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CONTENTS

	<i>Page No.</i>
ARTICLES	
Child Learning in Andhra Pradesh: Interplay Between School and Home <i>S. Galab, H. Moestue, P. Anthony, A. McCoy, C. Ravi and P. Purudhvikar Reddy</i>	5
Human Capital, Economic Growth and Development – New Evidence <i>Magali Jaoul-Grammare</i>	27
Higher Education under WTO Regime – An Indian Perspective <i>Mir M. Amin</i>	45
Facilities in Primary and Upper Primary Schools in India: An Analysis of DISE Data of Selected Major States <i>S.M.I.A. Zaidi</i>	59
RESEARCH ABSTRACT	
An Economic Analysis of Costs in a Digital Library <i>Geeta Verma</i>	83
Educational Reforms for Human Development in Egypt <i>Lakshmi Narayanan</i>	86
BOOK REVIEWS (See overleaf)	89

BOOK REVIEWS

- Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline (Chris M. Golde) 89
M. Anandakrishnan
- Education Policy: Process, Theory and Impact (Les Bell and Howard Stevenson) 92
Namrata
- Mass Media for Women Education (Akila Sivaraman) and Effects of Television and the Viewers (Amal Datta) 95
P.C. Bansal
- Meeting Basic Learning Needs in the Informal Sector: Integrating Education and Training for Decent Work, Empowerment and Citizenship (Madhu Singh, edited) 99
Holger Daun & Karanam Pushpanadam
- Change and Transformation in Ghana's Publicly Funded Universities (Takiwaa Manuh, Sulley Gariba, Joseph Budu and James Currey) 102
Pradeep Kumar Choudhury
- Education and Training Policy (Attracting, Developing and Retaining Effective Teachers (OECD)) 105
R.P. Singh
- Does Education Really Help? (Edward N. Wolff) 107
Jandhyala B.G. Tilak

The results reinforce previous findings about the role of parental factors, and provide insights into aspects of education reform that are necessary to improve the quality of public schooling.

Introduction

Children learn both within and outside the classroom, from books and people and by listening, seeing and doing. Skills obtained in school, such as reading, writing and arithmetic, can be improved through resources in the home and community. It is not surprising, therefore, that children from wealthier backgrounds tend to get more help from educated family members and have fewer competing pressures of housework or employment compared to poorer children, with subsequent implications for their ability to learn. But what does this mean for education policy? In a country like India, where enrolment rates are relatively high but drop-out rates and teaching quality are a concern, there is a need to understand the extent to which child learning outcomes (such as basic numeracy and literacy skills) are influenced by their home environment. If parents and communities play a role in compensating for the low quality of government schooling, we need to consider how state and donor policy initiatives can best take into account and support the complementary role of families and communities in the educational process. What would be the most effective and equitable approach to education policies and programmes – to target schools (e.g. improve the learning environment) or parents (e.g. through income supplementation or adult literacy programmes), or both?

This paper explores the interplay between school and home in determining child learning. We use baseline data from the Young Lives study (www.younglives.org.uk) in Andhra Pradesh in South India to compare indicators of child learning according to type of school attended, public or private. We further examine if parental education acts as a complement or substitute for schooling in determining child learning. The methods and results will be presented following some background discussion of education and literacy in India and a review of the literature concerning the quality of education in public and private schools.

Education for All, India and Andhra Pradesh

Education was officially declared a universal human right in 1948 by the General Assembly of the United Nations. In India, a child's right to free and compulsory primary education was ratified through the 93rd Constitutional Amendment in 2001. In the 1990 conference on "Education for All" in Thailand, more than 150 governments, including India, promised to provide free and compulsory primary schooling so that by the year 2000 all children would enjoy the right to good primary schooling and adult illiteracy rates (defined as the ability to read and write among those aged 15 and above) would be halved. That commitment was unfortunately not kept, but it was reaffirmed at the World Education Forum in Senegal in 2000. This was the year when the UN also set the

Millennium Development Goals, one of which was to “ensure by 2015 that children everywhere will complete a full course of primary schooling”.

India has seen remarkable progress over the past 50 years in both adult literacy and school enrolment for both boys and girls. The school system is the second largest in the world, with almost 600,000 schools providing primary education for grades 1 to 5 (Govinda 2003). Officially, over 95% of the population are served by a public school within a walking distance of 1 km. While the number of children enrolling in school continues to increase, the percentage has remained relatively static since the early 1990s due to population growth. The gross enrolment ratio for the primary level (Grades 1-5) increased from 97.4 in 1991 to 113.8 in 1992¹, and from 34.0 to 42.8 for the upper primary level (Grades 6-8) (Department of Elementary Education and Literacy, 2003).

Unfortunately, the quality of education provided during the first few years in school has been brought into question by the high drop-out rates. Almost 40% of children in India’s public schools drop out before they have completed Grade 5. Studies indicate that even students who had completed Grade 5, have poor literacy skills (Nambissan, 1996; Yadav and Bharadwaj, 1999). According to the 2001 census, 65% of adults in India today are illiterate (GOI 2001). In fact, the absolute number of illiterates now equals the country’s entire population on the eve of independence (Govinda 2003).

The state of Andhra Pradesh, the focus of the present study, has achieved considerable economic progress but nevertheless it lags in terms of social indicators, especially the schooling and literacy of girls and women. For example, the state ranks 11th in per capita domestic product but 22nd in adult literacy among the 28 states (GOI 2001). Current enrolment rates are high for both sexes: in 2000, 88% of boys and 85% of girls aged 5 to 9 were enrolled in school (Reddy and Rao, 2003). However, like the country as whole, Andhra Pradesh suffers from disparities in education and literacy by gender, between urban and rural areas, and between regional and social groupings. The drop-out rate from primary schools among boys is 39% while it is 42% for girls. Analysis across social groups suggests that the large majority of drop-outs come from lower castes, such as scheduled tribes and castes. For example, 67% of boys and 74% of girls of scheduled tribes drop out of primary schools (GOAP 2000:14).

Growing Private Provision

It cannot be denied that poverty is still a major barrier for education participation in India. Although theoretically free, public schooling places high costs on parents, so that decisions about whether or not to send children to school are still critically dependent on their ability to pay for clothing (often a uniform), transport and books (Tilak 1996, PROBE 1999). The private sector charges parents more for its services than the public

¹ Gross Enrolment Ratio is the number of students enrolled in a level of education, regardless of age, as a percentage of the population of official school age for that level; can be greater than 100% as a result of grade repetition and entry at ages younger or older than the typical age at that grade level.

sector and operates on a business principle, although often they offer free and concessionary seats to some poor children. The role of private unaided schools is growing in Andhra Pradesh and in other parts of the country and the developing world (Tooley 2005). Despite the costs, poor parents often aspire to send their children to private schools as it is typically perceived that they provide superior quality of education. A recent study of the role of private and public education in poor areas of Hyderabad found that 65% of school children were attending private unaided schools (ibid 2005). Apart from private schooling, private tuition or coaching is also rising, and often even provided by public school teachers themselves (Kabeer 2003). Any discussion about education in India must therefore recognise the rising importance of the private sector, which often goes unrecognised in official statistics.

Quality of Education

There has recently been a shift in the literature away from the traditional argument that children drop out of school due to the related financial or opportunity costs, towards the argument that they drop out due to the poor quality of schooling provided (Govinda 2003, PROBE 1999). Attendance and dropout, it is claimed, are influenced by factors other than household economics (Asraf 1989). The claim is supported by studies in Uttar Pradesh, for example, showing that while parents endorse the value of education they cite the quality of teachers as the main problem for non-enrolment and dropout (Banerjee, 1995; Bashir, 1992).

UNESCO defines educational quality as learners' cognitive development along with the promotion of values and attitudes of responsible citizenship and the nurturing and creation of emotional development (UNESCO 2004). While cognitive development can be measured with educational tests, it is challenging to measure other parameters that constitute educational quality. Most studies of educational quality assess child learning outcomes along with the facilities available in school.

A recent study of the private unaided schools serving low-income families in different African and Indian settings found some interesting results (Tooley 2005). In each country, the majority of poor school children attend private unaided schools. These schools performed better than government schools at a lower cost: they had roughly equal numbers of boys and girls attending private unaided schools, lower pupil-teacher ratios, and higher teacher commitment and satisfaction, despite being paid considerably less than teachers in government schools. In Hyderabad, the highest pupil-teacher ratio was in the government (42:1) and private aided (43:1) schools, whereas the private unaided unrecognised schools had the lowest (22:1). Private unaided recognised schools had a pupil-teacher ratio of 27:1. For all facilities, the private schools had an advantage over the government schools in terms of provision of blackboards, playgrounds, desks, drinking water and separate toilets for boys and girls. Teacher absenteeism was highest in the government schools, and child learning outcomes were higher in private schools, especially in maths and English. The mean maths scores were about 22% and 25% higher in private unrecognised and recognised schools respectively than in government schools.

Other studies have also noted the growing number of private schools as being indicative of their perceived superior quality compared with public schools, and that both rich and poor are taking advantage of the provision of private schools (Kingdon 1994, as cited in Kabeer, 2003; Reddy, 1991). In fact more than 50% of unrecognised private schools in Andhra Pradesh are located in the Telangana region, one of the most impoverished areas of the state (Reddy 2000).

Interplay of School and Home

While child learning is undeniably determined by the quality of teaching in the classroom, along with other school-level factors, it has been suggested that the home environment is also important. When parents place value on schooling and actively support children at home, it is likely children will perform better than if their time and efforts are diverted into doing household chores, looking after siblings or helping with farm-work, or if parents simply ignore their school lives and learning. Lack of electricity and space can also hamper children's ability to study at home.

The education of family members, especially mothers', has been shown to have a significant influence on school enrolment (Srivastava, 1997; Montgomery et al 1999; Ridao-Cano, 1999). A study in Tamil Nadu found that for each yearly increase in parent's education, the probability of enrolment increased by 2-3%, and the effect was stronger for girls than for boys (Duraiswami, 1992). The view that women have a greater preference than men to invest in their children's education and health is supported by several studies of micro-finance programmes that suggest loans given to women are more likely to be re-invested in their children's well-being than loans given to men (Kabeer, 2001; World Bank, 1995).

Debate on the role of the home environment in child learning in relation to policy on education is limited. However, an active involvement of parents and communities as a whole in children's schooling is seen as important for two major reasons: first to encourage and help their own children in the process of learning, but also to put pressure on the government to improve the school environment (Govinda 2003). Village education committees (VECs) and parent-teacher associations (PTAs) are good examples of an institutionalized linkage between schools, parents and communities.

Aims and Objectives of this Paper

The literature suggests that interplay between school and household factors is important in determining child learning. Using cross-sectional data from the Young Lives study in Andhra Pradesh, this paper aims to explore two main themes: child learning in public and private schools, and the role of household level factors such as parental education in impacting child learning outcomes. The specific objectives are:

1. To compare learning outcomes for children in private and public schools, as well as the differences in these outcomes by sex, wealth and caste.

2. To assess the influence of a caregiver's own education on their children's learning outcomes, in both private and public schools.

Methods

The data were collected as part of the baseline survey for The Young Lives Project (www.younglives.org.uk). The respondents were 1008 mothers and children aged 7.5-8.5 years at the time of the survey and sampled across the 3 distinct agro-climatic regions of Andhra Pradesh (Coastal AP, Rayalaseema and Telengana) from 20 sentinel sites. Details of the survey methods used, including the sampling approach, are given in Galab et al, 2003.

Variables

The conceptual framework in Figure 1 shows that the main relationship under study is between school type (private or public) and child learning outcomes. However, the figure also shows that to assess this relationship, it is important to take account of other factors which may influence it (known as confounders). Potential confounders include child age, child stunting (low height for the child's age), caregiver's education, household wealth, household size, caste and school grade completed. Secondly, to consider the impact of caregiver's education on child learning, it was hypothesised that this impact might differ according to whether the child attends public or private school, or according to the household's wealth level (known as effect modification). Thus school type and wealth were considered as effect modifiers for the association between caregiver's education and learning outcomes.

The main variables were measured as follows:

School Type

The main caregiver of the child was asked whether or not the child was currently enrolled in school, and if so which type of school that was: public or private.

Child Learning Outcomes

Child learning was assessed through reading, writing and numeracy skills, to produce standardised scores ranging from 0 to 1. Literacy was measured in the local language Telugu, by asking children to read specific letters (T, A, H), a word (HAT) and a simple sentence (The sun is hot) presented on a card. Answers were coded as "can't read anything" (0 pts) "reads letters" (1/3 pt) "reads word" (2/3 pts) and "reads sentence" (1 pt). Writing was measured by asking children to write the following sentence: "I like dogs". Answers were coded as "no" (0 pts), "yes without difficulty" (1 pt) and "yes with difficulty or errors" (1/2 pt). Numeracy was assessed by asking children to give the answer to the calculation "2 times 4". Answers were coded as "correct" (1 pt) or "incorrect" (0 pts).

The three measures (reading, writing and numeracy) were combined to create a “total learning score” in order to capture a greater variation in child learning outcomes, by a standardised average of the three scores. The minimum learning score is 0 and the maximum 1.

It should be noted that the questions used in this study to measure learning were, according to the public school curriculum, appropriate for children in Grade 2, and hence considered easily within the capability of children in Grade 3 (the official grade for the 8-year olds included in our study).

Household Wealth Index

The household wealth index is an average score ranging from 0 to 1 constructed from the following components:

- *Housing quality* – the average number of rooms per person; floor, roof and wall type
- *Consumer durables* – the scaled sum of consumer durables (radio, refrigerator, bicycle, television, motorbike, motor vehicle, mobile phone, land phone, or some additional consumer durable indicators specific to the country context such as a working fan and a working clock).
- *Services* – the simple average of drinking water, electricity, toilet facilities and cooking fuel, all of which are 0/1 variables.

The wealth index is grouped into three categories: <0.2 the ‘poorest’, $0.2-<0.4$ ‘very poor’, and ≥ 0.4 ‘least poor’.

Caregiver’s Education

The large majority of “primary caregivers” are biological mothers of the child (97%). Information on the level of schooling completed by the primary caregiver was collected and coded as “none”, “primary”, “middle”, “secondary” or “higher”, constituting grades 0, 1-5, 6-8 and 9+ respectively. The highest grade completed was also collected and this continuous variable was used in the multivariate regression analysis. The schooling of “caregiver’s partners”, of whom 96% were biological fathers, was collected and analysed in the same way.

Distance to School

In each community, information about the distance from the centre of the community to the nearest public or private school was collected.

Caste Group

This was categorised as Scheduled Castes (SC), Scheduled Tribes (ST), Backward Castes (BC), Other Castes (OC).

Ethics and Fieldwork

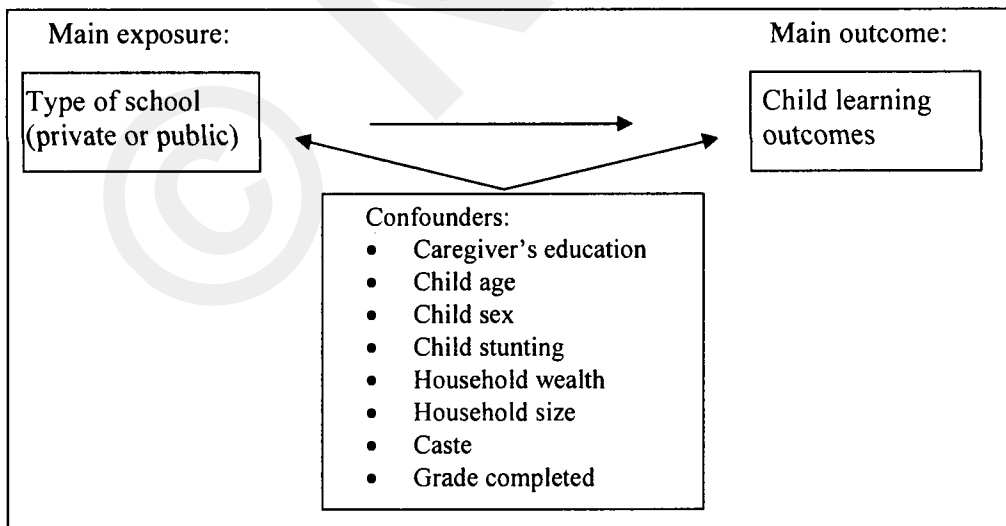
Formal ethical approval for the Young Lives study was obtained from independent ethics committees at the London School of Hygiene & Tropical Medicine, London South Bank University and the University of Reading, UK. Since no local ethics approval body existed during this first phase of the Young Lives study, ethical guidance was sought from expert members of the project's advisory panel in Andhra Pradesh.

Fieldwork was conducted in the latter part of 2002, by four fieldwork teams: one per region and a team dedicated to urban Hyderabad. Fieldworkers constructed household listings in each of the communities selected for inclusion in the survey. Field teams were assisted in their identification of and entry to eligible households by local community health workers. Where an eligible household was identified, fieldworkers explained the study, enrolled households and administered the consent form and returned the next day to conduct the interview with the child's primary caregiver. Full copies of fieldwork documentation and questionnaires are available on www.younglives.co.uk.

Data Analysis

Data analysis was carried out using SPSS 12 and analysis followed the conceptual framework outlined in Figure 1. Patterns of age, sex and grade by school type were described.

FIGURE 1
Conceptual Framework



Statistical tests used included chi-squared tests, Students' T-test and F-test to assess the statistical significance of differences between proportions, 2 means or >2 means respectively. Statistical significance was assumed at the 5% level.

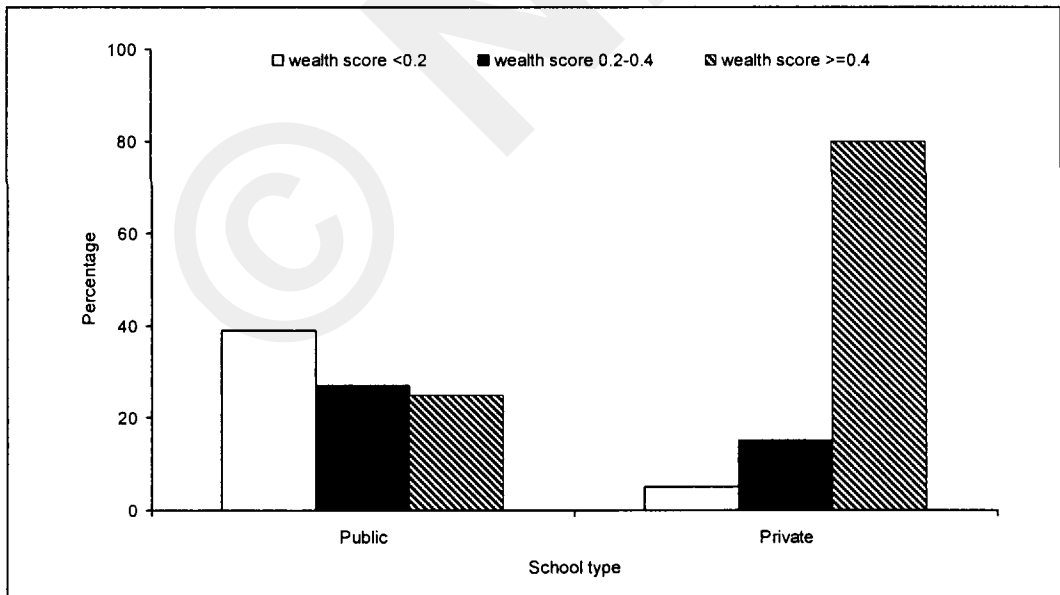
Multiple linear regression analysis was used to examine the relationship between school type and learning outcomes whilst simultaneously adjusting for potential confounding variables. Effect modification by wealth and by school type was examined by including interaction terms in the regression model.

Results

In this sample from AP, only 2.3% of children were not enrolled in school, which supports government figures of almost universal enrolment (GOI 2001). Most of the non-enrolled children were from poorer families. Data were analysed for 913 8-year olds, following the exclusion of children with missing information on learning outcomes and children not enrolled in school.

Of the sample of children examined, 76% attended public school and 24% private school, which is a plausible finding in the light of previous literature. There were clear differences in household wealth between children in public and private schools, as illustrated in Figure 2. Almost 80% of private school children came from the highest wealth category and only 5% from the poorest. The wealth distribution was comparatively even in public schools, where 38% children were from the poorest families and less than 25% from the richest.

FIGURE 2
Percentage Children in Each Wealth Category by School Type



The distance from the community to the nearest private or public school differed according to school type. Whereas almost all the communities were at a distance of less than 1 km from the nearest public school (99.5%), only 79% of communities were

equally close to private schools and 19% were 2-5 km away. These distances were measured for the community as a whole. Since it is possible that individual children attend schools other than those closest in proximity, we cannot be certain that these are the distances that the children actually travel to school. The findings nevertheless suggest that private school children are likely to travel a little further to school than public school children.

Table 1 shows that there is a clear difference in their learning between children in public and private schools, in their average numeracy, reading, writing and total learning scores, with private school children doing better for all child learning outcomes. On average, public school children achieved scores of 0.72 out of a maximum 1, and private school children 0.90 ($P < 0.001$).

TABLE 1
Mean Learning Scores of Children Attending Public or Private Schools

	<i>Public School</i> (<i>N</i> = 749)		<i>Private School</i> (<i>N</i> = 234)		<i>P</i> -value
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Numeracy	0.65	0.35	0.85	0.27	<0.001
Reading	0.61	0.39	0.87	0.30	<0.001
Writing	0.86	0.35	0.95	0.22	<0.001
Total learning score	0.72	0.28	0.90	0.19	<0.001

While 8 year olds should officially be in grade 3, this was not always the case in either type of school. In fact a greater proportion of private school-children had lower grade-for-age than public school children. In public schools, 23% of 8-year old children were in grade 3, 58% in grade 2 and 18% in grade 1, whereas in private schools the corresponding figures were 16%, 48% and 37%. This is probably due to the different approaches to grade repetition in each school type. Private schools are more likely to encourage parents of slower 8-year children to repeat grades, whereas grade repetition in public school tends to occur in later years in conjunction with exams.

Possible Alternative Explanations for the Association Seen - Confounding

The reasons for the differences in learning scores according to school type are likely to be multiple and linked to poverty. It is plausible, for example, that household wealth can explain much of the difference observed in children's performance. Therefore, in order to provide a broader picture of the differences by wealth, rural and urban areas and caste, the patterns of child learning outcomes and school type were explored taking into account other variables.

TABLE 2
Child and Household Characteristics and School Type

		<i>Public school</i> (<i>N= 749</i>)		<i>Private school</i> (<i>N= 234</i>)		<i>P-value</i>
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
HH wealth		0.28	0.18	0.55	0.18	<0.001
HH size		5.61	2.08	5.35	1.94	0.09
Height-for-age z-score		-1.61	1.03	-1.17	1.06	<0.001
Child sex	Girls	51.6		47.7		0.164
Caregiver's Schooling	None	79.2		36.3		
	Primary	9.1		13.2		
	Secondary	7.2		17.1		
	Higher	4.3		33.3		<0.001
Rural/urban	Urban	12.4		66.4		<0.001
Caste	SC	24.7		10.6		
	ST	12.0		6.4		
	BC	47.9		40.9		
	OC	15.5		42.1		<0.001

Many factors are associated with school type. Table 2 shows that children in public schools are much poorer than children in private schools. The average wealth score was 0.28 for public school children compared with 0.55 for private school children ($P<0.001$), which corresponds to 38% and 5% classified as the "poorest". The table also shows that the mean height-for-age z-score was -1.61 in public schools and -1.17 in private schools, corresponding to 35% and 20% classified as "stunted". There were a higher proportion of "scheduled castes" (lower) castes in public schools (25% vs. 11%) and more "other castes" (mainly upper) in private schools (42% vs. 16%). There were, however, no differences in the proportion of pupils who were female between the types of school.

