itself.
- Identifying the localities where low income group is concentrated and providing training centres here would help those aspiring youth to learn the skill and enable them to access IT and related jobs.
- To provide opportunity and conducive environment to work at the low end jobs in medium and large IT industries.
- Support to establish small kiosks in their communities that would help to access relevant information

6. Postscript: Suggestions to ISST

a. The study confirms that there is inadequate access to internet based information through telecentres located within slum/ low income communities in the city. At the same time, access alone is not the issue, rather it is the ability to use the information available, and to be able through a range of supportive activities to use computer learning as a springboard for change. ISST can consider developing a forum or an outreach programme which would have IT as a core activity but seen more in the guise of a catalyst than an end goal.

b. At the end of project workshop, Mr Shankar from the Centre for E-Governance, Govt of Karnataka, said that a government project that had been

started in rural areas - Yuva.com - did not take off and the government is now thinking of putting those computers in government schools. A study of this project could yield useful insights on what additional features are needed to generate activity around computer based centres. Other participants pointed out that similar projects in Kerala had been quite successful and there may be something to learn from that experience as well.

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Annexure I

Selected Case Studies

Case 1: Manju aged 20 years belongs to Adi dravida (SC) community lives in Muneshwara Block of Malleswaram, where most of the Tamil speaking SC people live. Her parents hail from Villupuram district of Tamil Nadu and have settled in Bangalore. The family consists of parents, three sisters and a brother. Father owns a road roller and is been hired out to run the family. She did her B.Com in Seshadripuram Evening College. When she was studying for I B.Com got a job at Page Point Services Pvt Ltd, as had completed a computer course in basics – M. S. Office and Tally 7.2. She came to know about the job through a friend and approached the Manager, who put her on a week's training and offered her the job with a salary of Rs. 3,500/-. It was a call centre and the work timings 8 am to 5 pm. Before this she got a job offer from IBM's call centre but have to work in the night shift, which her father did not agree.

She saw an advertisement in Bangalore Mirror, Times of India and Dina Thandhi (Newspaper) for Data entry Operator and Coordinator at Desha Management and Consultant Pvt Bank. She was offered the job in the fraud control unit – where the Executives would pickup applications for loans and she has to verify their residential and workplace data sent to her and format it on to MS Excel. She left this job due to the share market closure and banks not giving any loans. The number of applications to be verified fell from 50 to 10 and then nil. As her V semester exams were approaching and no work hence had to leave the job. Though no formal contract given, PF and ESI were the benefits apart from the salary. She was offered Rs. 4,500/- initially and by the end she was earning Rs. 6,500/-, they are entitled for a day's leave in a month. If one doesn't take it will be paid Rs. 200/- and was given an increment of Rs. 1000/- for every six months if they are on time for duty and without taking any leave as well as on the quality of reports produced. She did not experience any caste based discrimination and had a good work environment.

She joined a type writing course in order to develop her speed of typing by paying a monthly fee of Rs. 75/- and an advance fee of Rs. 175/-. It was an eight month course and developed a speed of 40 words per minute. Her perception about IT job is that one can earn up to Rs. 30,000/- but not much scope, yet she likes the call centre job, which people do not give due status. She says that she had worked in a domestic call centre which was a day time job and enjoyed it. One has to have good relationship with colleagues and seniors. Being girls one should know how to behave with others, not to laugh loudly and create a scene and attract others attention. She said her father often tells a Tamil proverb: "*Usi Edam Koodukadha Noolu Nzhuyamudhiyadhu*" – without needle giving the space the thread cannot enter into it. So girls have to be careful about their behavior with boys.

She heard from her friend who works at Infosys that she was not given increment for three years, when enquired about it with the HR person – his reply was to sleep with him. She was hurt and upset about his behavior and quit the job.

Presently she is working for Invensis Technology on a American Research Industry Project, where they receive scanned images of parts of screws and then it has to be copied on MS excel, correcting spelling, commas etc to be done. Daily have a target of 20 files and each file is about 14-20 pages. Working

hours is between 9 am and 6 pm, because of recession the timing is increased to 6.30 pm, so that people would quit their jobs but still people continued working with the altered timings.