Table 3 shows the mean learning score by wealth, caste, sex and other factors. It shows a linear upward trend in children's learning scores by wealth and caregiver's education. Urban children do better than rural children, but there were no differences between boys and girls. Children from "scheduled castes" (lower) do worst whereas those from "other castes" (mainly upper) do best (0.73 vs. 0.84, $P<0.001$)

TABLE 3
Child and Household Characteristics and Total Learning Score

		<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>P-value</i>
HH wealth	<0.2	279	0.69	0.27	
	0.2-0.4	293	0.74	0.26	
	>=0.4	341	0.86	0.21	<0.001
HH size	1-4	269	0.79	0.24	
	5-6	454	0.77	0.26	
	>6	190	0.74	0.27	0.105
Sex	Boys	448	0.78	0.24	
	Girls	465	0.75	0.27	0.087
Caregiver's Schooling	None	645	0.73	0.27	
	Primary	81	0.82	0.23	
	Middle	88	0.86	0.18	
	High +	98	0.92	0.16	<0.001
Rural/urban	Urban	218	0.86	0.22	
	Rural	695	0.74	0.26	<0.001
Stunting	Stunted	283	0.74	0.26	
	Not stunted	628	0.79	0.25	0.005
Caste	SC	194	0.73	0.25	
	ST	96	0.77	0.28	
	BC	426	0.76	0.26	
	OC	197	0.84	0.23	<0.001

Tables 2 and 3 have shown that several factors are independently associated with both the exposure (school type) and the outcome (child learning), so it is necessary to conduct multivariate regression analysis to account for the effect of these confounding variables. The selection of variables to include in the model was based on the conceptual framework in Figure 1. The results are given in Table 4.

Model 1 in Table 4 includes school type as the only explanatory variable. The results from this confirm that children in public schools have lower mean learning scores, 0.17 less than that of children in private schools. Model 2 includes the potential confounders. The relationship between school type and learning score remains strong and statistically significant ($P < 0.001$) even when the effects of these other factors are controlled. The results suggest that on average children from public schools have learning scores 0.11 below those of children in private schools, adjusting for other factors in the model.

There are several other factors, which appear to independently predict children's learning score in addition to the type of school - wealth, household size, and grade. Even after adjusting for these other predictors, there is also a gender difference in learning

score. Model 2 shows that on average boys have scores 0.03 higher than girls. Although this difference is not large in absolute terms, it is statistically significant ($P=0.037$). Height-for-age z-score, child's age, urban/rural site and caste are not associated with child learning score once other factors are accounted for.

TABLE 4

Regression Output: The Relationship Between School Type and Learning Score, Crude (Model 1) and Adjusting for Potential Confounders (Model 2).

<i>Outcome: Learning Score (0 to 1)</i>	<i>Model 1</i>		<i>Model 2</i>	
	<i>Coeff</i>	<i>P</i>	<i>Coeff</i>	<i>P</i>
School type (0=private 1=public)	-0.173	<0.001	-0.107	<0.001
HH wealth score			0.206	<0.001
HH size			-0.009	0.023
Child height-for-age z-score			0.008	0.275
Child age in months			0.003	0.181
Caregiver's schooling (grade)			0.007	0.006
Child sex (0=girl, 1=boy)			0.030	0.037
Site (1=urban, 0=rural)			-0.030	0.273
Caste	SC		-0.022	0.391
	ST		0.019	0.528
	BC		-0.030	0.156
Grade child completed			0.057	<0.001

The Role of Caregiver's Education

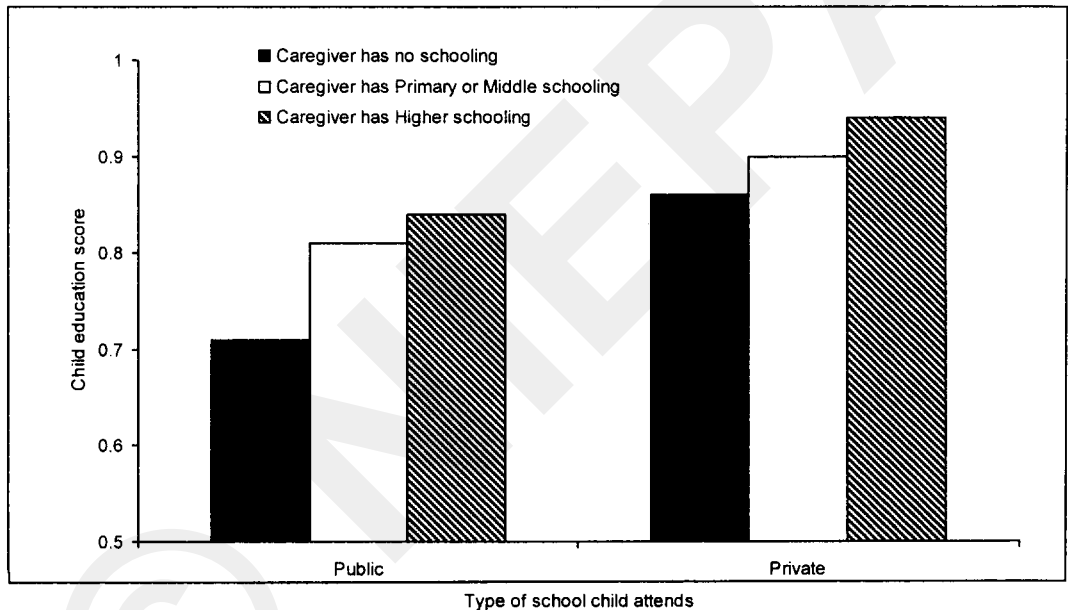
The education of the child's caregiver is a significant predictor of the child's learning score (Table 4). For each grade of school the caregiver has completed, the average child learning score increases by 0.007. This means that the completion of Grade 5 (primary school) is associated with an average score increase of 0.035. A similar but less pronounced effect was found for the caregiver's partner's education, the large majority of whom are biological fathers of the child (results not shown).

The question posed was: Is the effect of caregiver's education different in private and public schools? Could it be that public school children benefit more from their caregiver's education (in terms of learning outcomes) than private school children do? This question was explored by examining the interaction between caregiver's education and school type in multivariate regression analysis. The results showed the existence of an interaction with borderline significance ($P=0.043$) and suggested that caregiver's education probably has a stronger effect on child learning in public schools than in private, adjusting for wealth and other confounding factors. This is illustrated in Figure 3,

which shows the mean learning score, by caregiver's schooling in public and private school children. The figure shows that all scores were higher in private than public schools, which might suggest that while caregiver's education is important, it does not wholly compensate for the differences that arise between the school types.

FIGURE 3

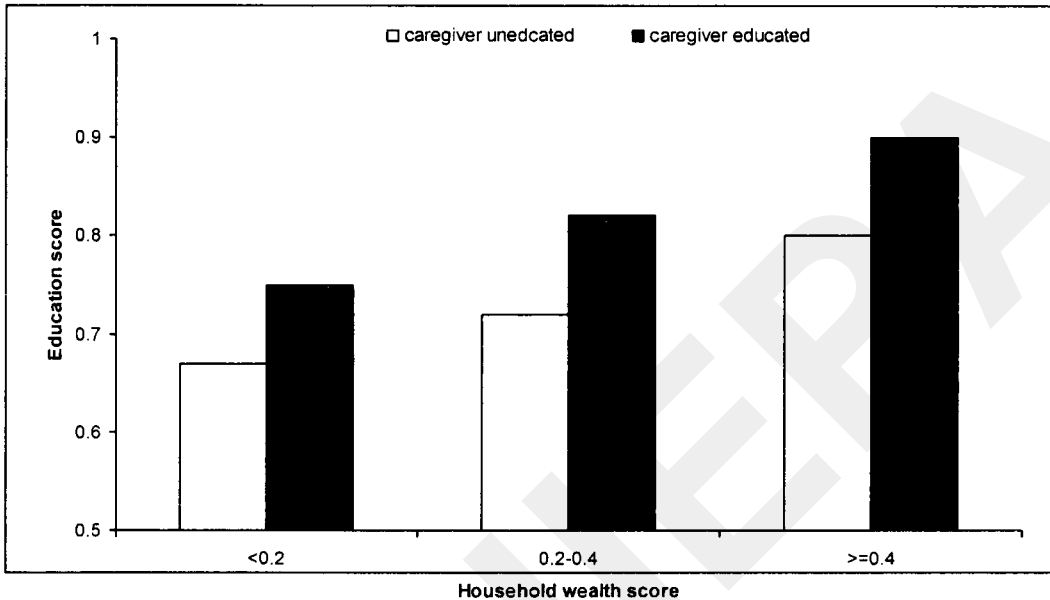
Mean Learning Score of Children According to Their Caregiver's Education, by School Type



The multivariate regression analysis shown in Table 4 indicates that caste has no association with children's learning score, once household wealth is controlled for. So the question was posed: Does household wealth interact with caregiver's education in determining child learning? Could it be that the poorer children benefit more from their caregiver's education (in terms of learning outcomes) than richer school children? This question was explored by examining the interaction between caregiver's education and wealth in multivariate regression analysis. The results showed that the interaction was statistically non-significant, which suggests that wealth does not modify the effect of caregiver's education. This is illustrated in Figure 4, which shows the mean learning score by caregiver's schooling in each wealth category. It shows that the difference in mean learning scores between children whose caregivers are uneducated and children whose caregivers have at least completed primary school is similar, approximately 0.10 scores, for all children rich and poor alike.

FIGURE 4

Mean Learning Score of Children According to Their Caregiver's Education, by Household Wealth



Discussion

The results of this study, while reinforcing previous findings about the role of parental factors in the learning achievement of children, also provide certain insights into aspects of education reform that are necessary to improve the quality of schooling in public schools. The data yield four major findings: first that private school children have better literacy and numeracy skills regardless of wealth or caste; second that children with uneducated parents (especially mothers) are at a disadvantage; third that this disadvantage is greater in public schools than in private schools; and finally that girls have lower learning scores than boys. Furthermore, there is a clear interplay between school and home: they both independently influence child learning and they interact with each other in determining the effect. But what do these findings actually mean? And how can they feed into educational policy in Andhra Pradesh?

Summary of Findings

Better Learning Outcomes in Private Schools than in Public Schools

One of the important findings of this study is that children in public schools have lower learning outcomes than children in private schools, adjusted for household wealth and other confounding factors. On average children from public schools have learning scores

0.11 below that of children in private schools. The differences in learning outcomes might give an indication of education quality, although other information on facilities or other indicators were not collected. Nevertheless, the results support findings from a recent study in Hyderabad also showing a considerable difference in mathematics and English skills between public and privately educated children (Tooley, 2005). Higher academic achievements in private schools do not necessarily mean that the quality of private schooling is sufficient. It has been argued that, although private schools demonstrate somewhat better learning outcomes, their teaching-learning processes have been shown to be far from satisfactory (PROBE, 1999).

Parental Education Matters, Especially in Public Schools

The study also found that children of uneducated parents have lower learning outcomes than children of educated parents, accounting for the effect of wealth and other confounding factors. This suggests that parental education (and especially mothers') has a role in mitigating the negative impacts of poor quality education. The literature suggests that this is plausible. Educated and literate parents are able to provide academic help with homework (Sreedhar, 1999) and mothers, who have been termed a 'superior teacher' (Gang, 1996, p.1), are more likely than men to appreciate the value of education and to want to invest in it if they themselves have been to school (Jejeebhoy, 1995; Haddad, 1997). The overall effect of education appears, therefore, to be long-term and to pass on from one generation to the next. Promoting adult education, especially for women, could pay rich dividends for the participation of children of the next generation in the education system (Weir, 2000). However, parental education cannot make up for teaching deficits in the classroom. While mothers' education is undeniably important, the results shown here suggest that it does not wholly compensate for the differences in child learning outcomes that arise between public and private schools.

Girls Have Lower Learning Scores than Boys

Our results also show that girl children have lower learning scores than boys. In a sense this is quite surprising because the 8-year olds in our sample have only been in the formal education system for a maximum of 3 years, and yet we already detect a small but statistically significant difference between the sexes. This may be due to household or cultural factors that place pressure on girls to do chores. The implications for policy will be discussed in detail below.

Policy Implications

The Role of Private Education

The findings have supported previous research showing that first, private education is prevalent among the poor, and second, that it is associated with better learning outcomes. A recent study found that nearly 98 percent of rural parents believe that it is important to send their children to school (PROBE, 1999). This phenomenon is putting conflicting

pressures on the poor: whereas some choose to pay fees for a higher teaching standard and the social status associated with private education, others decide to opt out of the school-system due to their inability to access good-quality low-cost schooling (Vasavi, 2003; PROBE, 1999).

It is important to be aware of the debates that surround the role of private education. On the one hand, it is argued that the duality between public and private schools may perpetuate the divide between the rich and the poor, genders and castes. For example, a poor family who is willing to pay extra for private education will be forced to prioritise certain children, the choice of which is often determined by birth-order and sex. A study in urban Uttar Pradesh shows that boys are more likely than girls to be sent to private schools, indicating greater willingness of parents to invest in their son's education than in their daughters (Kingdon, 1996). Similarly, a study in rural Maharashtra shows that the eldest sons are the most likely to be sent to school while the eldest daughters are the least likely (Jejeebhoy, 1995). On the other hand, it is argued that private education plays a crucial role in reaching the "Education for All" (EFA) targets by reaching the poor and satisfying their educational needs that are currently not met by the government (Tooley, 2005).

Quality of Schooling

While the role of the private sector is debatable, few would disagree that the government has an important role to play in providing good-quality primary education. Without proper public schooling, the value of schooling is altogether reduced, especially for those people who are novices to the culture of literacy, and discourages future investments in education from poorer households (PROBE, 1999). Furthermore, it has been shown that there can be psychological consequences for those gaining aspirations through education but not the skills to realise them in later life. The latter have been termed 'the schooled illiterates' (Ekanayake, 1990). An acceptance of low quality public schooling would contradict the view that education should act as a social equalizer in guaranteeing that all children - children from every section of society - have equal opportunities for learning. After all, education is a human right. A poor child from a lower caste and with illiterate parents should, once he has entered the classroom, have the same opportunities to learn as children from upper-castes with educated parents, so that at the end of 5 years of primary schooling, the structural social divides are not reflected in the learning scores of school children.

The low quality of Indian public schooling has been long debated, with calls for more government funding and commitment to realise the EFA goals through improved attendance of teachers and minimum standards of school infrastructure, like adequate space, sanitation and drinking water facility that assist in pupil retention. Investment in the training of teachers is seen necessary not only to address the special needs of "first generation learners" (children with uneducated parents) but also to ensure all children, once they are within the school grounds, may overcome any social or economic disadvantages associated with their family's background (PROBE, 1999). Skill

orientation in the education system from post-primary level need to be built in, especially in the context of globalisation and opportunities that are available due to the new and expanding economy (UNESCO, 2004).

The Interplay Between the Home and School Environment

This study showed that caregiver's education has a stronger effect on child learning in public schools than in private, adjusting for wealth and other confounding factors. This may suggest, quite plausibly, that when the quality of schools is poor, the home environment plays a greater role in child learning. However, while it is well recognised that the household factors influence child learning, the question remains: to what extent does or should the school system depend on the home environment to encourage children to attend and participate in class? Yes - there is an interplay between school and household-level factors, but what exactly does this mean for policy: should we be focusing on the supply side (schools) or the demand side (parents) or both?

A recent study dispels the myth of parental indifference to children's education, which apparently is widespread, especially in official circles where it provides a convenient rationalisation for India's low schooling levels (PROBE, 1999). In the state of Uttar Pradesh, 100% of parents thought education was important for boys, and 92% of parents said education was important for girls. Nevertheless institutionalised parental and community involvement in schooling of children is crucial and should be further strengthened in order to increase the demand for better quality schooling and to enable schools to become public spaces where the community actively engages in the management of education process.

Improvements to schools need to be context specific. For example, in areas where child labour is an important cause of dropouts, the state needs to make it financially worthwhile for a child to attend school, whether it be by providing students with nutritional supplements, increasing the quality and usefulness of obtaining an education, or providing alternative to childcare to enable their older siblings, who would normally act as caregivers, to go to school. Reducing unnecessary dependence on resources in the home would promote an equality of learning. This may be done, for example, by using methods of teaching that rely less heavily upon homework and by providing additional support for first generation learners and after-school classes for children of lower caste (DPEP, 1999). Home-work based teaching can have an exclusionary impact on children who come from families with low quality of housing including lack of electricity and cramped living conditions, illiterate parents, and high levels of child involvement in household chores and economic activities.

The finding that girls have poorer learning outcomes, combined with the known intergenerational benefits of female education, supports the call for more emphasis to be placed on female schooling. Not only are measures needed to continue to encourage children to enrol, but more importantly to ensure that they attend school regularly and do not drop out prematurely.

Conclusion

This study of learning outcomes among 8-year old children in Andhra Pradesh provides four major findings: first that children in private schools have better literacy and numeracy skills regardless of wealth or caste than children in public schools; second that children of uneducated parents (especially mothers) are at a disadvantage; third that this disadvantage is greater in public schools than in private schools; and finally that girls have lower learning scores than boys. Furthermore, there is a clear interplay between school and home: they both independently influence child learning and they interact with each other in determining the effect. The results reinforce previous findings about the role of parental factors in the learning achievement of children and provide certain insights into aspects of education reform that are necessary to improve the quality of schooling in public schools. We ask the question: what would be the most effective and equitable approach to education policies and programmes – to target schools, parents or both? This study suggests both, with a focus on increasing the quality of public schooling, although further research is needed to explore a range of context-specific policy options which implicitly recognize the interaction between the school and home environment.

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.... The recommendations made in the synthesis of the findings of the case studies are worth following especially in respect of the national norms for allocation of funds for different states to reduce interstate differences. This is a very useful and timely publication.

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Human Capital, Economic Growth and Development New Evidence

Magali Jaoul-Grammare*

Abstract

In spite of the essential role conferred on human capital by endogenous growth theorists, various empirical approaches have questioned these theories. Recently, Aghion and Cohen (2003) underlined the fact that the role of education varies according to the degree of development of a country. As a follow up of our study on the European countries (Diebolt & Jaoul, 2004a; Jaoul, 2004a), this paper aims to determine the type of relationship existing between higher education and economic growth. We carry out a cliometric study aiming, on the one hand, at testing the contributions of endogenous growth theories and, on the other hand, to highlight the assumption formulated by Aghion & Cohen i.e. the relation varies from one country to another according to the degree of a country's development.

Introduction

Today education doesn't only concern the parents and their children or teachers and pupils, but its development has become an element of survival of industrialized countries. In a context of strong international competition, both at the economic level and in higher education, the organization and the quality of the system "higher education - research - innovation" have become imperative for developed economies. Modern societies confer on higher education much importance. The share of the national wealth which is devoted each year to this sector summarizes the stake governments have for a correct use of such a mobilisation of resources¹.

Higher education, research, innovation, and technical progress are important in the process of economic growth. The ways by which it affects the economic growth are rather well known, but we neither know how knowledge affects the economic growth, nor the nature of the relationship between education and economy.

It's well known that growth affects all countries, but it affects them in an unequal way. Moreover, what is more surprising is that within the same continent, like Europe for

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¹ Domestic expenditure on education represented 6.3% of the GDP in France in 1974,; in 2002, it was 6.9%. Within this expenditure, the share represented by higher education is 16.3% (Source: EPD).

example, growth happens in an irregular way in the long-run. The middle of the 18th century Western Europe can be characterized by a diffusion of the scientific spirit and by a commercial and financial capitalism. History shows that the starting point initially took place in the United Kingdom at the beginning of the 18th century, before extending to other countries.

The French economy take-off occurred later, because France did not experience the same agricultural revolution as England, but also because for nearly a quarter century, France went through another revolution and mobilized human energies in sectors quite different from that of economic production. In spite of the creation of first textile companies in about 1830 and first railroad in 1845, it was only under the Second Empire that the explosion of the French economy occurred with the development of the banking structure and the fast extension of the railroad network².

In fact, it is possible to relate four periods in the evolution known by Western Europe:

- 1870 - 1913: Period of great expansion characterized by an increase in growth rates.
- 1913 - 1945: Phase of deceleration because of two world wars and the great depression of the 1930s.
- 1945 - 1973: The golden age. The Thirty Glorious appears exceptional for two reasons: the rebuilding was fast and the growth accelerated.
- Since 1973: New deceleration of the growth related to the crisis of the welfare state.

Unlike philosophers, for a long time economists were unaware of a possible influence of the knowledge on the growth process because of the history of industrialization of modern societies. Indeed, during the first Industrial Revolution (1780-1880), the role of knowledge does not seem to have been a determining factor, inventions being the product of isolated and not educated activities. However, during the second Industrial Revolution (1880-1970) the role of knowledge had become vital.

If the education-economy relation is the subject of many studies in economics both at the theoretical and empirical levels, the interest of political authorities in it is relatively recent. Although education is today the first budget of the state in France (99.7 billion Euros *i.e.* 7.5 % of the GDP), its efficiency raises an implicit question: Does there exist really an organization of the education system supporting the economic growth process?

Since Adam Smith, in 1776 and especially since the 1960s, great efforts to answer this question were made that gave rise to the theory of human capital (Mincer, 1958; Schultz, 1961; Becker, 1964). After 1975, and the persistence of the economic difficulties, it's only about the middle of the 1980s that a new approach to the economic analysis of education began. Following the model developed by Solow (1956), endogenous growth theorists (Lucas, 1988; Romer, 1986, 1990) confer to human capital (Lucas) and knowledge (Romer) an important place in the economic growth process.

² It extended from 1900 km in 1847 to 18000 km in 1870.

Various empirical approaches partially, even completely, called into question the New Growth Theories. More recently, Aghion and Cohen (2003) have highlighted the impact of the technological level of development in the growth process. For them, the role of education varies depending on the degree of development of a country.

Following our preceding study on the European countries (Diebolt & Jaoul, 2004a; Jaoul, 2004a), the aim of this article is to try to determine the type of relation existing between higher education and economic growth. Our cliometric study aims, on the one hand, to determine if these theories are substantiated in the case of France, and then to see whether the results are different from one country to another, according to the degree of development. Our paper is organised in three parts: after a recall of the theoretical framework, we present the database and the methodology used; then we discuss our empirical results; and finally, we propose a new model explaining relationships between higher education and economic growth.

Theoretical Foundation

Education, Engine of the Growth: State of the Knowledge

In the 1960s, theorists of human capital analyze the impact of education on individual's productivity and advantages which result from both at the individual and collective levels. If various factors (population, capital and knowledge) play a role in the growth process, their roles can be unequal between countries at time periods. Thus, many analyses of growth sources were proposed, putting forward one or the other factors, and regarding growth as a purely external phenomenon or trying to make it endogenous.