She is the first girl in her colony to complete her graduation with 61 %, her grandmother supported her education by selling of the jewelry. She says most of the people in the colony have financial problems and are not able to pursue their education; they drop out after X standard or earlier and take up coolie or daily wage work. As mechanics they earn about Rs. 2000/- and in garment industry they get about Rs. 1,500/-, as construction worker Rs. 100/ per day and as domestic worker earn about Rs. 500/- month.

She says men have the knowledge of using internet but not girls in their colony. She is the only girl who had studied and people have great regard for her, being a girl now they want to know when she will be getting married. But her aim is to do MBA and to take up a bank job which is more secured compared to the IT jobs. She says IT sector will offer job till the age of 35 not like government jobs were you work till 58yrs and later get a pension. Of late the IT sector do not encourage persons aged more than 32 years is been heard from a friend who had been to attend an interview in the IT sector.

Case 2: Umesh Rao, aged 21 years belongs to marata community, completed II PUC and presently doing I BCA from Annamalai University – correspondence course. His family consists of parents and a younger sister who is studying in II PUC. His father is an auto driver. He did his one year computer course from APSA and they placed him with a small IT company MILICENT as a designer and is working since three months. He is been given a contract for two years and a salary of Rs. 4500/- no other benefit or social securities. He gets tea in the morning and evening, lunch and dinner free. It is a project based work and given Rs. 50/- project, depending on the skill one can earn. Working hours is 9 am to 6 pm, he completes his work quickly and later he works for another company in the evening hours to make some money. His aim is to take project from the company and do it on his own by employing 3-4 poor persons. He has already spoken to his project leader who had specified about outsourcing.

He says if one has to thrive in IT industry, have to be equipped with latest technologies and programmes, for which education is a must. His family supports him morally and encourages him to do what he wants.

When we met him after two months of interview, it was surprising to see that he has taken up the outsource work from the company and bought three old computers and hired three of his classmates from APSA to do the job. He has become a small entrepreneur with big dreams.

None from his neighbourhood has entered into IT sector, he is the first one and is been given respect. He has become the role model for other kids in the locality and driving force to get educated.

These cases talk about the urge to get educated and the recognition for education. IT sector which is totally a different world that they have seen from that of their parents and peers. Working in this sector has given them respect in their society / community. They have become examples for other children to put effort in education. The money earned compared to their peers is also a factor that is been recognized by the community, which has improved their and their families standard of living.

Annexure II

LIST COMPUTER TRAINING INSTITUTES AND ORGANISATIONS SURVEYED	
Government Sector	Canara Bank Institute of Information Technology (CBIIT) KEONICS
NGOs	Paraspara Trust
	Unnati
	Rayapuram Slum Development Society
	Association for Physically Disabled
	Association for Promoting Social Action
	Life Vision
	Life Style
	Lizzner
Private Sector	IIHT
	Computer Point
	Capital Computers
	CSEC
	NICT
	IP Net
	Infipro
	Adityaa
	ITBTNT Centre for Excellence
	Laqsh Job Skills Academy
	MES-Apex Institute
	Balaji Institute of Information Technology
	Hitech Institute of Advanced Technology
	ITSC

Annexure III

Questionnaires used to carry the survey of computer training institutions and youth working in IT from low income groups

INSTITUTE OF SOCIAL STUDIES TRUST
BANGALORE

Study of IT Sector Programmes for Youth from Low Income Families in Bangalore

INTERVIEW SCHEDULE		
Name of Organisation and Address		
Type of Organisation: □ Government □ Private □ NGO		
Purpose of Enterprise		
Location of the enterprise		
If, Malleswaram reasons for selecting this area?		
1.	How did the idea of starting a computer institute occur, and what was the process that led to its establishment?	
2.	Does government policy give any kind of stimulus or incentive to this work?	
3.	Registered Under	
4.	Year of Registration	
5.	No. of Branches	
6.	No. of Employees	
7.	Number of Computers	
8.	Batches	
9.	Timing	
10.	Total number of students (currently) sex-wise	□ Male □ Female
11.	No. of students completed the courses so far, (Males - Females)	□ Male □ Female