Classical authors (Smith, 1776; Ricardo, 1817) are the first to outline a growth theory by presenting it as the result of the capital accumulation. However, they share a rather pessimistic vision of the long run: according to them, growth is dedicated to cancel itself gradually in a stationary state because of marginal decreasing returns in agriculture. During the 1940s, several authors (Domar, 1946; Harrod, 1948) extended Keynes' study (1936). Their pessimism concerning the possibility of sustainable growth and ensuring full employment is immense³, but they do not assign this problem to the decrease of marginal returns; like Keynes, they thought of problems of rigidity and coordination.

From the end of the 1950s, neo-classical analysis of growth, whose central problem is the search for a balanced growth with full employment emerged, with Solow's model (1956) which came in response to models from Harrod and Domar. Solow shows that economic growth, stable and regular, with durable full employment, is possible thanks to the flexibility of the real wage, which allows ensuring balance on the labour market. Moreover, he highlights the fact that, without technical progress (or knowledge), effects of decreasing returns on the capital imply a stop of the growth. Solow places the exogenous technological knowledge in the centre of the model, this one allowing long term economic growth. However, it is necessary to introduce an element to explain durable growth by thwarting decreasing returns of the capital. From this point of view,

³ They speak about balance "on the wire of the razor".

Solow introduces neutral exogenous technical progress within the meaning of Harrod, compatible with balanced growth because it does not modify the capital coefficient. In Solow's model, without technical progress, the growth appears limited by decreasing returns of the capital. The introduction of technical progress makes it possible to overcome this problem. However, this one is exogenous and is given to economic agents so that the per capita growth rate, equal to the rate of technical progress, is fixed outside the model. We can see that the neo-classical model does not provide a true explanation of the growth. Moreover, many econometric works highlighted the "Solow's residue", i.e. a considerable share of the growth rate which remains unexplained. This led to suppose that there was another factor of production, in addition to traditional factors of production (capital and labour), whereas the context of constant returns of scale (rule of exhaustion) made the remuneration of this one impossible. The solution will be to make this third factor endogenous.

In the 1980s, new growth theories broke completely with the neo-classical vision and the standard Solow's model by endogenising technical progress and consequently, growth. The objective of these theories is to try to explain the long term growth of the per capita income by describing it as the product of the economic system. The growth rate of the economy is determined by behaviour of agents and economic variables. Two assumptions were in the centre of neo-classical theories: marginal decreasing returns and exogeneity of technical progress. The starting point of the endogenous growth is to assume that the marginal productivity of the capital is not cancelled when the stock of capital becomes larger but is constant.

Whatever the nature – exogenous or endogenous – of the growth, all these theories differ primarily by their design of knowledge: incorporated in the individual (Lucas, 1988; Uzawa 1965); product of the R&D (Romer 1990); resulting from Learning by Doing (Arrow, 1962; D'Autume and Michel 1993; Romer 1986). But what is their empirical validity?

The Empirical Invalidation of Growth Theories and the Assumption of Aghion & Cohen (2003)

In spite of recent progress in terms of theoretical modelling of the knowledge, gaps persist at the empirical level because of the nature of the concept of knowledge. Indeed, it presents a problem of evaluation in so far as it is an intangible and incommensurable good. However, many empirical studies measured the importance of the knowledge and in particular of education on the economic growth, sometimes calling into question the dominant models. In 1962, Denison showed that the increase in the mean level of education explains more than 20 percent of the American growth between 1929 and 1957. But according to him, education would be more than one simple factor improving quality of the manpower and the productivity of the labour force insofar as it produces something, i.e. "innovation".

Thereafter, models of endogenous growth took into account these ideas in order to provide an explanation of the growth, using new concurrent factors like the human

capital. Later studies focused on the importance of these new factors and economies of convergence⁴. From a sample of 98 countries, over the period 1960-1985, Barro (1991) confirms a positive correlation between the growth rate of the GDP per capita and the initial level of human capital, and a negative relationship with the initial level of GDP per capita.

Thereafter, Barro and Lee (1993) in a study on 129 countries focused on the rate of school success of the adult population at various levels and the growth rate of the GDP between 1960 and 1985. They concluded that education levels have a strong explanatory capacity in so far as they highlight direct positive effects of education on growth rates. In 1994, Benhabib and Spiegel (1994) showed that between 1965 and 1985, the growth rate of the human capital did not significantly explain the growth rate of the product per capita.

More recently, just like Bils and Klenow (2000), Diebolt and Monteils (2000ab) showed that principal causality stems from the economy to education and not the reverse as new growth theories suggest. Demeulemeester and Rochat (2003, p. 66) are also cautions on the role of higher education in the economic development: “(...) it is absolutely not obvious that this relation, active of more education towards more growth is also simple, mechanist and linear (...)”.

Moreover, economic development seems to have a considerable influence on higher education (Aghion & Cohen, 2003, p. 14). According to them, “the organization of the education system differently affects the growth potential according to the economic level of development”. Indeed, they underline the impact of the technological level of development in the growth process. The role of education is different and varies by the level of development of the country. In case of rich countries (which are close to the technological border), the objective is to maintain the economic level reached in order to remain competitive and to face constraints of competition. They will adopt an innovative and creative behaviour by supporting higher education and research. For less developed countries, the objective is to reach the level of development of richer countries. They have a corrective and imitative behaviour and, in this direction, they concentrate on financing and the development of primary and secondary education. Demeulemeester and Rochat (2003) also show in their empirical analysis on Australia, Sweden and United Kingdom, that according to the history and specificities of countries, higher education does not contribute in an identical way to the economic development of the country.

Following these various empirical approaches, a total or partial questioning of new growth theories seems to appear. In order to try to come to a conclusion about the type of relationship existing between higher education and economic growth, we carry out a cliometric study, to determine if these theories are valid in the case of France. Then we

⁴ The principal explanatory element of convergence in the neo-classical model is the presence of decreasing returns in the physical capital. Thus, poor countries having small proportion of capital work have marginal high productivities of the capital allowing a high growth rate.

wish to see whether that varies from one country to another by to the degree of development.

Database and Methodology Used

Database

We selected two countries, Japan and the United States to compare with the French case since 1950. We chose these two countries because we wanted to confront the case of France with countries with different levels of wealth, culture and development. For this reason, we chose the United States, first world power representing countries “close to the technological border”, and Japan in prolongation of our study on the engine of the Japanese economic growth before the second world war (Diebolt & Jaoul, 2004c), because of the specificity of this country. For each one of them, we characterised the relationship between the growth rate of the GDP and the growth rate of the number of students, using a VAR model. The data sources are:

- For the GDP, Maddison from 1950 to 1994 and Eurostat from 1994 to 2000;
- For students, Diebolt (1997, 1998) for Japan, US Department for Education for the United States.

Data series concerning France used here, (GDP, manpower of higher education) resulted from work of Quantitative History of Diebolt (1997), and were supplemented, for the most recent part, using statistics of OECD and Eurostat figures. The growth rates of the GDP are noted as GDPJAP for Japan, the GDPUSA for the United States, and GDPFRA for France; the growth rate of manpower of higher education is noted SUPJAP for Japan, the SUPUSA for the United States, and SUPFRA for France).

Methodology

The objective is to examine the validity of endogenous growth theories and to highlight the assumption formulated by Aghion & Cohen (2003). For this purpose, two tools are used: the co-integration (long run stable linear relationship between variables) and causality (short term relationship). This involves the use of VAR (Vector Auto-Regressive) modelling that enables us to envisage all causal relations between two variables without *a priori* exogenising one of them.

Proposed in the 1980s by Sims (1980), VAR modelling was initially opposed by ‘classic’ econometricians (in favour of the formalisation generated by the Cowles Commission). Indeed, the latter category tended to favour theory, construct models on theoretical bases and it was considered essential to put forward hypotheses concerning relationship between variables. Those in favour of the empirical approach considered that the model should be based on solid statistical results, making it possible to reveal the structure of markets.

Advantages of VAR modelling over classic modelling are that it allows better dynamic analysis of systems, taking into account the intrinsic structure⁵ of series and dynamic effects between variables; and because it makes it possible to envisage all causal relationships between two variables without any *a priori* assumptions with regard to the exogeneity of any one of them.

VAR models nevertheless have their limitations. The first is the problem of the number of variables to be included in the model and the resulting estimation problem. The number of variables to be included in the model brings the problem of vanishing degrees of freedom. Indeed, considering 20 variables and 4 delays leads to estimate 80 coefficients per equation and the number of unknown coefficients often approaches the size of the sample analysed. Another criticism often aimed at VAR models is the small amount of theory to which they refer to describing them as “a-theoretical” models. This ‘theory versus measurement’ debate had already appeared first in the 1920s following the work of Mitchell (1913)⁶ and appeared again in the 1980s with that of Sims. However, this debate is far from settled, and if VAR models are criticised for their lack of theory, theoretical models supported by the Cowles Commission are also criticised for their lack of flexibility (Lucas, 1976)⁷. In the case of these differences of opinion, our cliometric approach (research in quantitative history structured by economic theory and fed by econometric methods) proposes the reconciliation of theory and measurement providing both the theoretical and empirical debate required in economics.

In these models, each equation of the model describes the evolution of a variable in function of its past values, and of past values of other variables of the system⁸. The analysis proceeds in several stages (cf. in particular Diebolt & Litago, 1997).

The use of this type of modelling implies testing several assumptions. First of all, it is necessary to work with stationary variables⁹. Then, an essential phase of construction of a

⁵ The intrinsic structure of the series is related to its identification in the ARIMA classification (Box and Jenkins, 1976).

⁶ The ‘theory versus measurement’ debate started in the analysis of Mitchell cycles (1913) that laid the empirical foundations of modern macroeconomic theory.

⁷ Lucas (1976) used strong theoretical bases to argue that these models are fundamentally imperfect for assessing the consequences of the results of political alternatives. He puts forward the reason that, for example, their functioning provides little advice for political managers with regard to predicting changes of effect in economic policy because it is improbable that the parameters of the models remain stable under alternative economic policies.

⁸ That is to say still while formalizing:

$$\begin{bmatrix} Y_{1,t} = \Phi_{11}^1 \cdot Y_{1,t-1} + \dots + \Phi_{11}^p \cdot Y_{1,t-p} + \dots + \Phi_{1n}^1 \cdot Y_{n,t-1} + \dots + \Phi_{1n}^p \cdot Y_{n,t-p} + \varepsilon_{1t} \\ \dots \\ \dots \\ \dots \\ Y_{n,t} = \Phi_{n1}^1 \cdot Y_{1,t-1} + \dots + \Phi_{n1}^p \cdot Y_{1,t-p} + \dots + \Phi_{nn}^1 \cdot Y_{n,t-1} + \dots + \Phi_{nn}^p \cdot Y_{n,t-p} + \varepsilon_{nt} \end{bmatrix}$$

with n the number of variables and p the number of delays.

model VAR is the selection of the optimal lag. If there is no criterion to determine the lag, econometricians agree on the fact that, theoretically, this number must be sufficiently large. Being based on the concept of entropy (measurement of the informational contents of a series), various existing criteria (Akaike, 1970, 1974; Hannan-Quinn, 1973; Schwartz, 1979) are based on the maximization of the logarithm of the function of “log-probability”. The model selected will be that which has a minimal value of these criteria. In our analysis, we will retain the BIC criterion of Schwartz (1978), considered to be completely consistent (Diebold and Sharpe, 1990).

Once given the optimal lag, the analysis can take two non-exclusive orientations: the study of the dynamics of the model and the study of causal relationship. The latter concerns the long term analysis via the concept of co-integration and the study of causality relationship (short term).

The term “co-integration” first appeared in 1964 in Sargan’s (1964) work but only received true theoretical coverage by Engle and Granger (1987). Co-integration encompasses the idea that two or more series evolve together in time and generate statistical equilibrium in the long term, whereas the variables may move in different directions in the short term. However, if they continue to move far from each other in the long term, economic forces, such as a market mechanism or government intervention makes it possible to bring them towards each other. Analysis of the co-integration presented by Engle and Granger (1983, 1987) permits to identify the true relation¹⁰ between two variables by seeking the possible existence of a vector of integration and by removing its effect. A necessary condition of co-integration between two series x_t and y_t is that they have the same order of integration “D”. Within the framework of VAR modelling, the presence of co-integration requires a correction of the model (Vector Error Model Correction, VECM) which takes into account this relationship in order to avoid the risk of spurious regressions (Granger and Newbold, 1974). Indeed, when two series are co-integrated, there is a difficulty in the estimation and the good statistical quality of the model is generally due to the non-stationarity.

In addition to the identification of the generating process of each variable of the model with unit roots tests, the finality of a model VAR is the identification of causal relationships between variables. The description of causal relationship between the

⁹ A X_t process is known as stationary if all its moments are invariants for any change of the origin of time. There are two types of non-stationary processes: the TS processes (Trend Stationary Processes) which present non-stationarity of the deterministic type and the DS processes (Difference Stationary Processes) for which non-stationarity is due to a random type. These processes are respectively stationarised by a deviation from the deterministic trend and with a differences filter. In this last case, the number of filters indicate the order of integration of the variable. A variable is integrated of order “D” if it is necessary to differentiate it “D” times to make it stationary.

¹⁰ If two variables are co-integrated, that comes from the presence of a common stable trend in the long run; the analysis of the co-integration consists in removing this common trend and then studying the relation between the variables, called here “true relation”.

economic variables allows a better comprehension of economic phenomena and consequently, a better implementation of the economic policy. The definition of causality is given by Granger (1969): the variable y_{2t} causes the variable y_{1t} if the prediction of the latter is improved when one incorporates information concerning y_{2t} in the analysis. There are two approaches of causality: Granger (1969) and Sims (1980). Granger causality relates to the propagation of deterministic impulses like structural changes. On the contrary, Sims analysis is based on the propagation of stochastic impulses representative of “surprises”. Although these two approaches are generally equivalent (Bruneau, 1996), we choose here a test of Granger, because we consider that it is legitimate to associate the relationship between higher education and economic growth to a non-stochastic context.

Results

Unit root test (Elliott, Rothenberg & Stock, 1996) reveals that variables GDPUSA and SUPFRA are stationary. Variables GDPJAP, GDPFRA and SUPUSA are stationarised by deviation from a deterministic trend. Lastly, variable SUPJAP is taken in the first differences. For each country, the necessary condition of co-integration is not met; so the analysis can be made with the use of a VAR model.

The Case of France

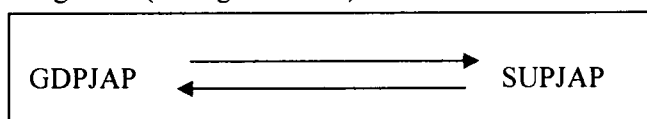
Whereas over the last two centuries, the general tendency seems to go in the direction of dominant theories which support the thesis that higher education contributes to the economic growth, (Jaoul, 2004b), over the last half-century, we don't observe a relationship between higher education and economic growth. This lack of coordination between the economic growth and higher education system over the contemporary period could be due to the problem France faced to adapt consequently its education system, in particular its higher education system to the economic development (Aghion & Cohen, 2003).

The Case of Japan

The studied model is a VAR(5) of the form:

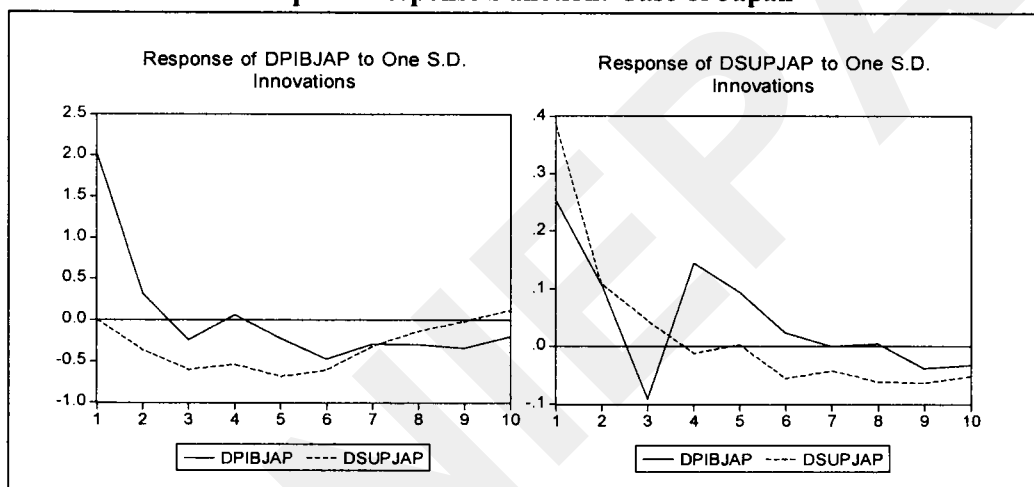
$$\begin{bmatrix} GDP_t \\ SUP_t \end{bmatrix} = [A_0] + \begin{bmatrix} A_1 & B_1 \\ C_1 & D_1 \end{bmatrix} \begin{bmatrix} GDP_{t-1} \\ SUP_{t-1} \end{bmatrix} + \begin{bmatrix} A_2 & B_2 \\ C_2 & D_2 \end{bmatrix} \begin{bmatrix} GDP_{t-2} \\ SUP_{t-2} \end{bmatrix} + \dots + \begin{bmatrix} A_5 & B_5 \\ C_5 & D_5 \end{bmatrix} \begin{bmatrix} GDP_{t-5} \\ SUP_{t-5} \end{bmatrix} + [\varepsilon_t]$$

The causality analysis shows a retroactive loop between the GDP and the number of students. So, higher education appears as engine of growth but it is also determined by the level of economic growth (see figure below).



The dynamic analysis of the system confirms this idea; indeed, after a shock, if two variables find again their long run balanced path, it means that they are sensitive to a variation of the other variable. Thus, a shock on higher education has an impact on the GDP, initially negative (approximately 5-6 years), then positive. On the other hand, a shock on the GDP has a negative impact on students, but in a shorter duration (3 years); this influence becomes positive then attenuates (Figure 1).

FIGURE 1
Impulse Response Function: Case of Japan



The variance analysis shows that this double influence is more important for higher education. Indeed, variations of the GDP are influenced by variations of higher education by 25 percent; whereas variations of higher education are influenced by variations of the GDP by 41 percent (Table 1).

TABLE 1
Variance Decomposition— Case of Japan

<i>Variance Decomposition of PIBJAP</i>			
<i>Period</i>	<i>S.E.</i>	<i>PIBJAP</i>	<i>SUPJAP</i>
1	2,009844	100,0000	0,000000
2	2,068787	96,80944	3,190561
3	2,168664	89,34653	10,65347
4	2,237173	84,03406	15,96594
5	2,351886	76,93620	23,06380
6	2,475021	73,08965	26,91035
7	2,512886	72,25076	27,74924
8	2,534113	72,42544	27,57456
9	2,557428	72,91911	27,08089
10	2,568027	72,91811	27,08189

<i>Variance Decomposition of SUPJAP</i>			
<i>Period</i>	<i>S.E.</i>	<i>PIBJAP</i>	<i>SUPJAP</i>
1	0,459902	30,00946	69,99054
2	0,484040	31,82844	68,17156
3	0,494559	33,92238	66,07762
4	0,515472	39,11667	60,88333
5	0,523929	41,06529	58,93471
6	0,527515	40,69736	59,30264
7	0,529272	40,42764	59,57236
8	0,533018	39,86814	60,13186
9	0,538353	39,59610	60,40390
10	0,541969	39,44524	60,55476

The Case of USA

The model relating to the analysis of United States is a VAR (1) such as:

$$\begin{bmatrix} GDP_t \\ SUP_t \end{bmatrix} = [A_0] + \begin{bmatrix} A_1 & B_1 \\ C_1 & D_1 \end{bmatrix} \begin{bmatrix} GDP_{t-1} \\ SUP_{t-1} \end{bmatrix} + [\varepsilon_t]$$

Unlike Japan, for the United States there is only one relation of causality going from the GDP to higher education. This unilateral relation is in contradiction with dominant theories (see graphic below) because it is the level of growth reached by the country which determines the development of the education. However, that goes in the direction of our working hypothesis, which says that the United States reached a level of economic development near to the technological border, and that they adapt their higher educational system to maintain their competitiveness on a high level.



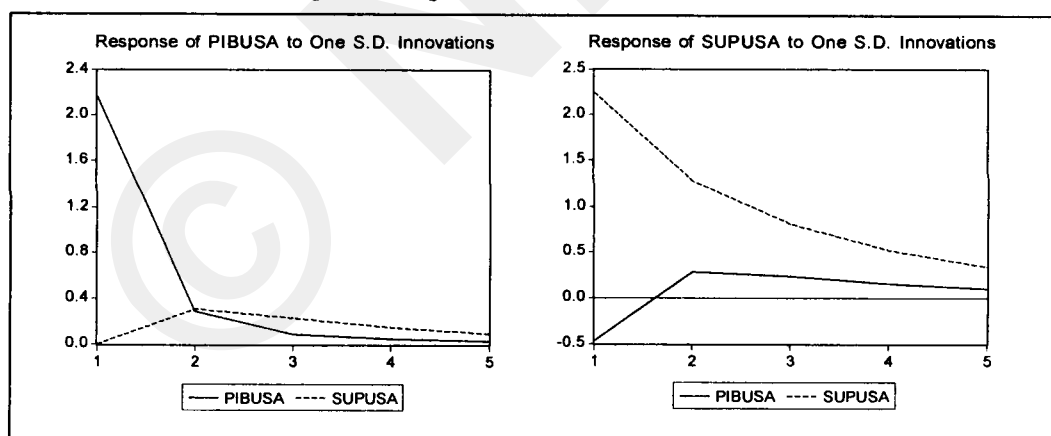
TABLE 2
Variance Decomposition – Case of USA

<i>Variance Decomposition of PIBUSA</i>			
<i>Period</i>	<i>S.E.</i>	<i>PIBUSA</i>	<i>SUPUSA</i>
1	2,165611	100,0000	0,000000
2	2,205502	98,08526	1,914743
3	2,218379	97,09555	2,904450
4	2,223628	96,67974	3,320261
5	2,225789	96,50856	3,491442
6	2,226679	96,43810	3,561901
7	2,227047	96,40907	3,590932
8	2,227198	96,39710	3,602901
9	2,227260	96,39216	3,607837
10	2,227286	96,39013	3,609872

<i>Variance Decomposition of SUPUSA</i>			
<i>Period</i>	<i>S.E.</i>	<i>PIBUSA</i>	<i>SUPUSA</i>
1	2,291868	4,228612	95,77139
2	2,639678	4,349360	95,65064
3	2,770148	4,668732	95,33127
4	2,822223	4,801795	95,19820
5	2,843425	4,854906	95,14509
6	2,852124	4,876413	95,12359
7	2,855704	4,885211	95,11479
8	2,857180	4,888827	95,11117
9	2,857788	4,890317	95,10968
10	2,858039	4,890930	95,10907

The dynamic analysis (Figure 2) and the variance decomposition (Table 2) confirm this observation. Higher education is more sensitive to variations of the GDP (4.3 percent) than the GDP being sensitive to variations of higher education (0 percent); a shock on the GDP initially affects higher education to a fall, then in a rise before attenuating. On the other hand, a shock on higher education has a weak positive impact on the GDP which attenuates.