About the Institute			
12.	How do students get to know of your institute?		□ Advertisements □ Pamphlets □ Word of Mouth □ Others
13.	The type of courses offered with details		
	Type of Courses	***Duration (in hrs/months)***	***Fees***
	Software Courses		
	1.		
	2.		
	3.		
	4.		
	5.		
	Hardware Courses		
14.	Which courses are most in demand?		
15.	Are your courses certified?		
16.	What are the qualifications of employees (instructors, technicians etc.)		
17.	What are the different kinds of job profiles that people can take up after this course?		
18.	Do students take up more advanced courses after completion of one course?		
19.	Do you also help with students placements? Where have students been placed?		
20.	Do you find any specific demands from companies who come to recruit?		
21.	What need does the institute fill?		
22.	What are the gaps seen in the computer literacy sector?		
23.	How often do you update your syllabus? What is it based on? Could you provide some examples?		
24.	How has recession affected the choice of courses and placement? Has it affected the number of applicants for the courses?		
25.	Why would students prefer your institute over other institutes?		
26.	Are you aware of any programmes/ organizations in the city which give free computer training?		

Student	
27.	Where do students come from?
28.	How many students from Malleswaram? Details about background, income, educational qualifications?
29.	Mention the kinds of difficulties that students face in getting jobs? What will help a student in finding a job?
30.	Have any students become entrepreneurs/ started their own business using these computer skills?
31.	Are there students who are working from home after the completion of your course?
32.	Do you see any difference between the jobs that men and women take up? How long do they stay in the same job?
33.	Do you take students from the low income group? If yes, how many are there presently?
34.	Do you offer any incentives to students from low-income backgrounds?
35.	Do you keep in touch with students after the course is completed?

INSTITUTE OF SOCIAL STUDIES TRUST
BANGALORE

Study of IT Sector Programmes for Youth from Low Income Families in Bangalore

QUESTIONNAIRE FOR YOUTH IN IT SECTOR	
1.	**Profile**
	a. Name:
	b. Age:
	c. Sex:
	d. Religion & Caste:
	e. Mother Tongue:
	f. Native of
	g. Since how long have baan in Bangalore
	h. Present residential address
	i. Educational Qualification:
	j. Technical Qualification:

2. Household Details

Sl. No.	Relationship with the Respondent	Sex	Age	Educational Qualification	Marital Status	Occupation	Monthly Income

3.	**Details about the IT Skills Acquired**			
	Type of Course	Institution	Course Duration	Course Fee
	Hardware			
	a.			
	b.			
	c.			
	Software			
	a.			
	b.			
	c.			
	d.			
	e.			
	f.			

4.	**Information Regarding IT Related Work**	
	a. Are you presently employed	□ Yes □ No
	If no, reasons	
	If yes, how did you find the job?	□ Through the Training Institute □ Organization □ Placement Agencies □ Friends & Relatives □ Advertisements □ Any Other
	b. Time taken to get the job after completion of the course	
	c. Difficulties faced in getting the job	
	d. Nature of the job / Designation	□ Contract - Duration □ Permanent
	e. Salary and other benefits (specify)	□ Work Timings □ Safety and Security Issues □ Occupational health concerns (gender specific)

	f. Since how long have you been in this job?	
	g. Other skills acquired through the job?	
	h. Do you see future opportunities in the sector?	
	i. Did you change your job, if yes, reasons for changing?	
	j. If not working in IT related job after acquiring the skill, reasons for it?	
	k. Is anyone else in the family working in IT or IT related job (specify)	
	Impressions About IT/IT Related Jobs	
	a. Give your opinion about IT/IT related jobs	
	b. Family members' opinion about you working for IT/IT related sector	
	c. Community perception regarding your work	
	d. How many persons in your community are working in this sector?	
	e. Do you thins after acquiring a particular computer skill it is necessary to acquire other related skills and reasons for it?	
	f. Do you think more youngsters from the socio-economically backward communities have to access this sector for job?	□ Yes □ No
	If yes, why	
	g. What requirements have to be met for them to enter this sector?	
	If no, why	

Annexure IV

Report

Workshop on ICTs for the Community: Barriers, Divides and Work Pathways

United Theological College, Bangalore

Date: 15 February 2010

Organised by:
Institute of Social Studies Trust, Bangalore

Sponsored by:
IDRC, Canada

Workshop on
ICTs for the Community: Barriers, Divides and Work Pathways
United Theological College, Bangalore

Date: 15th February 2010

Organised by: Institute of Social Studies Trust, Bangalore
Sponsored by: IDRC, Canada

AGENDA	
9.00 - 9.30 a.m.	Registration and Tea
9.30 a.m.	Welcome
9.40 - 10.15 a.m.	Inaugural speech by Mr. H.S. Shankar, Project Officer, HRMS, Centre for E-Governance, Govt. of Karnataka
Session - I: Findings from the study on IT education for the youth from poorer communities in Bangalore and Low-end IT Occupation Workers in Delhi	
Chair: Ratna Sudarshan	
10.00 - 10.20 a.m.	Presentation by Sudhamani N, ISST Bangalore
10.20 - 10.40 a.m.	Presentation by Rajib Nandi, ISST New Delhi
10.40 - 11.15 a.m.	Discussion
11.15 – 11.45 am: Tea	
Session - II: Panel Discussion: ICTs in Development	
Chair: Olga Morawczynski	
11.45 - 12.45 p.m.	
Speakers	
	• Gurumurthy Kasinathan, IT for Change, Bangalore
	• Nirmita Narasimhan, Centre for Internet and Society, Bangalore
	• Devaraj, APSA, Bangalore
	• Olga Morawczynski, Microsoft Systems Research, Bangalore
12.45 - 1.15 p.m.	Discussion
1.15 p.m.	Closing Remarks
1.30 - 2.00 p.m.	Lunch

ICTs for The Community: Barriers, Divides and Work Pathways

Welcoming the participants, Ratna Sudarshan, Director, ISST outlined the objective of the workshop. Since 2003, ISST had done a number of studies on the low end IT sector, looking at what it meant for conditions of work, upward mobility etc. In this context, the workshop was interested in looking at the role of the government in IT education and e-governance.

In his inaugural address, Mr. H.S. Shankar, HRMS, E-Governance Project said that while earlier IT was linked mainly to computing, later to communication and now is an important aspect of development. Karnataka pioneered IT usage in 1974 when it computerised the payroll of the entire police system in Karnataka. The CET is also another achievement. The constraint was in taking the ICT to the people. The Bhoomi project where all land records have been digitized through the telecentres at the hoblis.

The Bangalore One project converged services, like applying for a passport, birth or death certificate, paying bills, booking tickets through a single window. E-procurement also had brought transparency and saved the Government money. It enabled bidders to bid from home as well. Even in rural parts of Karnataka, ICT has in food distribution through collection of data including signatures for ration cards. For Mr. Shankar, ICT had enabled the participation of people in matters of governance.

Gurumurthy Kasinathan, IT for Change, raised a question to further the discussion, asking whether e-governance had not in fact failed governance. Pointing that the government's concern should be poverty alleviation, school drop outs and drought relief, not bill payments. The Bhoomi project benefitted those who held land. It left out the really marginalised. Guru said that the next phase should be community informatics.

The session ended in mutual agreement that such processes should be taken one step at a time. Details about the Ashraya scheme, that sought to provide rural housing for the flood affected, was put up on the government's website, and this brought forth a large number of responses and volunteers.

SESSION I

Findings from the study of it education for the youth from poorer communities in Bangalore and low end it occupation workers in Delhi

Chair: Ratna Sudarshan

Ratna Sudarshan introduced the two studies by ISST, observing that at the low end of the IT sector, aptitude and skill are given more importance than formal education. Basic IT skills are no longer required to access jobs in the IT sector, but have become requisite for a wide range of jobs. It also offered entrepreneurship opportunities. What had emerged was the large informality that also surrounded this sector.

Study on IT education for the youth from poorer communities in Bangalore

ISST, Bangalore

Sudhamani N.'s presentation showed broadly three different kinds of educational institutes, those run by the government or being aided by it, small and large private institutes and those run by NGOs. NGOs tended to give free IT education to youth from low income backgrounds, while also providing spoken English classes while private institutes charged a fee, that in some cases could be quite exorbitant. It was observed that IT education tended also to be gendered, where hardware and system networking was mainly a domain of men as this involved travelling, going to people's houses and shops. Graphic designing had emerged as a preferred occupation. In terms of the training provided, APSA was seen as a best practice, as it gave IT education free of cost to youth from low income, rural areas while also providing accommodation and emphasising the need to save over the one year after they had gotten a job, ensuring a long hand holding period. Some of the gaps seen was the using of old software and instructors who were ill equipped to teach.

Looking at the youth from the sample of 25, the majority had completed II PUC (12th grade). Computer skills were useful for girls who were not able to complete their education, but were still keep to take up a job.