FIGURE 2
Impulse Response Function: Case of USA



Conclusion: Towards a New Model?

Whereas France does not present a relationship between higher educational system and the economic growth, Japan and the United States present a relationship between these two aggregates. In order to try to explain these differences from a country to another, we consider higher education as an investment.

For the United States, the direction of the relationship from the economic system to the educational system can be interpreted like a strategy of innovation (Aghion & Cohen,

2003): the level of economic growth is such as it conditions the organization and the development of higher education. In this case, higher education can be apprehended as an infrastructure investment. Education then becomes a condition for the effectiveness of material means.

The case of Japan is more complex since a double relation is highlighted. We can think that Japan is in a transitive stage. After a strategy of imitation (Aghion & Cohen, 2003) in order to reach the technological border-period where an influence of education on GDP was observed (Diebolt & Jaoul, 2004c), this country whose growth exploded in particular during the thirty glorious years, has now a strategy of innovation similar to that of the United States. It adapts its research and its educational system to the economic level. Contrary to the previous case, higher education seems to be first a material investment and then an investment of infrastructure. In the first case, the possibility of development induced by such an investment is uncertain: the material investment is considered as a driving force of economic growth because it is undertaken with a view that for production there should be outlets. It is not certain that a similar forecasting calculation can be made for education.

This problem of adaptation of higher education to the economy's capacity of absorption, is also found if we consider higher education as an investment of infrastructure, whether it has a driving role or a role of accompaniment. Concerning material investment, this leads to advocate a scholastic structure (levels and types of education) corresponding to a desired level of economic growth.

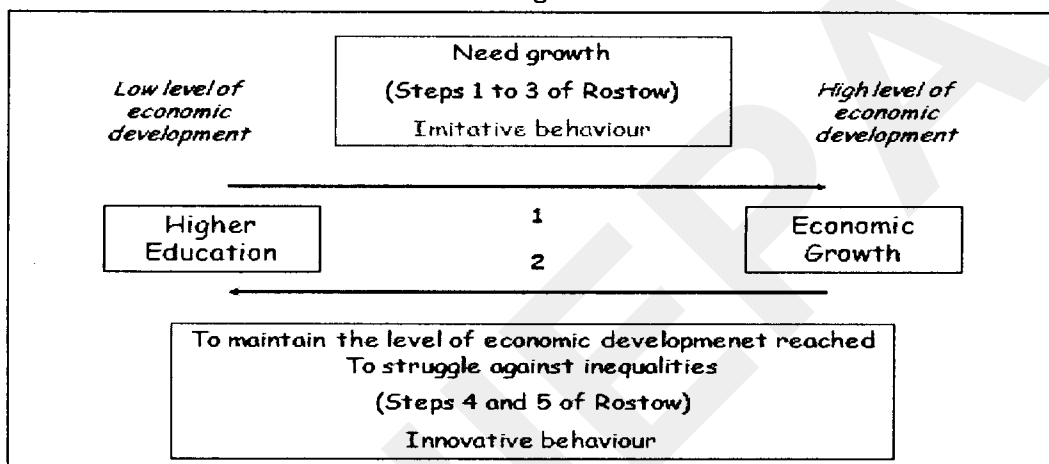
If we consider the infrastructure investment as a simple accompanying investment, the objective is to define the infrastructure required by the prospects of economic growth directly related to productive investments. In this case, the infrastructure investment follows the productive investment and it is modulated by the latter. Applied to higher education, this means to adapt the flow of the educational system to the foreseeable future demand of manpower of various types and with various qualifications as it is the case for Japan. These different results seem to confirm Aghion & Cohen's hypothesis (2003) which is the starting point of this study.

So, in the first stage, the "qualitative" side is favoured over the "quantitative" side, and in the second stage, the "quantitative" side helps "qualitative" expansion (Perroux, 1960). Indeed, Perroux distinguishes the growth (quantitative phenomenon) from the development (qualitative phenomenon), even if these two aspects are linked. Indeed, development explains growth on the one hand, and on the other hand, growth helps to explain development. So there would be a vicious circle between economy and higher education.

For the purpose of growth, countries will develop higher education in order to have economic growth (phenomenon number 1); it's a stage of verification of the theory of the human capital with countries which adopt imitative behaviour. Once they have reached a certain threshold of economic development, investment in higher education does not improve economic growth. Countries whose economic situation has evolved, will struggle against inequalities inside the country. This will have a repercussion on higher

education. Indeed, the level of economic development reached by the country implies a modification of higher education: thus the reverse phenomenon is observed because it's the level of economic growth which determines the development of higher education. Then, countries have an innovative behaviour (see Figure 3 below).

Figure 3



Following this, we propose a new model which takes into account the conjunction of the two phenomena. We assume that:

- the phenomenon number 1 always precedes the phenomenon number 2, that is to say that education is in a first time an engine for growth and then, economic growth becomes a condition for the education development;
- the duration of the phenomenon number 1 varies according to the country.

If we consider two variables representing respectively economic growth (ECO) and higher education (SUP), over a period $t \in [1 ; n]$, linked by a VAR model like those used in our analysis :

$$\begin{bmatrix} ECO_t \\ SUP_t \end{bmatrix} = [A_0] + \begin{bmatrix} A_1 & B_1 \\ C_1 & D_1 \end{bmatrix} \begin{bmatrix} ECO_{t-1} \\ SUP_{t-1} \end{bmatrix} + \begin{bmatrix} A_2 & B_2 \\ C_2 & D_2 \end{bmatrix} \begin{bmatrix} ECO_{t-2} \\ SUP_{t-2} \end{bmatrix} + \dots + \begin{bmatrix} A_p & B_p \\ C_p & D_p \end{bmatrix} \begin{bmatrix} ECO_{t-p} \\ SUP_{t-p} \end{bmatrix} + [\varepsilon_t]$$

The parameters of the model change according to the phenomenon observed:

- for $t \in [1 ; q]$, $B_i \neq 0$ and $C_i = 0$, $\forall i$; education causes economic growth ;
- for $t \in [q+1 ; n]$, $C_i \neq 0$ and $B_i = 0$, $\forall i$; economy i.e. growth causes education.

According to Rostow, the periods $[1 ; q]$ and $[q+1 ; n]$ seem to correspond to the various stages of economic growth. Indeed, the stages 1 to 3 of Rostow viz; Traditional society; Preparation to the take off; and Take off, correspond to the period $[1 ; q]$ during which the qualitative development is favourable to growth; the stages 4 and 5 viz.; Maturity; and Mass Consumption representing the period $[q+1 ; n]$, when the growth goes into service with development.

Thus, at the macroeconomic level, like at the microeconomic one (Jaoul, 2004), the influence of higher education on economic growth is not unilateral and it depends on various factors, especially, the level of economic development reached by the country.

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General Papers

- K. Balakesari**
Curbing Corruption in the Indian Railways 1
- Jyoti S. A. Bhatt**
Small and Medium Enterprises and Intellectual Property Rights 6

Case Studies

- Manoj T. Thomas**
NGOs and Grassroots Innovation in Natural Resource Management:
A Study of Six NGOs in Western India 14
- M. Surender Reddy and B. Lakshmi**
Improving Service Delivery for Better Outcomes:
A Case Study of Kerala 30

ASCI Lectures

- Duvvuri Subbarao**
Elephants Too Dance: The India Growth Story 42
- P. Chidambaram**
High Growth: What It Means, What It Entails 53

Book Reviews

STEPHANO PELLE *Understanding Emerging Markets: Building Business BRIC* by BRICK
Reviewed by **Hemnath H. Rao**. B.R. VIRMANI. *The Challenges of Indian Management*
Reviewed by **Kinnera Murthy**. GAUTAM RAJ JAIN and ATUL TANDAN *Shaping
Organizational Strategies: Future Perspectives, Concepts and Cases*. Reviewed by **Kinnera
Murthy**. KENNETH ABEWICKRAMA *Adventures in Management: A Saga of Management
in a Developing Country* Reviewed by **Rahul Bhimjani**. PETER G NORTHOUSE *Leadership:
Theory and Practice*. Reviewed by **Ravindra Nath Saxena**.

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Higher Education under WTO Regime An Indian Perspective

Mir M. Amin*

Abstract

Higher education under WTO regime is now considered a tradeable commodity. It has led towards the globalization, privatization and internationalization of higher education. The latest trends have been negotiated under WTO, about the General Agreement on Trade in Services (GATS), on the liberalization of services, including education services. In this context, developed countries have given a good and quick response to this move but India's response has been rather sluggish for a number of reasons. It is said that in 21st century, a country's success will be judged not by its political and military power or even its rate of economic growth, but by the advances it makes in the field of modern knowledge. In this backdrop, developing countries, including India, have a great challenge in the highly competitive world as their higher education system is not adequately equipped and developed as that of the developed ones. In the present scenario of 'service evolution', globalised Indian economy has a vast potential for exporting its education services, but as an education service provider at the global level, it needs to evolve a set of pragmatic strategies to give it a boost. India's success will depend on how rapidly it adapts to the changing environment. This paper provides a glimpse of general scenario of higher education in India besides providing a basic overview of GATS and in particular its provisions related to higher education. At the same time, it also highlights the various challenges and opportunities which arise as a result of GATS provisions.

Introduction

The main objective of education today is to make the citizens conscious towards social change and inject in them the value to follow the path of peace and progress. It is not to just make people literate but to develop the overall personality of individuals. With the transformation of Indian economy from agrarian to industrial one, education has acquired added importance. In the present globalised world, two most important commodities of a nation are information and knowledge. In order to gain the maximum advantage of these two commodities, a country needs to have a strong and competitive education system.

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Traditionally, education has been treated as a social service and welfare measure but in present times there is a paradigm shift in education from service to business education. GATS (General Agreement on Trade in Services) considers education as one of the twelve tradeable services. The goal of WTO and GATS in this regard is to guarantee market access to educational products and institutions of all kinds.

For the sake of convenience, the contents of this paper are divided into the following four parts:

- Part – I : Current Scenario of Higher Education in India;
- Part - II : Higher Education – A Comparative Analysis;
- Part - III : WTO and Higher Education; and
- Part – IV : Challenges and Opportunities of Higher Education under GATS.

The main thrust of this paper is on challenges and opportunities of higher education system in the emerging scenario. Some issues with suitable suggestive measures for the restructuring of Indian higher education in the light of global competitiveness, have also been covered.

Part – I

Current Scenario of Higher Education in India

India is still a developing country with a highly skewed distribution of income and wealth. It has over 27 crores of people yet below poverty line and having less than \$1 per day. The extent of disparity between rich and the poor is around 73:1 and about 34% of its population is illiterate with about 1/3 rd of world's illiterates residing in India. It has around 55 lakh highly educated and professionally skill-oriented people availing fully the benefits of economic progress of the country. Less than 10% of its boys and girls have received university education, which is much below that of other developing countries, like Egypt and Thailand. In the USA and other advanced countries, more than 70% students are getting the benefit of higher learning.

India is still lagging behind in competitive higher education in respect of advanced and many of the developing countries in the world. As a system, higher education in India is one of the largest systems in the world. However, considering the quantum and pattern of population, India seems to be backward as it comprises of only 6-7% students taking higher education in the relevant age groups, whereas this percentage is more than 60% in most of the advanced countries, and over 30% attained by middle income countries. Entry of new institutions might add to the supply of seats and thereby improve the rate of enrolment. The allocation of funds in India stood at about 3.5% against a desirable 6% of GDP. This allocation to higher education has declined substantially in the past years. With this situation, the question arises as to what would be the implications of higher education services under WTO regime. Would the largest section of the society, i.e., poor be able to take higher education with private or state assistance? Uptill now, supply of grant-in-aid by the government, mostly collection through the indirect taxes has created heavy burden on common man.

India has a broad base of higher education with a few, very sporadic peaks. We do have a few professional institutions and unitary universities that border on centres of excellence, but they are too few for a country of this size. India has, as of 2001-02 (according to UGC report), 213 universities and 52 deemed universities. This number is very small for the size of India and for meeting the emerging needs of advanced research. Besides this, most of the Indian universities are burdened with the academic administration of affiliated colleges. For instance, Andhra University has 405 affiliated colleges; Osmania University 390; and Anna University 232. The position is nearly the same in the case of most of the major affiliating universities. The duties of an affiliating university involve enormous administrative responsibilities which prove unproductive in academic terms.

Besides the acute paucity of funds, lack of autonomy and the burden of affiliation, the general universities suffer from the obsolete composition, powers and functions of the university authorities, like the Board of Management, the Academic Council and the Senate. In general, our higher education system riddled with from certain problems which are perceived as the road blocks to the effectiveness of the system, for example, heavy unproductive expenditure on maintenance, brain-drain, excessive standardization, over dependence on government funding, inadequate academia-industry (producer-user) interaction and collaboration, unnecessary political interference in day-to-day management, open-door admission policy in major courses in colleges, procedural delays in the process of renewal of the visa for students coming from abroad to attend different educational/training programmes, inadequate or mis-appropriation of government grants, uncommitted bureaucrats etc. These issues need to be addressed to make India a major player in the current scenario of globalization and internationalization of higher education.

In most of the advanced countries, universities and university-level institutions constitute strong centers of research. It is a universal phenomenon because universities alone have a continuous flow of young and fresh minds and an atmosphere highly conducive to talent and creative effort. Unfortunately, the share of higher education in research in India is pitifully low. This is reflected in the allocation of funds (as of 1998-99) for laboratories and research institutions: the Central sector 62.5%; the state sector 8.0%; the public sector 5%; the private sector 21.6% and higher educational institutions, mere 2.9%. The share of higher education must be at least 10.0%. It is a fact that institutions of higher learning are faced with lack of funds. But fortunately Indian government is taking a number of measures to make them more independent besides encouraging them to generate income from different sources. For example, most of the premier higher education institutions have initiated generating income by providing training to industrial employees, undertaking industry sponsored research projects, providing consultancy services to business organizations, launching endowment schemes, etc. Besides these measures, the budget allocations for higher education has over the years increased significantly. This is elaborately shown in Table 1.

TABLE I
Plan Expenditure on Different Sectors of Education as % of Total

Sector	(Rs. Crore)												
	First Plan 1951-56	Second Plan 1956-61	Third Plan 1961-66	Plan Holiday 1966-69	Fourth Plan 1969-74	Fifth Plan 1974-79	Sixth Plan 1980-85	Seventh Plan 1985-90	Exp. 1990-92	Eighth Plan 1992-97	Ninth Plan 1997-02 (Central Sector)	Ninth Plan. 1997-02 (Central Sector)	Tenth Plan Outlay 2002-07 (Central Sector)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Elementary Education	58 (870)	35 (950)	34 (2010)	24 (750)	50 (3743)	52 (5913)	32 (8414)	37 (28494)	37 (17290)	48 (103940)	66 (163696)	65.7 (145233)	65.6 (287500)
Secondary Education	5 (83)	19 (510)	18 (1030)	16 (530)	*	*	20 (5344)	24 (18315)	22 (10530)	24 (52311)	10 (26035)	10.5 (23227)	9.9 (43250)
Adult Education					2 (126)	2 (248)	6 (1533)	6 (4696)	9 (4160)	5 (11421)	...	2.4 (5204)	2.9 (12500)
Higher Education	8 (117)	18 (480)	15 (870)	24 (770)	25 (1883)	28 (3188)	21 (5604)	16 (12011)	12 (5880)	10 (20944)	10 (25000)	10.3 (22709)	9.5 (41765)
Others	15 (227)	10 (300)	12 (730)	11 (370)	13 (936)	9 (1071)	11 (2729)	3 (1980)	2 (1180)	3 (7398)	2 (4314)	1.6 (3492)	1.4 (6235)
Technical Education	14 (215)	18 (490)	21 (1250)	25 (810)	10 (786)	9 (1015)	10 (2563)	14 (10833)	17 (8230)	10 (21987)	9 (23735)	9.5 (21095)	10.7 (47000)
Total	100 (1512)	100 (2730)	100 (5890)	100 (3230)	100 (7474)	100 (11435)	100 (26187)	100 (76329)	100 (47270)	100 (218001)	100 (249084)	100 (220960)	100 (438250)

Source: Five-Year Plan Document, Planning Commission.
Analysis of Budget Expenditure, Ministry of HRD, GOI.
India - 2005, P.200

Notes: Figures in parenthesis are in million of rupees.
Figures in Col. 2 and Col. Includes the share of states/UTs.
* Included under elementary education

In the present scenario, we have to consider the quantum of manpower with higher education needed for achieving a developed-nation's status by 2020. The advanced countries are moving toward mass higher education. The following information about the proportion of the relevant age group (18- 23) entering higher education in some of the advanced countries may prove the point (2000): USA, 80%; Canada, 88%; Australia, 80%; Finland, 74%; and UK 52%. In average, the advanced countries have more than 50% of the relevant age group receiving university level education. India with nearly 300 universities and over 16,000 colleges has only about 7% of relevant age group entering the portals of universities. This number has to be increased to, if we are to become a developed nation, at least 25% by 2020. Governments by themselves will not be able to meet this need. Therefore, it is necessary to welcome and encourage the participation of the private sector but on a selective basis, with safeguards to ensure quality and easy access for the majority portion of our population.

Commercialisation of Education Services

India being a WTO member is committed to progressive liberalization of the education sector. The foreign universities consider India as a potential market with a large English speaking and affluent middle class society. Education is already a big business but the potential to spread its market will depend upon the competitiveness of institutions to utilize the untapped public education market. The trade in education service is a huge and potential growth area in today's economy. According to the European Commission, the GATS agreement is "first and foremost an instrument for the benefit of business". Therefore, it is a great opportunity for some of the premier institutes of India like IITs and IIMs to establish their branches in other countries and reap the benefits of liberalization of the market. The big question is whether the Indian universities are prepared to compete in a \$2.2 trillion education market in the world.

When we compare India with other education 'market leaders', such as the USA, the UK, Australia and Canada, India's existing capabilities as provider of 'international education' is rather limited. This is because the Indian universities were established many many years back and as such lack sufficient world-class infrastructure and facilities. The quality of education varies widely from one institution to another, especially in the professional courses. Many Indian universities do not have a flexible academic structure and the degrees from these universities will have lower value in the job market than the foreign universities. Moreover, their obsolete syllabi, lack of multidisplinary courses; teachers' apathy, excessive examination orientation, poor infrastructure, little research etc. are some of the other problems. Therefore, to make Indian education sector competitive and attractive, there is an urgent need for restructuring the whole education system, particularly higher education. The UGC's 'Promotion of Indian Higher Education Abroad' (PIHEAD) aimed at attracting foreign students, is a welcome step in this direction. Under this programme, a few of the 25 Indian universities selected for promoting Indian education abroad are: University of Hyderabad, Cochin University of Science and Technology, Delhi University, Madras University, Jamia Millia Islamia,

Symbiosis Society and Manipal Academy of Higher Education, a deemed university among others. The UGC Standing Committee Convenor for PIHEAD, Mr. Bhushan Patwardhan, opines that these institutions would be taken to premier education fares abroad for attracting students to India and will be allowed to set up campuses abroad. While considering the fact that India is the second largest provider of higher education, India should be able to exploit the possible markets all over the world. It is a great opportunity that India can establish institutions abroad targeting the places wherever the Indian Diaspora has the presence. India can also make use of its strength in traditional areas like ayurvedic medicines, arts and culture, yoga and English language. Here, it should be pointed out that some of the best management institutes in Asia (like IIMs and some of private institutes of excellence) are located in India.

Under the national treatment principle, it is stated that India cannot discriminate in case of policy matters between foreign institutes and Indian institutions. Therefore, India has to streamline its courses and syllabi in accordance with the international standards. Otherwise, it will be difficult for the Indian universities to attract students from abroad. Recently published UGC's "Model Act for Universities of the Twenty-First Century" recognizes the globalization of higher education and entry of foreign universities to the country as a reality and how to meet the challenges through re-orientation and better management of education system.

Part - II

Higher Education: A Comparative Analysis

There is no doubt that the British rule has had a wider impact on the Indian education system. The system of examinations, courses, affiliations and universities, all are remanent of the colonial era. In India, government is the principal provider of higher education. However, after the opening up of foreign education sector and after the liberalization of Indian economy in 1991, more and more students have started going abroad for higher education. They are welcome all over the world due to their abilities, knowledge and skill.

India is an emerging economy with the second largest higher education sector in the world with over 8.8 million students which constitute 7% of total population. The number of universities increased from 18 at the time of independence to 306 now (including 18 central universities and 186 state universities) under the government and about 150 private universities (most of them are in the state of Chhattisgarh). But when we compare it with foreign countries, the number is very small, considering India's size and population. Japan, a relatively small country, has 684 universities (including 512 private universities), the USA has 2,364 universities (including 1,752 as private universities), the UK has 104 universities and over 231 autonomous institutions, and Germany about 330 universities offering various courses. In the USA, the largest numbers of foreign students come from India followed by China, and for the third consecutive year, India is the leading country of origin for international students in the USA. The USA, the UK,

Germany, Australia and France are the leading exporters of educational services. The international education market has become fiercely competitive with different marketing strategies being implemented by educational institutions to attract the growing number of students seeking higher education (Arambewela and Hall, 2005). A study by the International Development Programme (IDP), Australia (2002), estimated that the international demand for higher education would grow to 7.2 million students by 2025, representing a 5.8% compound growth rate between 2000 and 2025. The details of such an estimate are given in Table 2. According to the estimate, over 70% demand for international higher education will come from China, India and other East-Asian and South-Asian countries and the demand from the USA and the European countries will slow down in the coming decades.

TABLE 2
Global Demand for International Higher Education ('000)

Region	2000	2005	2010	2015	2020	2025	Growth (%)*
Asia	759	1141	1761	2534	3598	5004	7.8
East Asia	453	698	1059	1565	2319	3389	8.4
South East Asia	148	185	265	356	467	586	8.7
South Asia	110	191	349	501	676	869	8.6
Central Asia	48	67	88	112	136	161	5.0
Africa	169	219	283	362	464	561	4.9
Sub-Sahara	99	127	168	222	295	371	5.4
North Africa	69	92	115	140	168	189	4.1
Middle East	113	143	182	229	286	327	4.3
America	146	167	194	225	260	287	2.7
Europe	568	635	719	804	879	963	2.1
Oceania	8	9	10	12	13	13	2.0
World (Total)	1763	2316	3149	4165	5500	7155	5.8

Source: Bohm, Davis, Meares and Pearce (2002), IDP, Australia.

* Annual Compound Growth Rate from 2000-2025.

India will have a close to 11 million students seeking higher education by 2011 and a sizeable number of them will look abroad for it. The Indian students' need to go abroad for higher education stems from the fact that they feel that the western markets offer better job opportunities with high pay packets and they are safe from the point of law and good quality of life. Also, what is attractive to an Indian is the global recognition for a foreign degree. At present, there are no foreign university campuses in India but nearly 27 franchisee institutions (mainly 10 from the UK and 12 from the US) are operating in the area of management and engineering. The UK based Wigan and Leigh, has established campuses in a number of Indian cities. The University of Illinois-Linked Quantum Institute has also opened its branch in New Delhi. The franchisee partners are not affiliated to any Indian university. Very few Indian institutions have used the

opportunity of liberalization of educational services under the GATS. The Birla Institute of Technology and Science, Pilani and Ranchi, have opened institutions in Dubai and Oman respectively. The Universal Group in Nepal, and the Central Institute for Languages, Hyderabad have opened centres in Kyrgyzstan. Also, IIM group is also planning to open their branches in Singapore. The IGNOU focuses on distance education and is planning to spread its operations to other countries in coming years.

Part - III

WTO and Higher Education

The General Agreement on Trade in Services (GATS), covered in the WTO and also a product of the Uruguay round, is legally enforceable agreement aimed at deregulating international markets in services, including education. The real crux of the GATS is the opening of services trade on par with goods trade. Education, being one of the largest services, was included in GATS in 1995. India's education system cannot be excluded from the entire ambit of GATS as education provided at different levels, particularly at higher education level, is not entirely free i.e. as there is some fee to be paid to get it.

Under GATS stipulation, services are classified by four modes of supply, which are:

Mode I: 'Cross Border Supply' which is defined as the supply of a service from the territory of one member into the territory of any other member;

Mode II: 'Consumption Abroad' which is defined as the supply of a service in the territory of one member to the service consumer of any other member;

Mode III: 'Commercial Presence' which is defined as the supply of a service by a service supplier of one member through commercial presence in the territory of any other member; and

Mode IV: 'Presence of Natural Persons' which is defined as a temporary cross border movement by a service supplier of one member through presence of natural persons of a member in the territory of any other member.

Applying the above four modes of supplying services contained in the GATS (Article 1.2) to education services, we can broadly define the scope of such services as under:

- Under **Cross Border Service (CBS)** mode, services are supplied across the borders without moving students and service providers. This mode includes distance education and programmes, online courses through the internet, educational testing services etc. It also includes sale of educational materials, books and CDs, service provided through satellite transmission and audio-video conferencing, which can cross national boundaries.
- Under the second mode, i.e. **Consumption Abroad**, students or consumers traveling from one country to another are included. Under this mode, India is one of the largest importers of education services; it sends students abroad to USA, UK, Australia and other countries. When students come to India from other countries for study purposes, it exports services.

- The **Commercial Presence** means the actual presence of an education provider through the establishment of offshore campuses or facilities or partnership agreement with institutions in the host country, for example, service of foreign universities starting courses in India.
- The **Presence or Movement of Natural Persons** means the movement of teachers or researchers traveling to another country in order to provide educational services to foreign students, for example, Indian teachers going abroad to teach in the universities/colleges located in another country.

Thus, higher education is defined as a private good on a global scale. The WTO has signalled an intention to develop a binding policy regime that will facilitate the unrestricted flow of educational services across borders.

For the purpose of negotiations under GATS, education is classified into five categories. These are:

1. *Primary Education Services:* These include services related to primary and pre-school education but exclude child day-care and adult literacy programmes.
2. *Secondary Education Services:* These cover high school, vocational education and technical training.
3. *Higher Education Services:* These include two areas. The first relates to teaching of practical skills (training) after 10+2 level and includes pre-degree, technical and vocational training institutes like polytechnics. The second category relates to conventional education provided by universities and colleges in the country, including professional institutes.
4. *Adult and Continuing Education Services:* These include adult learning and continuing education programmes in general and vocational subjects and also refresher and training programmes.
5. *Other Education Services:* These cover all other services not mentioned or defined above but ultimately fall under the purview of learning and training. These educational services under GATS and four modes of supply are described elaborately in Table 3 below.

The prospect and liberalization of the educational services in order to compete more efficiently and profitably in the global marketplace raises critical concerns about quality, affordability and more fundamentally the role of government to provide a quality public education system for the benefit of the society. Hence, before making any policy which affects the entire education system in the country, it should be debated properly among all the stakeholders, including the academicians, students, policymakers and society at large.

TABLE 3

Classification of Education Services under GATS and Four Modes of Supply

<i>Category of Education Service</i>	<i>Cross Border Supply</i>	<i>Consumption Abroad</i>	<i>Commercial Presence</i>	<i>Presence of Natural Persons</i>
Primary education		Children attending classes abroad(frontier towns)	Twinning arrangements	Teachers travelling to foreign country to teach
Secondary education		Students attending summer school/language courses etc. abroad	Twinning arrangements	Teachers travelling to foreign country to teach
Higher education	E-education: Virtual Universities	Students studying in another country	Branch or satellite campus: franchising, twinning arrangements	Teachers travelling to foreign country to teach
Adult education	Intentionally providing language schools	Attending classes abroad	Branch or satellite school, franchising: twinning arrangements	Teachers travelling to foreign country to teach
Other education				Teachers travelling to foreign country to teach

The possible options which could be considered for formulating a national policy and commitments in the GATS negotiations are:

- India should analyse the possible opportunities available under different modes of services.
- The strength and weakness and competitiveness of Indian institutions and sectors should be taken into consideration.
- Also the consideration of socio-economic and sovereignty functions of the country should be protected.

Part - IV

Challenges and Opportunities of Higher Education under GATS

Higher education is witnessing significant transformations all over the world. The WTO regime under GATS poses a challenge for higher education in India. Under all modes of GATS, India has both import and export interests in education services. It has private presence in education services, which co-exist and compete with public educational institutions, so to carve out clause for public services need not apply. GATS provides means to gain predictable and transparent market access conditions overseas to expand exports of education services. GATS commitments could be used to facilitate participation by foreign institutions in India and increase supply of higher education to alleviate supply constraints and declining public funds. However, the following issues need serious considerations:

- Should India schedule education services and make commitments in this sector?
- If it does commit, then what kinds of commitments and what kinds of domestic regulatory reforms would be required to ensure that the national policy objectives are not undermined?
- What kind of regulatory challenges are posed by the GATS in education services?
- Should India pro-actively seek market access in education services by making requests in future and in what areas?

There are both advantages and disadvantages of international trade in higher education. For example, exports via *Consumption Abroad* could help generate resources, create employment, expand facilities and raise standard in the education sector. But it can also put strain on already scarce financial resources allocated for higher education. Similarly, export of education through outflow of teachers and trainers could generate foreign exchange and remittances for the country but if permanent, could aggravate the existing shortage of human capital and drive down the quality of education services on the domestic front. Besides, exports in general may also raise the cost of education services to the detriment of the poorer section of the population. In addition to this, there are numbers of factors by which export of education is constrained. These factors need to be paid a serious consideration:

1. Inadequate infrastructure and campus facilities;
2. Divergence of standards within the country;
3. Resource and capacity limitations;
4. Lack of certification, recognition and equivalence;
5. Restrictive immigration and labour market policies;
6. Obsolete and outdated technology;
7. Lack of marketing and targeting of niche markets etc.

Similarly, import of education (e.g. via Commercial Presence) can help augment resources for investment and expansion of facilities in education sector. However, the entry of foreign operators without any control will put public as well as private sectors in a disadvantageous position. It is often said that, “if you want to destroy a country, destroy its education system”. The foreign education providers coming to India for capital investment in the sector will be looking for business and profit. The quality of education provided by the foreign institutions will be costly and can be affordable only by the elite class of the society. This may lead to categorization of students which is harmful for the social set up of the country in the long run and may also lead to ‘dualism’ in education sector where a private corporate segment would cater to the needs of the affluent and will provide quality and standard education, and a public segment, catering to the needs of the lower and middle income groups. However, this ‘dualism’ can be mitigated to some extent by conscious and strategic policy planning.

What Needs to be Done?

To conclude, we can say that the Indian education sector is not yet fully geared up to actively participate in the export of higher education. To reap the benefits of this sector and to make this sector more competitive, there is an urgent need for the existing centres of higher education to undergo revamping and restructuring and face the consequential change as a corollary in a competitive world. We must try to emulate the achievements of Australia which has internationalized its higher education at a fast rate and is likely to emerge as a leader in this area. In India, market dynamics should determine the survival of institutions and programmes. Market dynamics can be promoted by ushering in intense global competition and government policies, incentives and regulations. Higher education centres in India are to grow up and should gain competitive advantage in original thinking, idea generation and educational management in the global scenario. All stakeholders in India (including govt) and abroad also should be vital players in nurturing excellent internationalization (privatization) of higher education in order to reap its full benefits.

Taking an overall view of India’s situation, the following are some of the strategies that may be considered for making the Indian commitment in GATS and for making India’s educational system competitive which could prove a driving force to give momentum to the India’s international trade in educational services:

- Setting up of a statutory ‘National Education Regulatory Authority (NERA)’. It should regulate the operations of registering foreign universities in India and promote Indian higher education abroad.
- In order to have an international context in education, the course content should focus on requirements of job market and should have provision for innovative and flexible programmes.
- A separate programme should be launched to improve and upgrade selective universities and make these globally competitive.

- Before profitability, quality and accessibility of higher education must be prioritized.
- India should develop a strong communication and technology network for CBS of education through e-learning route. This can be initiated through well-known open universities like IGNOU and others.
- India should ask for gradual liberalization and insist for a transitional period, say of five years, so that Indian institutions are upgraded to global level.
- For a smooth transition, more and more exchange programmes should be encouraged.
- The foreign providers should be permitted only if they can conform to the norms of regulators like UGC, AICTE, Distance Education Council (DEC), Indian Nursing Council (INC), Indian Bar Council (IBC) etc.
- There should be unification of regulators and regulations in the country and for this purpose NERA should be given adequate authority.
- The franchising of foreign institutions to the Indian counterparts should not be allowed to operate from rented buildings and without required permission from the concerned statutory bodies.
- India should formulate a realistic national education policy in view of GATS implementation. Also, a clear policy for private education sector is a necessity.
- A national fund like 'National Fund for Education' should be set up so that it can be used for the upgradation of the selected universities and institutions and the underprivileged can make use of such fund for pursuing their higher education;
- Adequate funding facilities should be provided to five universities that are already identified by government as institutions with potential for excellence. This number must be gradually increased to fifty or more.
- There is an urgent need to establish 'Education Development Bank' for the less privileged sections of the society. A 'Cell' for looking after internationalization of higher education, both for import and export, should be set up.
- Efforts should be made to develop collaborations with underdeveloped countries through UNESCO, UNDP, World Bank etc. for exporting educational services (including research in tribal and rural development studies) to such underdeveloped countries.
- Efforts should be made to make institution–user interaction possible. The educational administrators as well as faculty members should interact quite frequently with the executive in user organizations through the faculty, seminars/symposiums in collaboration with the user's organizations.

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Facilities in Primary and Upper Primary Schools in India

An Analysis of DISE Data of Selected Major States

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Abstract

The priority in the field of education in India at present is on universal elementary education. It is, therefore, necessary to make provisions for primary and upper schooling facilities in every nook and corner of the country. It may be kept in view that provision does not only mean opening schools everywhere but it also means providing all basic facilities in the schools. It is in this context that this paper examines the position of basic facilities provided in the primary and upper primary schools in various states of India. It may be noted that data on facilities in schools are collected through All India Educational Surveys conducted by NCERT occasionally. Yet another source of data on this aspect is the District Information System of Education (DISE) which provides data in its district and state report cards annually. This paper uses DISE data mainly taken from the DISE Analytical Report 2004, published in 2005.

The paper analyses data pertaining to basic facilities in primary and upper primary schools such as availability of buildings, number of classrooms, single classroom and single-teacher schools, availability of basic facilities like black board, drinking water, playground, boundary walls, common toilets, girls' toilets, computers in schools, book banks, ramps in schools and the provision of medical checkup in schools.

The analysis of data reveals that many schools in the country are still not equipped with many of basic facilities. So much so that about 4 percent primary schools and 12 percent upper primary schools do not have a building. Further, only 70 percent primary schools and 63 percent upper primary schools have pucca buildings. There are 17.5 percent primary schools and 7.7 percent upper primary schools in the country that have only one teacher. It is a matter of serious concern that about 9 to 10 percent primary and upper primary schools do not have even blackboards. One-fourth primary schools and one-fifth upper primary schools do not have the provision of drinking water. Playground and

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boundary walls are not available in more than half of the primary schools and more than one-fourth of the upper primary schools in the country. Common toilets and girls' toilets are missing in more than 63 percent primary schools and 75 percent upper primary schools. Common toilets are not available in more than half and girls' toilets in more than two-thirds of the upper primary schools. More than 80 percent primary and upper primary schools do not have electricity connection and more than 93 percent primary and upper primary schools in the country do not have computers. These data show the position of availability of basic facilities in primary and upper primary schools in the country. Moreover, one notes that there are lots of inter-state variations in the provision of these facilities. These have been highlighted in the paper in greater details.

Introduction

In India education has been accorded much importance since independence as it has been perceived that educational development is necessary to ensure economic and over all development of the country. In order to develop human resources in a better way it is important that education is imparted to all sections of population in the country. This is the reason that plans were developed for the expansion of educational facilities across the country so that all people can have opportunity of participating in education irrespective of one's caste, class, sex, religion or region. However, despite these provisions, it has been noticed that the spread of education is not uniform and there are disparities of all kinds in this field. These include gender disparities (i.e. male-female disparities), regional disparities (inter-state, inter-district disparities), social disparities (disparities between SC, ST and other sections) and spatial disparities (rural-urban disparities).

The country has made tremendous progress during last 50 years after independence in expanding the education system. The number of schools, teachers, enrolment, have all increased many-fold during this period of planned development. But unfortunately, this expansion has not been even and some areas lag behind the others in terms of even basic facilities of education. This is not only true for higher, technical or professional education but is true even for school education. It is so much so that provisions of basic and elementary education facilities are not uniformly distributed in the country. It is a serious concern that the provisions for schooling could not be universalized so far in India.

If we look at the availability of primary and upper primary schools, it may be found that access in terms of availability of schools is not a major issue now. This is because more than 90 percent habitations have already got schools within reasonable distance. But real problem is observed when we look at the facilities provided to these primary and upper primary schools/sections functioning in various localities. Whether it is the availability of building or teachers or infrastructure or even basic facilities in schools we find that there are all kinds of schools functioning in the country, some of which could be clubbed among the best schools in the world, while others among the worst even in the under-developed countries.

In order to universalize primary or elementary education, which has been mandated right from independence and is also a Constitutional directive, therefore, it is necessary to provide schools everywhere and also along with all necessary facilities to all the schools. This is because schools without proper infrastructure and facilities, can be ill-equipped schools, and not be in a position to impart education properly and the quality of education in such schools will be poor. One can never expect to have good quality of education in schools that do not have appropriate building, infrastructure and other basic facilities.

This paper looks at the situation of basic facilities provided in the primary and upper schools in various states in the country and analyses state-wise data on these aspects. It may be noted that generally the data on school facilities are provided in the All India Educational Surveys conducted by National Council of Educational Research and Training (NCERT) on occasional basis. However, the District Information System of Education (DISE) is another source of data on this aspect. In the present paper the data have been used from the DISE only and taken from the document titled "DISE Analytical Report 2004". It would be relevant to briefly explain here about the concept and development of the District Information System of Education (DISE).

District Information System of Education (DISE)

At the time of initiating DPEP in 1994, it was felt that a sound information system is essential for successful implementation and monitoring of the programme. It was also felt that an innovative model is required in order to strengthen the database for planning and management in a decentralized framework. It was realized that DPEP, with a focus on decentralized planning, requires school level information, which is up-to-date, reliable and is available soon after its collection. The Ministry of Human Resource Development, Government of India, as a part of the DPEP national endeavor, decided to design and develop a school-based computerized information system. The responsibility for developing such a system was assigned to the National Institute of Educational Planning and Administration (NIEPA), New Delhi.

NIEPA designed the software for implementation at the district level and provided the necessary technical and professional support to DPEP districts. The first version of the software, named as District Information System of Education (DISE) was released in 1995. The district level professionals were assisted and trained in the establishment of EMIS units. The DISE data collected from schools and computerized at the district level are disseminated up to the school level in various ways. The first major review of DISE was undertaken in 1997-98. When Sarva Shiksha Abhiyan (SSA) was launched, the DISE software was redesigned to cater to the needs and requirements as perceived in the SSA programme.

The DISE Analytical Report 2004 covers 539 districts from 24 states and one union territory of the country. But the coverage in terms of number of districts in state is not total in the case of Haryana. In rest of the 23 states and one union territory, data from all the districts have been collected and given in the report. These 23 states that have been fully covered in terms of districts are : Andhra Pradesh, Assam, Bihar, Chhattisgarh,

Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal.

Table 1 presents the coverage of DISE 2004 as reported in the Analytical Report. It presents state-wise data on number of districts in 2001, number of districts covered under DPEP and number of districts which reported data that have been included in the DISE report cards.

TABLE 1
DISE 2004: Coverage

<i>S. No.</i>	<i>State / UT</i>	<i>No. of Districts (2001 Census)</i>	<i>Districts Covered Under DPEP</i>	<i>No. of Districts Reported Data</i>
1	Andhra Pradesh	23	19	23
2	Assam	23	9	23
3	Bihar	37	20	37
4	Chandigarh	01	-	01
5	Chhattisgarh	16	15	16
6	Gujarat	25	5	25
7	Haryana+	19	7	17
8	Himachal Pradesh	12	4	12
9	Jharkhand	18	7	22*
10	Karnataka	27	17	27
11	Kerala	14	6	14
12	Madhya Pradesh	45	33	45
13	Maharashtra	35	11	35
14	Meghalaya	07	-	07
15	Mizoram	08	-	08
16	Nagaland	08	-	08
17	Orissa	30	8	30
18	Punjab	17	-	17
19	Rajasthan	32	10	32
20	Sikkim	04	-	04
21	Tamil Nadu	30	7	29**
22	Tripura	04	-	04
23	Uttar Pradesh	70	54	70
24	Uttaranchal	13	6	13
25	West Bengal	18	10	20*
	Total Districts	535	248	539

Source : DISE Analytical Report 2004.

+ Data from all districts not reported.

* Including bifurcated districts.

** One district was later merged with another district.

The paper analyses data on school facilities, including type of school building, number of classrooms, single-classroom and single-teacher schools, schools having blackboard, drinking water, playground, boundary wall, common toilets, girls' toilets, electricity, ramps, book bank, arrangement of medical check-up and provision of computers in the primary and upper primary schools. The detailed analysis has been carried out for exclusive primary (i.e. schools having only primary sections) and exclusive upper primary (i.e. schools having only upper primary sections) schools.

Category of Schools in the States

As far as schools are concerned there are various categories of schools in the country. Table 2 presents the number of schools in the 17 states and the percentage of schools coming under various categories in these states.

TABLE 2
Percentage of Schools by Category (2003-04)

<i>State</i>	<i>Total Number of Schools</i>	<i>% Schools having only Primary Section</i>	<i>% Schools having Primary with Upper Primary</i>	<i>% Schools having Primary with U.P., Sec. and H.S.</i>	<i>% School having only Upper Primary Section</i>	<i>% Schools having U.P. With Sec. & H.S.</i>	<i>No Res-ponse</i>
Andhra Pradesh	84579	68.44	16.39	3.83	0.35	8.02	2.97
Assam	39459	75.90	2.42	0.08	18.04	3.56	0.01
Bihar	52202	77.88	17.59	0.98	0.75	2.04	0.78
Chhattisgarh	35448	73.71	4.57	1.84	14.97	2.74	2.17
Gujarat	34786	34.00	61.51	1.28	1.02	0.44	1.76
Himachal Pradesh	14964	73.60	1.42	2.53	12.06	10.39	0.00
Jharkhand	22010	77.87	19.26	0.99	0.28	1.20	0.39
Karnataka	51546	49.98	45.69	1.72	0.93	0.77	0.91
Kerala	11988	54.76	18.91	6.14	5.56	12.73	1.90
Madhya Pradesh	86327	63.34	17.35	2.84	14.39	1.24	0.84
Maharashtra	77381	54.35	30.47	2.79	0.17	11.85	0.37
Orissa	49063	72.94	15.63	0.90	8.06	1.27	1.19
Rajasthan	78158	67.31	22.07	2.97	0.97	4.05	2.63
Tamil Nadu	45952	69.12	13.79	5.38	0.14	11.34	0.23
Uttar Pradesh	134225	79.74	2.47	0.28	16.47	0.81	0.23
Uttaranchal	17471	70.71	2.81	0.65	14.28	4.73	6.82
West Bengal	59556	82.70	0.75	0.84	3.14	11.07	1.50
India	931471	68.44	16.44	2.10	6.85	4.91	1.28

Source: DISE Analytical Report 2004.

The data presented in the above table shows that in the country there were more than 9.3 lakh schools, out of which more than 68 percent are primary schools i.e. the schools having only primary section. Further, 16.44 percent schools have primary and upper

primary sections. The table reveals that about 87 percent of the total schools have primary sections and about 30.3 percent schools have upper primary sections.

Out of the above mentioned 17 states, as many as 10 states have more than 68.44 percent schools having only primary section which is the percentage of exclusive primary schools in the country. However, the percentage of exclusive primary schools is highest in West Bengal (82.70 percent) and lowest in Gujarat (34 percent)). Further, Gujarat has the highest percentage (61.51) of schools having primary and upper primary sections while this percentage is lowest in West Bengal (0.75 percent) and Himachal Pradesh (1.42 percent). Kerala has highest percentage (6.14) of integrated schools (i.e. schools having primary, upper primary, secondary and HS sections), while Assam has the lowest percentage (0.08) of such schools.

The percentage of schools having only upper primary section is highest in Assam (18.04 percent), followed by Uttar Pradesh (16.47 percent) and Chhattisgarh (14.97 percent). However, such exclusive upper primary schools are less than 1 percent in states like Andhra Pradesh, Bihar, Jharkhand, Karnataka, Maharashtra, Rajasthan and Tamil Nadu.

States like Himachal Pradesh (10.39 percent), Kerala (12.73 percent), Maharashtra (11.85 percent), Tamil Nadu (11.34 percent) and West Bengal (11.07 percent) have sizeable proportion of schools having upper primary, secondary and HS sections. But schools coming under this category are even less than 1 percent in Gujarat, Karnataka and Uttar Pradesh.

It may, therefore, be inferred that in the country more than two-thirds of the total schools are exclusive primary schools, whereas exclusive upper primary schools are less than 7 percent. There are states like Uttar Pradesh and West Bengal where exclusive primary schools are about or more than 80 percent of the total schools in the state. In Gujarat hardly one-third and in Karnataka only half of the total schools are exclusive primary schools. Exclusive upper primary schools are more than 18 percent of the total schools in Assam whereas in a few states (Andhra Pradesh, Bihar, Jharkhand, Karnataka, Maharashtra, Rajasthan and Tamil Nadu), these schools are less than even 1 percent of the total schools.

Availability of Building in Schools

Access to elementary education does not only mean the availability of schools but it also means availability of basic facilities in the primary and upper primary schools and the first and foremost important facility in this regard is the building. We cannot imagine any schools without building, a building in proper and usable condition having enough space. However, unfortunately in India there are still some schools running without building and they are found in almost all states of the country.

Tables 3 and 4 present data on the availability of building in the primary and upper primary schools in the selected 17 states of the country. Table 3 shows the percentage of primary schools having various types of building and also the percentage of primary schools that do not have building.