Work conditions, particularly after the recession, had changed. While earlier, Overtime was paid for, it was no longer in place and employees were expected to put in long hours with no compensation. However, what was also found was the non-contractual employment without ESI or PF, but meals being provided. In corporate style work places, the atmosphere came across as being intimidating for youth who were not fluent in English. However, it is also altering, with distinct changes in lifestyle seen.

Pointers that emerged were the need to open more centres that provided such free IT education, or increasing the seats to accommodate more youth in Government or NGO run institutes. There is much difficulty in tracing these students who pass out of IT training institutes, since private institutes do not look at backgrounds of students or always offer placements. They are also reluctant to give information about their student database. It became difficult to have a large sample.

DISCUSSION

Mr. Shankar responded that the government project, Yuva.com was begun in rural areas but did not take off. The government is now thinking of putting those computers in government schools.

Gurumurthy Kasinathan said that a lesson could be learnt from the Akshaya programme in Kerala which runs on very different lines from the one in Karnataka. It was worth studying in terms of design.

Low End IT Occupation Jobs in Delhi- Work Pathways, Challenges, Barriers.

ISST, Delhi

Rajib Nandi argued that while NASSCOM paints an inclusive picture of the IT industry when not everyone can get training at big institutes. There is very little data available about the low end IT sector. He said that the economic census in Delhi showed that the largest sectors were retail and manufacturing, in terms of size and employment. Using the

district level census of 2001, households from slum (A-F catgories) communities on electoral lists were surveyed, and a sample of 1,111 household with at least one IT worker was identified.

The sample revealed that the low end IT sector was male dominated, with 80% being from forward castes. Most workers had done short courses, between 6 months and 24 months, from small training institutes. A negligible number had gotten training from NGOs. It was found that people find jobs through informal networks and not through placement agencies. 67% of workers did not form part of the IT sector but worked in others. Only 22% worked in the core IT sector. Many of these workers are employed without any written contract.

Many of these workers were first generation IT workers. The sample suggested that the father in these cases had studied at least up to school level. 36% of these household were migrants from UP and Bihar.

In Nandi's opinion, such work is dead end work since it has little scope. The people who comprise this sector are not a homogenous group, and are not unionised either. He suggested that there should be larger emphasis on training, accessing jobs and formalising employment contracts.

DISCUSSION

Mr. Shankar said that there was a need to concentrate IT work in tier II cities, like Hubli, Mysore and places like Gulbarga so that people do not have to migrate so far. More educational centres must be opened here. He said that even in the case of garment workers, where women migrate to the city and earn a pittance, it would be better for the industries to go into other smaller cities.

Ratna Sudarshan felt that following the previous comment, the IT sector must be looked at within the larger development paradigm. She also observed that while the Delhi study looked at low end IT work as a dead end, the Bangalore study saw it as much more positive.

Gurumurthy Kasinathan said that this sector must be looked at through the lens of power relationships. Instead of looking at people simply as employers and employees, it was necessary to look at who has control over tools and nature of work. Higher income does not necessarily imply empowerment. He also offered the example of screen readers for the blind who use a software called JOSS. Since JOSS is licensed, a poor blind person cannot afford to buy a Rs 50,000 worth software. Such instances are not reflective of technical issues, rather they raise social and ethical questions.

SESSION II

Panel Discussion: ICTs In Development

Chair: Olga Morawczynski

Nirmita Narasimhan, Centre for Internet and Society, Bangalore

Nirmita Narasimhan said that technology could go a long way in enabling people with disabilities to access the internet as well as contribute, at the same time and on the same plane. She outlined three challenges:

The technical challenges being non-available, inaffordable and inaccessible websites and content. JOSS is accessbble to very few people. Those with no computers lose out. There is however mobile assisted technology which is more affordable at Rs 5,000-6,000. If the numbers of users were to substantially rise, she said, it would help bring down the cost.

Further, content on websites have a lot of graphic which makes the website inaccessible. She said that the government is slowly considering complying with web content access guidelines on government ministry websites. The department of IT and Communication is expected to also come out with a policy for electronic accessibility. This would improve digital as well as physical access.