TABLE 3
Percentage of Schools (Having Primary Section only) by Type of Building, 2003-04

State	Pucca	Partially Pucca	Kuccha	Tent	Multiple Type	No Building	No Response
Andhra Pradesh	73.03	4.16	1.31	0.39	7.05	9.33	4.73
Assam	34.75	44.55	11.64	0.42	4.12	0.75	3.76
Bihar	71.76	7.30	0.89	0.05	10.13	7.23	2.64
Chhattisgarh	55.46	23.01	2.55	0.20	8.70	7.85	2.23
Gujarat	74.56	13.05	0.48	0.08	4.95	3.87	3.02
Himachal Pradesh	61.45	8.58	7.41	0.01	20.57	1.01	0.96
Jharkhand	82.38	3.02	1.96	0.06	5.25	4.46	2.88
Karnataka	83.71	3.70	0.80	0.59	6.37	4.02	0.81
Kerala	74.69	2.75	0.14	0.09	21.45	0.05	0.83
Madhya Pradesh	66.22	11.38	1.72	0.09	3.81	6.32	10.45
Maharashtra	83.24	7.59	0.95	0.11	6.10	1.05	0.96
Orissa	32.01	27.16	1.76	0.08	35.28	2.73	0.97
Rajasthan	73.03	0.82	0.56	0.21	1.24	11.20	12.95
Tamil Nadu	50.34	19.86	1.44	0.04	27.67	0.00	0.65
Uttar Pradesh	96.14	1.37	0.24	0.04	0.83	1.18	0.21
Uttaranchal	86.57	5.62	0.69	0.13	2.21	1.94	2.85
West Bengal	62.57	18.64	4.35	0.12	12.58	0.91	0.83
India	70.62	11.19	2.20	0.16	8.40	4.04	3.40

Source: DISE Analytical Report 2004.

The data presented in the above table reveal that 4.04 percent of the total primary schools in the country are running without building. But if we look at the position of building-less primary schools in various states, we find that percentage of such schools is negligible in Kerala (0.05 percent) and Tamil Nadu (0.00 percent). The position is worst in Rajasthan and Andhra Pradesh where 11.20 percent and 9.33 percent schools are without building, respectively. The other states where considerable percentage of primary schools does not have building are Bihar, Chhattisgarh, Jharkhand and Madhya Pradesh. In these states more than 4.04 percent primary schools are building-less, which is the national average.

As far as the type of school buildings is concerned, all the schools need to have pucca building so that it can be used in all seasons. The data show that more than two-thirds (70.62 percent) of primary schools have pucca building in India. However, of the 17 states for which data is presented here, 10 states have more than 70 percent primary schools that have pucca building. These states are Andhra Pradesh, Bihar, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Rajasthan, Uttar Pradesh and Uttaranchal. It is surprising to note that Uttar Pradesh, which is an educationally backward state, has the highest percentage of primary schools (96.14 percent) with pucca building. As against

this, Orissa has the lowest percentage (32.01 percent) of primary schools having pucca building, followed by Assam (34.75 percent).

About 11.19 percent primary schools in the country have partially pucca building. This percentage is highest in Assam where about 44.55 percent primary schools have partially pucca building. In Orissa 27.16 percent schools have such building, Chhattisgarh 23.01 percent, Tamil Nadu 19.86 percent, West Bengal 18.64 percent and Gujarat 13.05 percent.

Considerable percentage of primary schools (2.20 percent) in India have only kuccha buildings which are generally less durable and can hardly be used in extreme climatic conditions. Assam has the highest percentage of such schools (11.64 percent), followed by Himachal Pradesh (7.41 percent). In a few states like Bihar, Gujarat, Karnataka, Kerala, Rajasthan, Maharashtra, Uttar Pradesh and Uttaranchal, not even one percent primary schools have kuccha buildings.

Many schools in the country are reported to have multiple types of buildings. As against 8.40 percent of such primary schools in India, the multiple-type building schools are 35.28 percent in Orissa, 27.67 percent in Tamil Nadu, 21.45 percent in Kerala, 20.57 percent in Himachal Pradesh, 12.58 percent in West Bengal and 10.13 percent in Bihar. In rest of the 11 states, the primary schools having multiple-type of building are less than 10 percent.

From the data presented in the Table 3, it can be inferred that as far as the availability of primary school buildings is concerned, out of the 17 states that have been covered the position is best in Uttar Pradesh and Uttaranchal while it is worst in Assam.

Table 4 given below presents data on the availability of various types of buildings in upper primary schools in the country as well as in various selected states.

The data presented in the table shows that in the country about 12 percent exclusive upper primary schools do not have a building. It is matter of concern that building-less upper primary schools are more than that of primary schools in terms of percentage. However, the state-wise position shows a lot of variations. It is heartening to note that Kerala, Maharashtra and Tamil Nadu have no upper primary schools without building. On the other hand, there are states like Madhya Pradesh (39.79 percent), Chhattisgarh (23.47 percent) and Himachal Pradesh (15.90 percent) where the percentage of building-less upper primary schools is more than the national average.

Only about 62.81 percent upper primary schools in the country have pucca building. It ranges from as high as 94.07 percent in Uttar Pradesh to as low as only 21.47 percent in Assam. It is heartening to note that in educationally backward states like Uttar Pradesh and Rajasthan, more than 85 percent upper primary schools have pucca building, while it is relatively low in educationally advanced states like Kerala (68.24 percent), Karnataka (82.50 percent) and Himachal Pradesh (57.59 percent). There are 3 states where considerable proportion of upper primary schools has kuccha buildings and these states are Orissa (8.48 percent), Himachal Pradesh (7.76 percent) and Tamil Nadu (7.94 percent). On the other hand, Kerala, Gujarat and Rajasthan do not have any upper

primary schools having kuccha building while in Uttar Pradesh (0.08 percent) and Uttaranchal (0.04 percent) such schools are almost negligible.

TABLE 4
Percentage of Schools Having Upper Primary Section Only
by Type of Building 2003-04

State	Pucca	Partially Pucca	Kuccha	Tent	Multiple Type	No Building	No Response
Andhra Pradesh	68.14	4.07	1.36	0.34	14.58	2.35	9.18
Assam	21.47	47.93	2.43	0.52	5.77	1.22	2.66
Bihar	48.55	15.04	2.90	0.00	27.70	1.85	3.95
Chhattisgarh	51.74	14.08	1.00	0.13	5.97	23.47	3.61
Gujarat	94.65	3.10	0.00	0.00	0.56	0.28	1.41
Himachal Pradesh	57.59	7.48	7.76	0.00	7.71	15.90	3.56
Jharkhand	69.35	0.00	3.23	0.00	20.97	3.23	3.22
Karnataka	82.50	4.79	0.83	0.42	8.96	0.63	1.87
Kerala	68.24	1.53	0.00	0.00	29.31	0.00	0.92
Madhya Pradesh	41.18	6.81	0.85	0.21	1.97	39.79	9.18
Maharashtra	77.78	5.19	1.48	0.74	8.15	0.00	6.67
Orissa	35.54	33.29	8.48	0.13	19.22	2.98	0.36
Rajasthan	85.45	0.53	0.00	0.13	3.44	1.32	9.13
Tamil Nadu	41.27	17.46	7.94	0.00	33.33	0.00	0.00
Uttar Pradesh	94.07	1.31	0.08	0.04	1.60	2.57	0.33
Uttaranchal	79.00	4.62	0.52	0.52	1.65	10.02	3.67
West Bengal	54.91	10.90	4.03	0.16	27.43	1.18	1.40
India	62.81	13.03	3.84	0.18	5.14	11.87	3.13

Source: DISE Analytical Report 2004.

Within the school buildings, it is necessary to have sufficient number of rooms for organizing classes for teaching learning. The Operation Blackboard (OB) scheme implemented by the Government of India after the NPE 1986 resolved that all primary schools should have at least two teachers and a building having two rooms and verandah. Funds were released from the Central Government to implement this scheme all over the country. However, as discussed above, even after more than one and a half decades of the implementation of OB scheme, still there are schools in almost all states that do not have building of their own.

Table 5 presents the percentage of primary schools having 2 or more rooms and upper primary schools having 3 or more rooms in the states that have been covered in this study.

As mentioned above after the implementation of the Operation Blackboard scheme, no primary school is expected to have less than two rooms. But the data presented in the table show that in India only 76.92 percent primary schools have 2 or more rooms which means that about 23 percent primary schools have less than two rooms which may include building-less schools also. However, it may be noted that there are states like Kerala (97.29 percent), Uttar Pradesh (96.31 percent), Uttaranchal (91.82 percent) and Gujarat (91.34 percent) where more than 90 percent primary schools have 2 or more rooms. In some states, the percentage of primary schools having 2 or more rooms is as low as 30.33 percent (in Assam) and 51.08 percent (in Andhra Pradesh).

TABLE 5
Percentage of Schools by Number of Classrooms (2003-04)

S. No.	State	Primary Schools (having Primary Section only) Having 2 or More Rooms	Upper Primary Schools (having Upper Primary Section only) Having 3 or More Rooms
1	Andhra Pradesh	51.08	74.16
2	Assam	30.33	73.23
3	Bihar	74.42	69.40
4	Chhattisgarh	82.66	62.98
5	Gujarat	78.00	91.26
6	Himachal Pradesh	91.34	44.93
7	Jharkhand	84.50	75.81
8	Karnataka	70.54	82.08
9	Kerala	97.29	97.59
10	Madhya Pradesh	74.29	38.02
11	Maharashtra	78.51	85.93
12	Orissa	86.02	13.79
13	Rajasthan	73.37	81.35
14	Tamil Nadu	86.66	85.71
15	Uttar Pradesh	96.31	91.28
16	Uttaranchal	91.82	82.28
17	West Bengal	73.18	92.78
	India	76.92	69.21

Source: DISE Analytical Report 2004.

As far as upper primary schools are concerned, only 69.21 percent schools have 3 or more rooms. It means that about 31 percent upper primary schools have less than 3 rooms, including the building-less schools. In this regard, the state-wise analysis shows that in Gujarat, Kerala, Uttar Pradesh and West Bengal, more than 90 percent upper primary schools have 3 or more rooms, but in Orissa (13.79 percent), the situation is not

satisfactory. In another two states, namely Madhya Pradesh (38.02 percent) and Himachal Pradesh (44.93 percent) the position also seems to be bad.

Single-Classroom and Single-Teacher Schools

Table 6 below presents data on the single-classroom and single-teacher primary and upper primary schools in the states covered in the study.

TABLE 6
Percentage of Single-Classroom and Single-Teacher Schools (2003-04)

S. No.	State	Single-Classroom Primary Schools	Single-Teacher Primary Schools	Single-Classroom Upper Primary Schools	Single-Teacher Upper Primary Schools
1	Andhra Pradesh	35.50	15.71	8.78	4.70
2	Assam	62.72	15.72	16.10	0.32
3	Bihar	15.53	15.74	2.74	2.11
4	Chhattisgarh	7.21	20.74	16.31	5.54
5	Gujarat	15.34	9.99	4.23	5.63
6	Himachal Pradesh	6.55	13.59	9.97	1.44
7	Jharkhand	7.59	33.24	22.58	11.29
8	Karnataka	25.95	20.09	11.88	1.67
9	Kerala	1.61	0.08	2.25	0.00
10	Madhya Pradesh	9.39	13.42	9.20	9.67
11	Maharashtra	21.06	16.45	7.41	2.22
12	Orissa	10.24	19.10	14.06	3.72
13	Rajasthan	4.53	38.61	5.16	2.78
14	Tamil Nadu	13.98	10.85	11.11	0.00
15	Uttar Pradesh	2.36	16.08	16.48	13.39
16	Uttaranchal	3.15	23.10	2.93	2.29
17	West Bengal	20.96	8.25	45.59	0.64
	India	15.87	17.51	14.34	7.72

Source: DISE Analytical Report 2004.

There are 15.87 percent single-classroom and 17.51 percent single-teacher primary schools in the country. The state-wise analysis of single-classroom schools reveals that Assam is the worst state where as high as 62.72 percent primary schools have a single classroom. The other states, where sizeable single-classroom schools exist, are Andhra Pradesh, Karnataka, Maharashtra and West Bengal where 35.50 percent, 25.95 percent, 21.06 percent and 20.96 percent primary schools respectively have only one classroom. Kerala has lowest percentage (1.61 only) of single-classroom primary schools followed by Uttar Pradesh (2.36 percent) and Uttaranchal (3.15 percent).

According to the data, at the national level 17.51 percent primary schools are single-teacher schools. However, there are wide variations across states in this regard. On the one hand, there are states like Jharkhand and Rajasthan where more than 30 percent primary schools are single-teacher schools, and states like Kerala where single-teacher primary schools are even less than one percent of the total primary schools. In Gujarat and West Bengal the percentage of single-teacher primary schools is less than 10.

It is surprising to note that single-classroom upper primary schools are also as high as 14.34 percent in the country. It clearly shows that the position in upper primary schools is no better when compared to primary schools. Further, out of the 17 states for which the data is presented here as many as 5 states have more than 15 percent single classroom upper primary schools. These states are Assam, Chhattisgarh, Jharkhand, Uttar Pradesh and West Bengal. However, Kerala has only 2.25 percent single-classroom upper primary schools, which is lowest in the country.

The table further reveals that even 7.72 percent upper primary schools are single-teacher schools in the country. It is a matter of great concern that in some states, like Jharkhand and Uttar Pradesh, more than 10 percent upper primary schools, have only one teacher. As against these states, in states like Assam, Kerala, Tamil Nadu and West Bengal, there are hardly any upper primary schools that have only one teacher.

Facilities in Primary and Upper Primary Schools

Apart from proper and sufficient building that can be used in all weathers the schools need to have some basic facilities also. Data on such basic facilities in primary and upper primary schools of the selected states is presented.

Primary Schools

The primary schools need to have certain basic facilities. The Operation Blackboard scheme, implemented by the Government of India after the National Policy on Education (1986), was aimed at making sure that all primary schools of the country are able to get these basic facilities. Table 7 presents data for 17 states for primary schools having only primary sections, that is, exclusive or stand-alone primary schools.

The state wise percentage of primary schools having various facilities, such as blackboard, drinking water, playground and boundary wall, is taken from DISE Analytical Report 2004 and pertains to the reference date of 30th September 2003.

The data presented in the table reveal that about 91.19 percent primary schools in the country have blackboard. Keeping in view the importance of blackboard in teaching learning process, it may be noted that availability of blackboard is necessary for not only each and every primary school but even in each classroom. However, the data show that about 9 percent primary schools do not have even this basic facility. It is surprising to note that there is not even a single state where cent percent primary schools have blackboard. The percentage of schools having this facility ranges from more than 99 percent schools in Maharashtra and Tamil Nadu to only 55.5 percent schools in Orissa.

More than 90 percent primary schools have blackboard in 11 states, out of which, in 6 states, more than 95 percent primary schools have this facility.

TABLE 7
Percentage of Primary Schools Having Various Facilities 2003-04

<i>S. No.</i>	<i>State</i>	<i>Blackboard</i>	<i>Drinking Water</i>	<i>Playground</i>	<i>Boundary Wall</i>
1	Andhra Pradesh	86.80	51.30	46.27	55.04
2	Assam	91.56	60.14	45.00	41.81
3	Bihar	79.26	78.85	23.41	26.18
4	Chhattisgarh	91.78	79.54	30.93	51.84
5	Gujarat	93.91	63.82	53.53	51.50
6	Himachal Pradesh	93.38	85.55	48.25	17.53
7	Jharkhand	76.45	79.74	21.74	41.36
8	Karnataka	93.62	66.03	37.45	48.79
9	Kerala	96.68	90.14	44.49	56.28
10	Madhya Pradesh	85.69	81.84	53.50	58.21
11	Maharashtra	99.82	74.04	58.75	50.11
12	Orissa	55.50	72.63	15.36	46.72
13	Rajasthan	79.82	70.19	29.52	54.31
14	Tamil Nadu	99.39	91.84	70.37	36.56
15	Uttar Pradesh	96.86	94.87	61.45	33.37
16	Uttaranchal	97.69	69.94	45.39	39.94
17	West Bengal	97.85	73.64	30.77	24.30
	India	91.19	76.24	44.33	43.71

Source: DISE Analytical Report 2004.

Drinking water is yet another facility that each primary need to have. But the data presented in Table 7 suggest that about 23 percent primary schools in India do not have this basic facility. In Kerala, Tamil Nadu and Uttar Pradesh more than 90 percent primary schools have drinking water. It is a matter of concern that in states like Andhra Pradesh and Assam, only 51.3 percent and 60.14 percent primary schools have this facility respectively. In 9 out of 17 states, for which data is presented here, more than one-fourth primary schools do not have drinking water facility.

In order to make sure that the schools have proper facilities for sports and other extra curricular activities it is important that each primary school has playground. The data, however, suggests that at the national level, not even 50 percent of the primary schools have this facility in the country. Playgrounds are available in only 44.33 percent primary schools in India and therefore, it is clear that children studying in about 56 percent primary schools of the country are denied the sports and games facilities. The state wise analysis of data shows that in none of these 17 states, more than 71 percent primary schools have playground facility. Except 5 states, namely Gujarat (53.53 percent), Madhya Pradesh (61.45 percent), Maharashtra (58.75 percent), Tamil Nadu (70.37 percent), and Uttar Pradesh (59.22 percent), in all other states not even 50 percent

primary schools have this facility. The position is worst in Bihar (23.41 percent), Jharkhand (21.74 percent) and Orissa (15.36 percent) where not even one-fourth of the total primary schools have playgrounds.

Data show that only 43.71 percent of the total primary schools in the country have boundary wall. However, in 7 states, namely Andhra Pradesh (55.04 percent), Chhattisgarh (51.84 percent), Gujarat (51.50 percent), Kerala (56.28 percent), Madhya Pradesh (58.21 percent), Maharashtra (50.11 percent) and Rajasthan (54.31 percent), more than half of the total primary schools have the facility of boundary wall. It is disappointing to note that in Himachal Pradesh only 17.53 percent primary schools have boundary wall while in West Bengal only 24.30 percent primary schools have this facility.

Table 8 presents data on percentage of primary schools (in the selected states) having facilities like common toilets, girls' toilets and electricity.

TABLE 8
Percentage of Primary Schools Having
Common and Girls Toilets, and Electricity, 2003-04

<i>S. No.</i>	<i>State</i>	<i>Common Toilets</i>	<i>Girls' Toilets</i>	<i>Electricity Connection</i>
1	Andhra Pradesh	27.23	15.38	10.97
2	Assam	24.46	4.91	2.99
3	Bihar	12.83	3.52	0.41
4	Chhattisgarh	8.94	3.42	7.57
5	Gujarat	32.45	21.35	37.99
6	Himachal Pradesh	28.16	12.94	41.05
7	Jharkhand	8.65	4.15	1.52
8	Karnataka	27.28	16.80	23.60
9	Kerala	76.97	46.85	59.59
10	Madhya Pradesh	23.77	13.56	13.07
11	Maharashtra	32.24	21.24	38.24
12	Orissa	22.43	7.07	4.69
13	Rajasthan	34.59	14.09	6.45
14	Tamil Nadu	41.01	24.72	47.50
15	Uttar Pradesh	65.65	50.76	9.37
16	Uttaranchal	56.19	30.13	8.72
17	West Bengal	50.04	10.64	7.50
	India	36.16	20.61	14.57

Source: DISE Analytical Report 2004.

Table 8 reveals that only about 36 percent primary schools in the country have common toilets facility. The availability of this facility ranges from about 77 percent primary schools in Kerala to only 8.65 percent in Jharkhand and 8.94 percent in Chhattisgarh. Apart from Kerala, only 3 other states have more than 50 percent primary

schools where the facility of common toilets is available; these states are Uttar Pradesh (65.65 percent), Uttaranchal (56.19 percent), and West Bengal (50.04 percent). In 6 states, namely Assam, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh and Orissa, not even one-fourth of the primary schools have this facility.

Only about one-fifth of the primary schools have girls' toilet in the country. It is highest in Uttar Pradesh (50.76 percent) and Kerala (46.85 percent) while it is lowest in Chhattisgarh (3.42 percent) and Bihar (3.52 percent). In 6 states, girls' toilets are available in more than 20 percent primary schools; these states are Gujarat, Kerala, Maharashtra, Tamil Nadu, Uttar Pradesh and Uttaranchal.

The table shows that only 14.57 percent primary schools have electricity connection in India. In Kerala about 60 percent primary schools have electricity, followed by Tamil Nadu where about 47.5 percent primary schools have this facility. In only 6 other states more than 10 percent primary schools have electricity connections. These states are Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh and Maharashtra.

Table 9 presents data on percentage of primary schools having facilities like availability of computers, book bank, ramp and the medical check up.

TABLE 9
Percentage of Primary Schools Having Computer, Book Bank,
Ramp, and Medical Checkup Facilities, 2003-04

<i>S. No.</i>	<i>State</i>	<i>Computer in School</i>	<i>Book Bank In School</i>	<i>Ramp in School</i>	<i>Arranged Medical Checkup</i>
1	Andhra Pradesh	4.78	41.55	2.40	66.93
2	Assam	6.92	23.48	5.94	5.50
3	Bihar	2.32	26.66	2.59	8.82
4	Chhattisgarh	3.90	47.30	8.99	81.72
5	Gujarat	3.92	22.92	2.78	88.45
6	Himachal Pradesh	2.68	38.24	5.49	53.34
7	Jharkhand	3.90	28.20	1.56	13.24
8	Karnataka	5.10	10.70	1.75	69.54
9	Kerala	12.37	22.97	9.78	70.36
10	Madhya Pradesh	6.52	57.24	12.91	68.64
11	Maharashtra	5.73	84.55	1.99	94.98
12	Orissa	2.63	12.60	3.34	24.72
13	Rajasthan	3.59	19.20	3.68	74.75
14	Tamil Nadu	4.88	31.39	6.41	92.08
15	Uttar Pradesh	2.35	64.99	5.05	45.06
16	Uttaranchal	4.97	48.58	1.49	50.59
17	West Bengal	1.22	52.25	5.47	22.44
	India	3.95	42.54	4.98	52.61

Source: DISE Analytical Report 2004.

Table 9 reveals that there are hardly about 4 percent primary schools in the country where computer is available. In Kerala, 12.37 percent primary schools have computer, which is highest in the country, while West Bengal has lowest percentage of primary schools (1.22 percent) having computer. It may, therefore, be inferred that proportion of the primary schools having computer is very low in India. Similar is case of availability of ramp in primary schools as only about 5 percent i.e. one out of every 20 schools have this facility.

The primary schools are supposed to have book banks as it may inculcate the habit of reading among children. About 42.54 percent primary schools in the country have the book bank facility. In Maharashtra there are 84.55 percent primary schools having this facility while in Karnataka hardly 10 percent schools have book banks. Apart from Maharashtra, there are only three other states (Madhya Pradesh, Uttar Pradesh and West Bengal) where more than half of the primary schools have book bank.