Speaking on content challenges, she cites the case of the NCERT that put up all their textbooks online in pdf and image files. This did not reach out to a huge section. Later NCERT put them up as readable pdf files. There are about 70 million print impaired people in India, and this would include people with learning disabilities, those who are physically disabled and cannot hold a book and those who require alternative formats. Electronic formats are essential and Braille is now available electronically. She also pointed out the problems in converting books, since copyright permission was involved. India is not among the 24 countries where permission is exempt for conversion. There are therefore, no books for reference, recreation and high education for the print impaired. A digital copy should be created she said, since conversion takes a lot of time and finance. The HRD ministry is expected to come out with an agreement, but she expressed concern that if it was restricted to specialised areas and not general electronic accessibility, it would create more exclusion.

She also emphasised the creation for more open resources like open schools where material is available in a format with which people can take their time, since it is difficult to learn in mainstream schools.

Concluding, she said that alternative licenses should be used, like creative commons since contributions will be richer when people become users.

Gurumurthy Kasinathan, IT for Change, Bangalore

Gurumurthy Kasinathan referred the participants to the website www.publicsoftware.in . It contained, he said, information about the use and benefits of public software.

The thrust of his presentation was a relook at the fundamental assumptions undergirding ICT and development. He emphasised that ICT was not a tool, rather a society changing phenomena. The late 80s saw ICT being used in business applications. While this ensured that accounting errors did not happen, it did

not alter business. In the 90s, computers were used to link manufacturing to sales and purchase. What ICT changes was that it made businesses function in an integral manner.

However, in ICTD, tech vendors, he said, are seen as experts. The problem is that they are not concerned with equity and justice. EduSat has been a failure in India because learning is seen simply as content transmission. Efficiency has become the buzzword. Rather, he said that there is a need to shift to Community Informatics. Using the analogy of the provision of water, he said that public ownership, public maintenance and public creation involved te government and the community to work together. Adopting the Bisleri model in software made accessibility expensive and exclusionary. As an ethical problem, the government does not have a choice but to use and promote public software, he added.

Looking at ICT and Learning, he cited the different outcomes in education programmes in Karnataka and Kerala. While the Mahiti Sindhu programme in Karnataka had tech vendors creating content, the Kerala programme, IT at Schools empowered teachers who learn Linux six years ago, and later went on to learn content management and web page designing. Schools in Kerala have a webpage that is maintained by teachers. The NCF 2005 calls for learning by constructing and not consuming.

He stressed that the emphasis should not be on teaching one package like TALLY, but to understand the concept. With open source software, a person can become an entrepreneur.

Citing another example of community informatics, he spoke of the Mahiti Manthana initiative with Mahila Samakhya as a counter to the government's Nemadi scheme which is run by a shopkeeper looking at profit and would not be accessible to women. Mahiti Manthana that works radio, video and telecentres is run by adolescent girls or women, and the software is locally made to suit their needs. The same is true of the Vikasana project is Mandya.

Communities need to drive ICTs, he said. The transparency programme built into the NREGA in Andhra Pradesh is one such achievement. Since all the information is on the website, any discrepancy can be immediately detected. Similarly, using public software like Orca, every blind person will be able to read.

DISCUSSION

Olga Morawczynski asked if there had been any unintended consequences in the examples that he had cited, any type of changing dynamics within the household. She felt that the consequences of using technology do not always correspond with the aims.

Gurumurthy Kasinathan responded saying that when Mahila Samakhya creates a group, it has implications for a girl's mobility, it facilitates nari adalats and has consequences for the household. With a young girl as a telecentre head, the status of the adolescent girl undergoes a change.

Ratna Sudarshan asked how there can be negotiation between using open office at a learning centre and accessing jobs, since this was a problem that the ISST community centre in Delhi had faced. Students are hesitant to use public software because employers look for those who know how to use packages like TALLY.

GK responded saying that once a person knows how to use a spreadsheet, any programme can be used. The importance lies in the concept and not in the brand. The public sector should not use public funds to buy software, and should instead be using public software.

Devaraj added that while the government gives computers, many do not work. Teachers have no idea about computer maintenance.

Devaraj, Association for the Promotion of Social Action, Bangalore

Devaraj described the work that APSA does. APSA encourages an integrated approach. Observing that women who go home after hey finish their training are stopped from working if they work long hours, APSA intervenes by supporting them for one year, during which time they are able to save money. When they have money, they have voice in the family, he said. APSA is also supported by Youth Reach in Delhi which provides workplace English lessons. This has worked better than bringing in volunteers.