Medical/health checkup of children is expected to be arranged in primary schools regularly. However, the data show that medical checkup was arranged in only 52.61 percent primary schools. In Maharashtra (94.98 percent) and Tamil Nadu (92.08 percent), more than 90 percent primary schools arranged medical checkup. However, in Assam (5.50 percent) and Bihar (8.82 percent) not even 10 percent primary schools have arranged medical checkup. In 9 states out of the above mentioned 17 states, medical check-up was arranged in more than two-third primary schools. These states are Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu.

Upper Primary Schools

The paper analyses the data on basic necessary facilities that are expected to be available in upper primary schools in selected states of the country. Here only those schools have been taken into account, which are exclusive or stand alone upper primary schools.

Table 10 presents state-wise percentage of upper primary schools having various facilities in the schools, namely blackboard, drinking water, playground and boundary wall. The data presented in the table is taken from DISE Analytical Report, 2004, and pertains to the reference date of 30th September 2003.

The data show that about 90 percent upper primary schools have blackboard. It means that 10 percent upper primary schools in the country have not been provided the facility of even a blackboard. It may be difficult to think of an upper primary school without a blackboard. So it is a serious concern. Tamil Nadu is the only state where cent percent upper primary schools have this facility. Out of 17 states for which data is reported here, there are only 10 states where more than 90 percent upper primary schools have blackboard. The position is found worst in Jharkhand (69.35 percent) and Bihar (75.46 percent).

TABLE 10
Percentage of Upper Primary Schools Having Facilities of Blackboard, Drinking Water, Playground, and Boundary Wall, 2003-04

<i>S. No.</i>	<i>State</i>	<i>Blackboard</i>	<i>Drinking Water</i>	<i>Playground</i>	<i>Boundary Wall</i>
1	Andhra Pradesh	84.23	74.16	67.45	82.77
2	Assam	91.36	58.85	62.86	63.99
3	Bihar	75.46	87.07	56.73	60.87
4	Chhattisgarh	80.65	73.98	36.42	66.29
5	Gujarat	99.15	94.08	87.89	88.24
6	Himachal Pradesh	85.87	74.96	44.76	35.50
7	Jharkhand	69.35	96.77	53.23	70.19
8	Karnataka	95.21	87.08	77.08	81.61
9	Kerala	96.25	94.74	68.77	71.43
10	Madhya Pradesh	76.63	78.60	46.82	73.93
11	Maharashtra	98.52	95.56	84.44	65.83
12	Orissa	96.46	65.28	48.91	76.48
13	Rajasthan	87.17	86.90	60.05	89.76
14	Tamil Nadu	100.00	96.83	92.06	68.66
15	Uttar Pradesh	94.38	90.41	67.02	86.41
16	Uttaranchal	96.71	65.08	44.31	54.90
17	West Bengal	96.42	83.84	57.46	66.29
	India	89.67	78.77	56.53	72.52

Source: DISE Analytical Report, 2004.

Provision of drinking water is essential in schools but unfortunately the situation is disappointing as only 78.77 percent upper primary schools in the country have such a provision. It means that more than one-fifth of the upper primary schools do not have the provision of drinking water even. There are 6 states where more than 90 percent upper primary schools have provision of this facility; these states are Gujarat, Jharkhand, Kerala, Maharashtra, Tamil Nadu and Uttar Pradesh. In Assam (58.85 percent), Uttaranchal (65.08 percent) and Orissa (65.28 percent) not even two-thirds of upper primary schools have the provision of drinking water.

For upper primary schools, availability of playground is also necessary so that the children can take part in sports and games which is necessary for the over all development of their personality. But the data reveal that only 56.53 percent upper primary schools have this facility. In this regard there are wide variations across the states. In Chhattisgarh, only 36.42 percent upper primary schools have playground whereas in Tamil Nadu more than 92 percent upper primary schools have this facility. There are five states where not even 50 percent upper primary schools have playground

and these states are Chhattisgarh, Himachal Pradesh, Madhya Pradesh, Orissa and Uttaranchal.

About 72.52 percent upper primary schools have boundary wall which means that in more than 27 percent upper primary schools there are no boundary walls. Therefore, the security of schools premises and its property and the maintenance of school building are at risk in on such places. The availability of boundary walls seems to be more problematic in hill states, namely Himachal Pradesh (35.50 percent) and Uttaranchal (54.90 percent) despite the fact that in these hill states the schools all the more need boundary walls to avoid any possible untoward incident of any student falling down the hills. Only 5 states, namely Andhra Pradesh, Gujarat, Karnataka, Rajasthan and Uttar Pradesh, have more than 80 percent upper primary schools with boundary walls.

Table 11 presents data on percentage of upper primary schools (in the selected states) having facilities like common toilet, girls' toilets and electricity.

TABLE 11
Percentage of Upper Primary Schools Having Facilities of Common Toilets,
Girls' Toilets and Electricity, 2003-04

<i>S. No.</i>	<i>State</i>	<i>Common Toilet</i>	<i>Girls' Toilet</i>	<i>Electricity Connection</i>
1	Andhra Pradesh	62.08	54.70	52.68
2	Assam	26.23	9.68	10.36
3	Bihar	51.45	24.54	5.80
4	Chhattisgarh	14.43	8.21	18.54
5	Gujarat	69.86	78.31	94.08
6	Himachal Pradesh	23.66	17.45	42.22
7	Jharkhand	30.65	19.35	20.97
8	Karnataka	69.58	49.38	64.58
9	Kerala	75.83	66.37	80.93
10	Madhya Pradesh	20.78	14.21	21.11
11	Maharashtra	71.11	72.59	80.00
12	Orissa	34.77	13.48	15.66
13	Rajasthan	63.89	46.96	58.86
14	Tamil Nadu	53.97	63.49	68.25
15	Uttar Pradesh	66.70	54.14	15.29
16	Uttaranchal	61.15	39.86	13.67
17	West Bengal	55.38	61.37	33.44
	India	44.25	32.91	20.01

Source: DISE Analytical Report 2004

The data presented in the table reveal that about 44 percent upper primary schools have common toilets whereas about one-third schools have girls' toilets. In Kerala more than three-fourths (75.83 percent) upper primary schools have common toilet while in

Chhattisgarh, on an average, out of 7 upper primary schools only 1 school has this facility. In Assam, Chhattisgarh, Himachal Pradesh, Jharkhand, Madhya Pradesh and Orissa, less than half of the upper primary schools have this facility.

Availability of separate girls' toilet is desirable in upper primary schools so as to ensure better participation and retention of girls in schools. It is disappointing to note that only about 33 percent upper primary schools have this facility in the country. It is a serious concern that the girls' toilets are available in less than 10 percent upper primary schools in Assam and Chhattisgarh. However, in 7 states more than 50 percent upper primary schools have this facility. These states are Andhra Pradesh, Gujarat, Kerala, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal.

The electricity connection is available in only one-fifth of the upper primary schools in the country. However, availability of this facility ranges from as high as 94 percent schools in Gujarat to as low as only 5.8 percent schools in Bihar. Apart from Gujarat, there are only 6 states where more than 50 percent upper primary schools have electricity and these states are Andhra Pradesh (52.68 percent), Karnataka (64.58 percent), Kerala (80.93 percent), Maharashtra (80 percent), Rajasthan (58.86 percent), and Tamil Nadu (68.25 percent). Apart from Bihar, where the situation is worst, there are 5 other states where electricity is available in less than 20 percent upper primary schools. These states are Assam (10.36 percent), Chhattisgarh (18.54 percent), Orissa (15.66 percent), Uttar Pradesh (15.29 percent) and Uttaranchal (13.67 percent).

Table 12 presents data on percentage of upper primary schools having facilities like availability of computers, book bank, ramp and medical checkup facility.

If we perceive that the upper primary schools should have computers, the data presented in Table 12 shows a disappointing picture. It shows that only 7.14 percent upper primary schools have computers in India. However, it ranges from only 2.38 percent upper primary schools in Himachal Pradesh to about 46 percent schools in Maharashtra. There are 5 states where more than 20 percent upper primary schools have computers. These states, apart from Maharashtra, are Andhra Pradesh (22.82 percent), Gujarat (28.73 percent), Kerala (29.13 percent) and Rajasthan (28.70 percent). Further, in as many as 7 states not even 10 upper primary schools have computers. These states are Bihar, Chhattisgarh, Himachal Pradesh, Orissa, Uttar Pradesh, Uttaranchal and West Bengal.

Only about 42 percent upper primary schools have book bank facility as is given in Table 12. Assam (22.33 percent) has the lowest and Maharashtra (85.93 percent) has the highest percentage of upper primary schools having the book bank facility. In only 6 states (Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Maharashtra, Uttar Pradesh and West Bengal) more than 50 percent upper primary schools have book bank.

In order to facilitate the physically challenged children, it is necessary that upper primary schools should have ramps. But unfortunately, the position is very discouraging in the country in this regard. Hardly 4.69 percent upper primary schools have this facility in the country. Rajasthan is the only state where a little over 10 percent upper primary schools have ramp. Further, only 8 states have more than 5 percent upper primary schools

having this facility and these states are Andhra Pradesh, Chhattisgarh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan and West Bengal.

TABLE 12
Percentage of Upper Primary Schools Having Facilities of Computers,
Book Bank, Ramp, Medical Checkup, 2003-04

S. No.	State	Computer in School	Book Bank in School	Ramp in School	Arranged Medical Checkup
1	Andhra Pradesh	22.82	53.36	7.05	73.15
2	Assam	10.68	22.33	2.61	2.96
3	Bihar	5.01	34.04	2.90	8.71
4	Chhattisgarh	4.97	57.16	6.95	72.36
5	Gujarat	28.73	33.24	4.79	82.54
6	Himachal Pradesh	2.38	30.64	3.27	28.35
7	Jharkhand	11.29	40.32	3.23	12.90
8	Karnataka	19.58	41.46	6.04	78.75
9	Kerala	29.13	25.53	8.71	68.77
10	Madhya Pradesh	12.48	52.07	7.45	60.55
11	Maharashtra	45.93	85.93	5.93	65.93
12	Orissa	3.52	24.61	2.23	16.26
13	Rajasthan	28.70	32.67	10.58	80.82
14	Tamil Nadu	11.11	49.21	3.17	96.83
15	Uttar Pradesh	3.21	56.71	3.70	27.19
16	Uttaranchal	6.38	34.88	1.28	27.27
17	West Bengal	2.94	51.20	5.99	7.44
	India	7.14	42.23	4.69	35.30

Medical checkup of children is conducted in only about 35 percent upper primary schools in the country. There are 4 states where more than 75 percent upper primary schools have arranged medical checkup; these states are Gujarat (82.54), Karnataka (78.75), Rajasthan (80.82) and Tamil Nadu (96.83). Three states (Assam, Bihar and West Bengal) are worst where not even 10 percent upper primary schools have arranged medical checkup.

Major Findings

The study of data related to facilities available in primary and upper primary schools in the country and state-wise analysis of these data reveal the following points concerning the provision of elementary education at the national level and in various states of the country:

- In India, more than two-thirds of the total schools are exclusive primary schools whereas exclusive upper primary schools are less than 7 percent. There are states like Uttar Pradesh and West Bengal where exclusive primary schools are about or more than 80 percent of the total schools (in the state). In Gujarat, hardly one-third and in Karnataka only half of the total schools are exclusive primary schools. Exclusive upper primary schools are more than 18 percent of the total schools in Assam, whereas in Andhra Pradesh, Bihar, Jharkhand, Karnataka, Maharashtra, Rajasthan and Tamil Nadu, these schools are less than 1 percent of the total number of schools.
- Even after about two decades of the implementation of Operation Blackboard (OB) scheme in the country there are substantial numbers of primary and upper primary schools without a building and such building-less schools are found in almost all the states. The DISE data reveal that, in the country, about 4 percent primary schools and about 12 percent upper primary schools have no buildings.
- As far as the type of primary school buildings is concerned, only about 70 percent primary and 63 percent upper primary schools have pucca buildings in the country. With regard to primary schools the position is best in Uttar Pradesh and Uttaranchal where 96 percent and 86 percent primary schools respectively have pucca buildings. However, the position is worst in Assam and Orissa where only about 35 percent and 32 percent primary schools have pucca buildings respectively. For upper primary schools, Gujarat and Uttar Pradesh have more than 90 percent schools that have pucca buildings while the position is worst in Assam where only 21.47 percent upper primary schools have pucca buildings.
- In the country, there are still very many single-teacher primary and even single-teacher upper primary schools. There are 17.5 percent primary schools and 7.7 percent upper primary schools in India that have only one teacher. Further, there are about 16 percent primary schools and about 14 percent upper primary schools that have only one classroom.
- There are primary schools and upper primary schools that are devoid of basic facilities, like blackboard and drinking water. About 9 percent primary schools and about 10 percent upper primary schools do not have blackboard and about 24 percent primary schools and about 21 percent upper primary schools do not have drinking water facility. This is a matter of serious concern and authorities need to look at these problems seriously and resolve them at the earliest.
- The facilities like playground and boundary walls are not available even in half of the primary schools and more than one-fourth of the upper primary schools. About 56 percent primary schools and 43 percent upper primary schools do not have playground. Further, about 56 percent primary schools and about 27.5 percent upper primary schools do not have boundary walls.

- Common toilets and girls' toilets are not available in more than half of the primary and upper primary schools in the country. About 64 percent primary schools and about 56 percent upper primary schools do not have common toilets. Similarly, about 80 percent primary schools and about 67 percent upper primary schools do not have girls' toilets. For ensuring the participation of girls in elementary education, it has a serious implication and it seems important that the issue is addressed in the district plans for ensuring universal participation of girls specifically.
- It is very disheartening to note that about 85 percent primary schools and about 80 percent upper primary schools of the country do not have electricity connection. This may be one of the reasons that 96 percent primary schools and 93 percent upper primary schools do not have computers in schools.
- The schools are expected to promote health awareness among students and for that the schools need to organize regular medical checkups of the children. But it is a matter of concern that about 47 primary schools and about 65 percent upper primary schools have not arranged any such medical checkup. The schools also seem to be unaware about the requirements of physically challenged children. This is evident from the fact that more than 95 percent primary and upper primary schools do not have provision of ramps. It may be noted that the goal of UPE or UEE cannot be achieved if appropriate provision for the education of physically challenged children is not made.

The country's top priority in education at present is universal elementary education as it is not only a constitutional directive but once the law is enacted it may also become a fundamental right, and this is likely to happen sooner than later. It is, therefore, necessary that provision for schooling, is made in the states because universal access is a pre-condition for universal participation. However, provision for schooling does not mean providing schools without appropriate facilities and infrastructure. Many schools in the country are still not equipped with proper infrastructure and do not have even the basic facilities. It is, therefore, suggested that authorities need to focus their attention towards this aspect of elementary education. The district elementary education plans developed and implemented in all the districts of the country under Sarva Shiksha Abhiyan programme, may propose interventions to ensure that all the schools in the district are provided with basic minimum required facilities. This will not only increase participation of children and retaining them in the schools but will also facilitate in improving the quality of education imparted in schools.

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INDIAN JOURNAL OF AGRICULTURAL ECONOMICS (Organ of the Indian Society of Agricultural Economics)		
Vol. 62	OCTOBER-DECEMBER 2007	No. 4
CONTENTS		
ARTICLES		
Diversification of Employment and Earnings by Rural Households in West Bengal		<i>Sankar Kumar Bhaumik</i>
Risk Attitude and Risk Management Strategies: An Analysis of Dairy Farmers in Tarai Area of Uttaranchal State		<i>D. Bardhan and S.K. Tewari</i>
Yield Gaps in Mulberry Sericulture in Karnataka: An Econometric Analysis		<i>S. Lakshmanan</i>
RESEARCH NOTES		
Productivity and Efficiency and in India Meat Processing Industry: A DEA Approach		<i>Jabir Ali</i>
Economic Analysis of Smallholder Rubber Plantations in West Garo Hills District of Meghalaya		<i>S.N. Goswami and O. Challa</i>
Supply Analysis of Institutional Credit to Agriculture for Major States in India		<i>Gagan Bihari Sahu</i>
Milk Procurement Cost for Co-operative and Private Dairy Plants in Tamil Nadu – A Comparison		<i>N. Rangasamy and J.P. Dhaka</i>
BOOK REVIEWS *		PUBLICATIONS RECEIVED*
INDICATIVE OUTLINES OF SUBJECTS SELECTED FOR DISCUSSION AT THE 68TH ANNUAL CONFERENCE OF THE ISAE*		
PH.D. THESES IN AGRICULTURAL ECONOMICS COMPLETED IN UNIVERSITIES IN INDIA: 2005-07 *		
	NEWS *	INDEX TO IJAE. Vol. 62, 2007 *
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RESEARCH ABSTRACTS

Abstracts of MPhil/Ph.D. Dissertations on Educational Policy, Planning and Development Issues conducted in Indian Universities

An Economic Analysis of Costs in a Digital Library

Title:	An Economic Analysis of Costs in a Digital Library: A Case Study of Central Library of IIT-D
Research Scholar:	Geeta Verma
Supervisor:	Binod Khadria
Department/University:	Zakir Hussain Centre for Educational Studies (ZHCES), Jawaharlal Nehru University, New Delhi
Degree awarded:	M.Phil.
Date of Award of the Degree:	2001
Availability of Thesis:	Jawaharlal Nehru University Library and Department Library of ZHCES

Education is considered a long-term investment in human capital formation. However, it is quality education which improves the productivity, knowledge, as well as the capacity to understand and other such aspects of human capital formation. And it is technology which has always had profound impact on quality of education imparted in general and higher education in particular. In this millennium, particularly at the onset of the twenty-first century, higher education is particularly affected by the impact of Information and Communication Technology (ICT) revolution that has shown its effectiveness and importance in every other sector of the economy. This technology, especially the Internet is offering opportunities to researchers, educators and administrators all over the world. Now, they all can interact with one another. In other words, scholarly community may exchange ideas and form a kind of global university. One example is the University of Phoenix, the largest private university in the USA, which is enrolling 65,000 students out of which 10,000 students will be learning exclusively online (Marcus, 1999, p.11). The emergence of these technologies has revolutionized our ways of thinking. Moreover, it has opened up heady prospects for creating worldwide links among universities, institutions of higher learning and libraries. It is promoting personalized teaching and disseminating knowledge that is tailored to the needs of individuals and groups.

In India, higher education has been influenced immensely from ICT and striving to follow them at affordable costs. Institutions of higher learning have wide scope to incorporate it and library being the storehouse of information have become the focal

point, therefore, they can not be silent spectators to these new technological changes. Though universities are welcoming new technologies and are in the process of it, main hurdle is the cost of these changes because universities are facing resource constraints. Therefore, it is essential to understand the cost of such technologies especially in a library which is highly influenced by this. Hence a study of Central Library, Indian Institute of Technology- Delhi was taken up to understand the various cost components in a digital library. This further looked into the functioning of digital library and also explained the place of ICT in the higher education system. The main objectives of the study were:

- Role of Information and Communication Technology in improving the quality of academic sector.
- Functions of a digital library in the institution of higher education, particularly technical education.
- Fixed and Variable costs involved in digitisation of IIT Central Library, Delhi.
- Development cost of various forms of Information Technology in the digital Library and also find out the unit cost of each form.

Primary and secondary source of information were used to understand and study the various cost components. These included unpublished and published financial records of the central library. Structured interviews were also conducted to understand the usefulness and about the functioning of a digital library and its importance in higher education system.

The findings suggest that Information and Communication Technology (ICT) offers smooth flow of information without any geographical barrier through computer, telecommunication and magnetic storage media. The computer is the core of this technology which has gained much popularity compared to others. Digital library offers several facilities to the users since information available in digital format is changing the facet of library. Moreover, growth of electronic journal is also increasing at a fast pace which is integral part of any library. Moreover, digital data sets, (digitized) old journal of scholarly values, and free links to various electronic resources also provides various kinds of information in digital library. Digital library has great significance in the changing scenario since it can manage large amount of information. As of now, the library has adopted new term, the 'digital library', where easy and fast access of information has been made available to users.

Central library of Indian Institute of Technology, Delhi (IITD) positively responded to new information technologies and started the process of digitization in year 1998. The process took two years to complete. The digital library is not a single entity; however, it is a supplementary to the conventional library. Digital library contains most of its information in digital format, like electronic journals, CD-ROM, and digitized materials which are major source of information. Presently, information handling job has become easy and less laborious. Electronic journals are replacing the print media as production and dissemination cost of an electronic journal is less than print journal. CD-ROM is another device which is very user-friendly and can store vast information in limited space.

It was found that central library started automation of In-house operations and Net-Enabled services in 1998. The case study of IIT Delhi, Central library informs that digitalization of library involves two types of cost i.e. fixed cost and variable cost. Fixed cost constitutes the cost of hardware components, software, furniture and fixture, CD-ROM Database, and wages. On the other hand, variable cost is composed of cost of Internet, electricity, electronic journals, consumable items, and salaries. The study found that variable cost constitutes around 76 percent of the total cost while fixed cost around 24 percent of total cost. Total variable cost is relatively higher than total fixed cost because total variable cost includes expenditure incurred on Internet and salaries paid to the concerned staff of library. These two costs are substantially high and constitute major part of the variable cost. A review of existing literature shows that generally fixed cost is higher than variable cost. Further, fixed and variable cost structure varies from division to division. These divisions have been divided into two sections, namely, automation of In-house operations and Net-enabled services. Cost structure for these sections differs remarkably from each other. Fixed cost of automation of in-house operations is lower than fixed cost of Net-enabled service which involves the cost of highly advanced database, whereas fixed cost of in-house operation service is lower because expenditure incurred on hardware is lower. The unit-user cost of central library is Rs. 2534.40. The study states that new technologies have shown their impact in higher education system. The libraries/storehouse of information are also benefiting by it.

It can be said that ICT has influenced every aspect within higher education system from teaching-learning to dissemination of information. In higher education, library has always been an agent of information and in the changing scenario this storehouse of information has made breakthrough by providing wider and economical access to information.

Educational Reforms for Human Development in Egypt

Title:	Educational Reforms for Human Development in Egypt: An appraisal of Issues in Debate since 1990
Research Scholar:	Lakshmi Narayanan
Supervisor:	Girijesh Pant, Professor, Director, Gulf Studies Programme
Department/University:	Centre for West Asian and Sub-Saharan Studies, School of International Studies Jawaharlal Nehru University, New Delhi
Degree awarded:	M.Phil.
Date of Award of the Degree:	2007
Availability of Thesis:	Jawaharlal Nehru University Library

This dissertation provides an analytical framework on the interaction between education and the human development indicators. By examining the educational reform issues, the present work digs out the underlying facts and its quality and productivity relevance in terms of the sectoral outcomes. Education, as a crucial research variable, has been analysed in terms of its facilitations to the reform efforts for achieving the broader aspirations of the human development in Egypt. For achieving this end, the study stood on the following hypotheses. First, the developmental crisis in Egypt is acutely reflected in the underdevelopment of the human resources of the country. It is assumed that the underdevelopment of the human resources in Egypt, is due to the low quality of education system. Lastly, the intended educational reforms are mostly to develop human skills for participating in the global Knowledge Society.