APSA works with migrants, orphans and youth in crises, aiming to make a shift from unskilled to decent employment. It provides training in tailoring, printing and stationary etc for about one year with the ratio of boys to girls being 1:1. Most of the students have very little formal training. Graduate youth are a resource in upgrading syllabus. Students are also given supportive skills like life skills, counselling, art and culture orientation and youth development activities. They also have discussion about social issues.

Students also have a block placement and job placement. A monthly follow up of salaries, timings, ESI, PF, OT, Van facilities and other workplace problems takes place. Students initially are able to earn Rs 2,500-3,500 and in about five months begin making Rs 5,000.

Students feel proud that they work in an office, have some financial stability and are learning how to use new technology. However, they face long hours, do task based jobs, ESI, PF, and transport are not available for everybody and sometimes government and festival holidays are not given either.

DISCUSSION

One participant asked how students can contribute in increasing accessibility to ICTs

Gurumurthy Kasinathan responded saying that there are two areas in which students can play important roles. One was in creating alliances and networks. The RTI movement, Right to Food and the BT Brinjal movement used ICT to bring people together. The second is in the area of publishing. Experiences have to be made available through sharing information. Blogging and suing web tools are good aids.

Olga Morawczynski, Microsoft Systems Research, Bangalore

Olga Morawczynski made her presentation on M-Pesa, a mobile phone based money transfer application in Africa. In a couple of years, one third of the Kenyan population had adopted it, being especially useful for migrants to send money home. It led to an increase of economic activity in the village. Women did not have to depend on other people in the village for money. This phenomena led to unintended consequences, such as people asking the migrants for more money and men not coming home very often. Since Kenya has a polygamous society, if men did not come home, it usually meant that there would be another wife. She was in India to look at the possibility of mobile money transfers here. She said that ICT was not just about computers but all the relationships that surround the machine, and all of these are embedded in a context. This environment, she said, gives shape to what the tool can do. She felt that the best approach was in small and incremental changes that would continue to have an impact.

Background Note for the IT Workshop
15 February, 2010
Bangalore

The emergence of IT has been seen as providing new employment opportunities, as a sector in its own right, and as an essential input into a wide range of other services and manufacturing industries. With the support of new information technologies the geographical and spatial separation of different segments of the production and marketing process becomes feasible. This is reflected in the growing use of IT across the sectors and emergence of call centres catering to global markets as well as domestic and local markets. Being part of this new framework requires access to computers, basic knowledge of computing, and associated with this reliable electricity / telecom infrastructure. Since these are not evenly distributed across the country or across income groups the 'digital divide' is also apparent.

Against this background, the proposed workshop will address the following questions:

- *Is IT indeed a 'new pathway' to work – breaking free of earlier constraints and prejudices? Or are there any new barriers in accessing IT education and IT jobs for the people from low income groups? If the barriers exist then to what extent?*
- *What measures can be taken to make the IT education and jobs accessible to all groups of people, if the divides still exist.*
- *Are youth from low income groups able to access new and better work than their parents were able to?*
- *Is there a gender divide? Does it allow men and women equal access?*
- *What does research tell us about alternative ways of acquiring IT education? Are there 'best practices' in this regard?*
- *What difference does the presence of Free and Open Source Software and open access educational materials make, both in the present and potentially in the future?*

ISST will present findings from two of its recent studies conducted in Delhi and Bangalore as a contribution to this debate.

The study in Delhi captures the access and availability of low-end IT jobs, role of training institutes in accessing the jobs, nature of employment and contract, opportunities, skill acquisition and migration of low-end IT/ITES workers in the context of growth and development in the NCR. The study surveyed lower-middle class and poorer residential clusters. The study has been contacted in all nine districts of Delhi on a representative sample.

Bangalore being an IT hub has seen a proliferation of various types of IT institutes starting from NGO driven initiatives to Government sponsored institutes and private institutes that enable the entry of young men and women into the low end IT sector. The study at Bangalore tries to capture the impact of the impact of IT education initiatives for the young people from lower strata of the society and particularly the presence of women in IT education and jobs. The study raises the questions, of reliability of those training in providing stable jobs in the changing IT scenarios in the context of ups and downs in the market.

Workshop on

ICTs for the Community: Barriers, Divides and Work Pathways
United Theological College, Millers Road, Bangalore, 15th February 2010

Organised by ISST

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