For testing these hypotheses, the study had the following objectives (i) to study the debates and issues in the educational reform initiatives of Egypt since 1990; (ii) to analyze the role of education reform in the human development of Egypt; and (iii) to examine the adequacy of educational reform in meeting the issues of Egyptian knowledge deficits in the context of globalization. Though the study has not collected the primary sources of data, it has made use of the internet and other available communication technologies to get the first hand information from the intellectuals who are working on the subject. Hence, the methodology adopted in this study is based on the secondary sources of data collection and analysis. Database of International agencies like the UNDP, UNICEF and UNESCO's have also been used in relation to the national (ministry) sources.

The human capabilities in West Asia are weak and poorly utilized and illiteracy still saps Arab human capabilities. As the capabilities are not effectively utilized, it is evident that the level of human welfare attained in the region is low particularly with respect to human development. For example, the persistent and increasing gaps between Lower and Upper Egypt with regard to the aspects of human deprivation, especially the number of illiterates and poor still remains a challenge. Since the

comparison of human development indicators in Upper Egypt to Lower Egypt reveals uneven progress, it remains to be seen if improvement on the national level has trickled down to close the regional gaps. Hence, the present and future perspectives of human development in Egypt depend largely on how far it will succeed in implementing a future oriented reform in its education system.


Although the contribution of education to human development is widely recognised, very rarely the linkages between educational reforms and human development have been analysed. The present work in this context attempts to examine whether the educational reforms have at all any role in human development in Egypt. The mixed method of analysis concludes that even though the educational reforms play a significant role in human development, the emerging problems to the aspirations of human development, in general, and to the educational system in particular, raise some serious doubts.

Since the present study is an effort to understand the issues which are in the current debate in a qualitative way, the (quantitative) data inconsistencies between the different sources (both national and international) are misleading. So, the quantitative data has to be improved. The picture is all the more bleak where the prevalence of high levels of unemployment in societies is characterized by low living standards to start with, and weak social security networks in a context of widening poverty and worsening mal-distribution of income and wealth. The available information does strongly suggest that low levels of education enrolment, low levels of literacy among women, and low employment opportunities indeed provide a poor basis for development options for local communities.

The current work found that the most apparent shortcoming of the education system in Egypt is its inability to produce the appropriate mix and quality to meet the demand. Though the big spending on education in the name of reform packages is flowing well into the national system, it is often associated with small returns. This has also been further confirmed by the reviewed literature as most of them complain that the system has not provided graduates with the necessary skills to realize the potential private and social benefits of education.

In brief, the study furthermore found that the system of education is leading to heavy dependence in all stages, on dictation and memorization. Authoritarian management and poor teaching methods as well as inflexible evaluation and examination techniques coupled with rigid mechanisms of admission to succeeding levels of education are the most important factors explaining the heavy dependence on rote learning. Hence, it felt that arriving at definitive conclusions is very difficult while evaluating the multidimensional factors influencing education in a complex society like Egypt.

Lastly, the issue of *islamization* of pedagogy both in the context of West Asia and Egypt had been observed. In terms of diagnosis, the dissertation underlines that religion has no place in performance-based activity as it is a personal thing and should remain that way. Since the comparison of human development indicators in Egypt reveals uneven progress, the study hopes that the future research works to see if improvement on the national level has trickled down to close the regional gaps. Consequently, how Egypt develops its human resources will be the key to this end.

JOURNAL OF RURAL DEVELOPMENT		
Editor and Chairman : Shri V.S. Sampath, Director General		
Vol.26	October – December 2007	No.4
CONTENTS		
Articles		
1. Rural Credit : Issues, Contradictions and Perspectives - Mohinder Kumar		461
2. Access to Credit – A Study of Hill Farms in Himachal Pradesh - R.K. Sharma, Sonika Gupta and B. Bala		483
3. Role of Credit Institutions in Rural Poverty Alleviation – A Study of Hisar District (Haryana) - Baljit Singh, R.K. Patel and K.S. Suhag		503
4. Borrowers' Experiences with Rural Lending Institutions in Maharashtra : Some Policy Implications - K.G. Kshirsagar and Deepak Shah		523
5. Mutual Insurance in Joint Liability Lending Programmes from Malawi : Its Determinants and Policy Implications - Franklin Simtowe		541
6. Assessment of Yield Gaps and Prioritising of Production Constraints: A Regional Analysis of Major Cereals Crops in Saurashtra - Dhandhalya M.G. and Shiyani R.L.		577
7. Nature and Pattern of Outpatient Health Care Expenditure in Rural Kerala - A. Ashokan		599
8. Rural Non-Farm Employment in Haryana : Trends and Determinants - Usha Tuteja		617
Book Reviews		
1. Indian Micro Finance : The Challenges of Rapid Growth by Prabhu Ghatge - P. Purushotham		653
2. Towards Water Wisdom : Limits, Justice, Harmony by Ramaswamy R. Iyer - P. Siva Ram		656
3. Ecology and Human Well-Being by Pushpam Kumar and B. Sudhakar Reddy - N.V. Madhuri		658
4. State Level Public Enterprises in Sikkim : Policy and Planning by R.K. Mishra and J. Kiranmai - Shankar Chatterjee		661
Subscription Rates		
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BOOK REVIEWS

Chris M. GOLDE (2006): *Envisioning the Future of Doctoral Education - Preparing Stewards of the Discipline*. Jossey-Bass, San Francisco, CA 94103. USA. Pp. ix+440; Price : Not Stated. ISBN 0-7879-8235-0

In an era of increasing interest in enlarging and transforming doctoral education as an essential instrument of knowledge society and competitive economy, the Carnegie Foundation for the Advancement of Teaching, USA, has rendered an invaluable service to advance the concepts behind doctoral degrees by supporting a five-year (2001-2005) project, named 'Carnegie Initiative on the Doctorate' (CID).

In the US, since the start of the twenty-first century, more than 40,000 doctoral degrees are being awarded annually. The number of universities granting doctorates has grown from 14 in 1920 to over 400 in 2006. The main purpose behind this study is to continue to strive to make doctoral education the best possible preparation for the next generation of disciplinary leaders. Disciplines continue to change, as do universities, the job market, the character of professional work, and the student population. Over time, changing conditions may mean that doctoral programmes no longer effectively meet their purposes, as some practices are rendered obsolete. In fact, doctoral education may have lost sight of its central purpose.

Some of the perpetually persisting problems of American doctoral issues, as recognized in this project are: conventional doctoral programmes do not meet the needs of students, employers, and society; many Ph.D. recipients are ill-prepared to function effectively in the settings in which they work; in most disciplines, women and ethnic minorities are under-represented among doctoral students; doctoral students attrition in many departments approaches (or even exceeds) 50 percent; and the number of international graduate students coming to the United States is shrinking.

One of the major challenges for doctoral education is to help students be flexible and interdisciplinary, and to balance this with the enormous amount that students are expected to know. They are expected to creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching, and application. The CID Project calls such persons as "Stewards of the Discipline."

The CID Project has adopted a rather unique approach to obtain the necessary background material by focusing on aligning the purpose and practices of doctoral education in six disciplines: Chemistry, Education, English, History, Mathematics, and Neuroscience, that broadly represent natural and social sciences, where sizeable number of doctorates are awarded by US universities, and omit the engineering and technology areas. It selected eighty-four departments of US universities engaged in doctoral level programmes in the six disciplines to obtain their experiences as well as their

commitments for designing and implementing future doctoral programmes that would foster development of Stewards of the Discipline.

The Project elaborates on the concept of disciplinary stewards for the common understanding of the participating departments. It also recognizes that stewardship is discipline-specific. It postulates that the doctorate should signal a high level of accomplishment in three facets of the discipline: generation, conservation, and transformation.

A Ph. D. holder should be capable of generating new knowledge and defending the knowledge against challenges and criticism, conserving the most important ideas and findings, and transforming knowledge that has been generated and conserved by explaining and connecting it to ideas from other fields. All of this implies the ability to teach well to a variety of audiences, including those outside formal classrooms. Demonstrating the ability to conduct research and scholarship that make a unique contribution and meet the standards of credible work is the culminating experience of the Ph.D. A steward is expected to conduct investigations according to accepted standards of rigour and quality. Every scholar and steward must strike a balance between mastering breadth and depth in the discipline. Typically, doctoral students learn a small area in great depth. Moreover, stewards should understand how their discipline fits into the larger intellectual landscape, have a respectful understanding of the questions and paradigms of other disciplines, and understand how their discipline can speak to important questions. What constitutes a balanced command of breadth and depth differs by discipline.

Transformation speaks of the importance of representing and communicating ideas effectively and clearly as well as undertakes teaching in the broadest sense of the word. Whether one is a classroom teacher or is working in a government laboratory, industrial setting, or policy arena, the steward must be able to convey information clearly. Stewards want others to value their knowledge and skills, which requires the ability to communicate effectively to a variety of audiences in oral and written forms.

In identifying the six disciplines, the Project recognized the variations that exist among the disciplines. It took into account the situation that the knowledge base, by definition, in every discipline differs from others and the ways in which knowledge is created and shared are also different. The history of fields differs: some fields were part of the academy from the very beginning, such as mathematics or history; others are recent creations, such as neuroscience, women's studies, or computer science. The career paths of graduates may lead nearly exclusively to the academy, as in English, or to a broad range of careers, as in chemistry and education. Fewer than sixty doctorates are granted per year in classics and nearly two thousand in chemistry.

In the meanwhile, the CID Project commissioned sixteen essays by invited experts, each representing one of the six selected disciplines. In each of the six disciplines, two, and sometimes three authors were commissioned to provide multiple and diverging perspectives. Essayists were invited to re-conceive or reinvent the forms and structures of doctoral education in their particular discipline. They were asked to reflect on the best

way to structure doctoral education in the field if they had a chance to start *de novo*. They were requested to comment on the following three questions: What constitutes knowledge and understanding in the discipline? What is the nature of stewardship of the discipline? How ought Ph. D's be educated and prepared?

These essays along with commentaries on them form this volume. Taken together, the essays in the volume provide opportunities to compare and contrast doctoral education among the disciplines. A brief overview of these views is presented in this review. These include: an increased emphasis on intellectual breadth and awareness of the larger disciplinary context; maintaining rigour and quality; developing independence and creativity; fostering curiosity; addressing the challenges of collaboration; encouraging risk taking; and understanding the importance and difficulties of working in interdisciplinary fields.

Other issues covered by the essays relate to criteria by which applicants are selected for doctoral training; motivational factors; dissertation work; multiple supervisors; career paths; research opportunities; teaching roles; reward system tailored to individual achievement within a discipline; rewarding collaborative and cross-discipline proposals; and so on.

In discussing the career constraints, the essays point out that among the Ph.Ds in sciences not more than 10 percent will be faculty at elite universities, around 40 to 50 per cent in any academic institution, and the rest will find non-academic employment. Career preparation is not satisfactory for the new Ph.Ds who get tenure-track positions in research universities. Although prepared to do original research, they seldom are adequately prepared for their teaching duties or their more general professional obligations. This is very similar to the pattern in India.

Doctoral training can be better designed to teach the skills and instil the habits of mind that, in fact, will increase the odds of career success, whether the career is in a research university, teaching college, or outside the academy. Doctoral training does a poor job of preparing its Ph.D. candidates to engage the public in any meaningful way. Candidates need to be taught a way of thinking that will connect with responsibilities beyond the classroom, even beyond disciplinary boundaries, and attention to what is taught.

The essays advance a range of ideas for opening out the mentor-advisee relation in fruitful ways, including giving students more leeway to formulate their own topics (in fields in which topics are now often assigned), encouraging them to get a solid background in other disciplines, and working with multiple advisers throughout graduate school.

Having stated all these views, one paradox that is common to all the essays is the assumption that the disciplines should remain organized as they are. None of the authors suggest a radical overhaul of graduate education in their discipline. Nor do any of the essayists question the need for the Ph.D. degree. The essayists seem to see future opportunities and challenges in their fields that are not substantially different from those existing in the present.

Yet seeing the rapidly changing opportunities in the globalized world, the reviewers of the essays raise many questions about disciplines, such as: What does it contribute? Is it done effectively? Can it justify its existence? Can it do so in language that is not defensive but that reveals a full understanding of the role it plays and roles it might play in the future? Is the discipline keeping up with the evolving nature of knowledge, discovery, and communication? Do they contribute effectively to the university and society? Can they justify their ongoing existence, in the university and in the field, as producers of Ph.D.'s? What is a reasonable rate of attrition? Do we know why students leave programmes? What happens to these potential teachers, leaders, and discoverers? and so on.

Today's Ph.D's have extraordinary new opportunities to lead efforts to extend human knowledge. They already enjoy new possibilities for educating the next generation of scholars and citizens and for doing so in a wide spectrum of institutional settings. They are also called upon to provide expert opinion in a dizzying array of high profile public areas. They have a special opportunity and responsibility to inform the public about their disciplines and, ultimately, to shape the public's attitude about the importance of their fields and the attendant habits of mind of an informed, engaged, and ethical scholar.

This volume articulates many questions regarding the future of doctoral education that have been raised in the last few decades and begins to provide some answers to them. Those who take the challenges seriously and deeply consider the possible strategies suggested by these essayists will then have the opportunity to create new forms of doctoral education. The views of the essayists and reviewers provide valuable insight on the scope for design and development of future doctoral programmes. Though these views address the situation in US universities, they have immense relevance to the current Indian aspirations to increase the quantity of Ph. D. output many-fold and enhance its quality to international standards.

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Les BELL and Howard STEVENSON (2005): *Education Policy: Process, Theory and Impact*. New York: Routledge. Pages 167.

Globalisation has affected every aspect of life, including education in different ways. That is what this book tells and specifically deals with the issue of leadership and policy, and its importance for the sustenance of education. The central argument of this book is that "policy is imitative from values that inform the central discourses in the socio-political environment and those values are imitative from that discourse." One of the main objectives of this book is to explore the relationship between the development of policy at the institutional level, impact of local environment and influence on these of the

macro-policy environment. The book is also relevant in the sense that there has been very less understanding developed among the educationists on the issues of education policy formation, its drivers and its impacts upon school and colleges. Due to globalization, the focus is on the education policy outcomes, and its implications for the economic growth and also on the social citizenship. Therefore, the authors have tried to meet these challenges and linked these to the educational leadership. The authors focus on the major current themes within educational leadership and management, including learning and teaching, policy, external relations and marketing, human resource management, and accountability and quality.

This book is divided into three sections, every section integrated with the other so beautifully that one can easily understand the involved issues. First section has two parts: one is on Policy and Education in which authors emphasise the importance of leadership which is shaped by its wider environment and the power relations therein. It tries to explore the nature of policy and identifies some policy formulation and implementation related agenda at the macro-level. This part begins with the question: What is Educational Policy? Policy formulation becomes the main characteristic of leadership. Therefore, policy is political or about the power to determine what gets done or not done. Here, policy can be seen as operational statements of values (those beliefs and principle, individuals or leaders hold), and as the capacity to operationalise values through the ability. There are reciprocal relationship between policy and values. According to the pluralist approach to policy, values shape policy but it is equally important the way policy can shape values. This part has also identified the nature of power which helps in understanding policy as product and process in which access to resources of power can decisively shape the development of policy.

Next part of the book deals with the concept of state and then tries to establish relationship between state and the individual institutions. It is argued that the nature of educational policy is imitative from assumptions about political processes. The nature of policy is shaped by the relationship between the educative process and the state and assumptions about the purposes of education. Therefore, it is all about the policy development. Here the authors have found that voices from within the state are powerful and they have ability to shape the central discourses where policy is framed and from which strategic direction emerges. Therefore, different forms of ownership, governance and accountability all play important roles in shaping the relationship between different institutions and the state.

The second section identifies some themes. It is divided into three parts: the first deals with the relationship between education and human capital. It is argued that emphasis over economic utilitarianism can make equity agenda passive. When human capital theory is applied to the educative process, it treats education as a private consumable, a product or a positional good in the market at individual and state level. Some limitations of the concept of human capital are impart at: education and labour are more than product, they are value-driven; educational process also includes aspects relating to ethics, social justice and the very nature of social processes both present and

the future. Second theme is on a question as to what extent social values shape education policy and how education policy reflects the different and conflicting social functions? This part deals with the importance of globalization, which increases the demand and international competition and how all these aspects are linked with the education policy and economy. Education policy on citizenship is related with the core values of the nature. The citizenship issue is about developing individuals as active agents of change. The third main theme relates to accountability, autonomy and choice in educational policy in a number of different forms. Market accountability has been followed by the choice as a mechanism for holding schools to account. In the sphere of educational policy, parental involvement and other stakeholders play an important role in establishing accountability and this is followed by an analysis of accountability through performance management and performance appraisal.

The last section of the book is titled “The Impact of Educational Policy”. It deals with the implementation of particular policies in the specific context at both the local and institutional level and this section is divided into three parts. The first part is about the use of strategic leadership and management in the primary schools in Hong Kong and England and describes the organisational procedure and operational practices adopted at school level. The second part is about the Education Action Zone (EAZ) policy which describes the importance of institutional policy issues and the extent to which these are shaped by the values and commitment of school leaders. A national policy plan is dependent for its implementation on local decisions and locally determined procedures. In the last part, the authors have presented an empirical case to measure micro-level policies in the context of social and cultural diversity of school leaders.

Formulating an educational policy is a dynamic process in which state has central power. Though this book tries to conceptualise leadership in the context of policy discourse, the focus is on globalisation and its “great impact” (which is still a matter of debate) on education in developed countries. It deals with the individual leaders and their impact on the education system. In a sense it tells that there should be a leader. But if we look from a different dimension, globalisation creates a hierarchy in the education system, led by leaders who are influenced by their own values. But one can argue, what would be that dominating value? Is it really beneficial for education to get dominated by the market forces?

If we look at the developing nations, it is very difficult to give importance to the “market driven” forces to make leaders more accountable towards education. In the third world countries where education is still a vital issue for people and they have very less access to education, market driven policies and leaders would certainly not benefit them. Already, schools have become profit making business and students have become commodity for them. In such conditions, there is need to develop a more democratised policy framework, where everyone can be assured for their say in the system of education for overall development of the society.

Akila SIVARAMAN (2007): *Mass Media for Women Education*. T.R. Publication, Chennai. pp XII+169, ISBN 81-8286-006-7, Price Rs. 250 (Paperback)

and

Amal DATTA (2007): *Effects of Television and The Viewers*. Mittal Publications, New Delhi. pp XV +124, ISBN 81-8324-182-4, Price Rs 295 (Hardbound).

The two books under review deal with mass media. Sivaraman's book forms the substance of a doctoral thesis in education, and deals with the role of mass media in the continuing education of women. Datta's book on the other hand reports the outcome of a survey- 'Effects of round-the-clock telecast on the viewers', conducted in 2003 by the Audience Research Unit, Doordarshan Kendra, Kolkata.

Akila Sivaraman's study probes the utilitarian aspect of mass media service in the cause of women's education, to develop basic awareness, functional literacy and development of skills. Prof. M.S. Swaminathan in the "Foreword" writes that the study deals with the basic guidelines in the area of education, including functional literacy. It also deals with the appraisal of the programmes undertaken by both radio and television and draws inferences on methods of improving them. It also discusses the role of ancient and modern Sanskrit and Tamil literature in the development of value-based education. A suggestion is made for the establishment of a public monitoring agency to ensure that the services of the media are in the right direction.

In the literature survey, the author points out that philosophers, poets, writers, and researchers have written about a variety of women's issues that have a bearing on men, family, society and the nation. The study of literature relating to such women as Sita and Panchali will provide the necessary inputs and make the modern women fight for their rights with a strong and sensitive approach. Poet Bharatidasan wanted girl child to go to school and acquire knowledge. He was against discrimination of women and his verses in 'Kudumba Vilakku' have been used in many feature films to drive home the women's effective role in the life of a man.

The women should have a discerning knowledge to judge what is right and what is wrong. This will make them real gems of the society. Regarding the value of mass media, the author points out that one is able to gather lot of knowledge from newspaper, journals, books and periodicals for the many sided impact in promoting the lot of women in India. Mass media are also conscious of their increasing responsibilities towards social consciousness, women's welfare, cultural advancement and political development for the betterment of a nation's life as whole.

Mass media plays an important role in increasing people's awareness about national policies and programmes by providing information and education besides healthy entertainment. It helps people to be active partners in the nation's building endeavour (India-2007). The author emphasises that the mass media, especially the electronic media can play a very important role for making women really knowledgeable as entertainment alone will not fully satisfy anyone without being in a fit state of mind to enjoy it. All the

four media- press, cinema, radio and television, their development, sense and service can be a good tool for education. The study of education for women has to take note of computers and internet as these are the latest tools of mass communication. However, the media will have to be attractive enough for both men and women and should follow the well formulated policy guidelines and broadcast codes laid down by well meaning authorities of the government and leaders of public opinion.

The main aims of the study are: to analyze the origin, growth and development of the mass media with special reference to education; to identify the role played by mass media for the cause of women's education; and to analyze, assess and improve the impact of mass media on women for their day to day life, personal emancipation, and participation in nation building activities. The study attempts a descriptive and qualitative assessment and analyses the impact of mass media.

The sample for the study comprised of 16 key personalities both men and women connected with media, education, and women issues. They provided the data through personal interviews. Moreover, a survey through a questionnaire has been done with 25 beneficiary groups of women of a ladies' club, to find out as to how they avail of themselves of the services of the media and to know about their lifestyle, media preferences, and attitude to educational development and benefits. Out of these, nine chose to exchange their views in person.

In the interview with key personalities, the focus was very much on the subject of mass media giving them fruitful inputs about the things and events happening around them. The interviews mentioned that education was multifaceted, formal, informal, functional, value-oriented, culture-oriented, inspiring, skill based, professional, awareness building etc. The central idea conveyed was to make women educated in a real sense of the term, that is, well groomed, well disciplined, absolutely knowledgeable, professionally qualified, skillfully talented so that they could be custodians of values and culture, honourable bread winners, able partners, excellent housewives, loving mothers and efficient managers. It is stressed that once women recognise their strength and draw it from within themselves, they will develop a systematic and organized pattern for the society. Any improvement will be possible by a concerted effort by all concerned. To help women for self studies, the media have to arouse their interest and get them involved. Moreover, by appealing to their hopes and aspirations and by appreciating the learners point of view, we can penetrate the 'Social Skin' to make learning a joyful exercise and experience.

The survey of 25 members of the target audience indicated that more house wives were used to television viewing and radio listening. Many of them had a reading habit and a few visited cinema halls occasionally. About the impact of the media, a majority of them claimed a better awareness on health, hygiene, medical treatments available, home economics and news events. The suggestions given for the betterment of the media included: preference for cultural programmes, purposeful social serials, less of cinematic presentation, increase of health education programmes, quiz programmes and less numbers of commercial advertisements. The senior citizens in the group expressed a

desire for religious programmes on temples and traditional values. The author finds a greater need to strengthen the electronic media service.

The implication of the study indicated that women have a significant role to play. The literature – ancient, modern, the newspapers, periodicals, publications of the print media – have placed on record the contribution of women for their own self and others. If learning is an ongoing life long process, it means that women have to set apart a portion of their time daily for making the best use of the print media. It is desirable that women take to reading something or the other daily and keep abreast of what is happening around them. Besides, they can concentrate in their area of interest.

The author suggests the need for a monitoring agency to assess the media work. It could be government department or a private social club. A constructive criticism and ample check points will help the producer to follow the guidelines and ensure rich meal to the viewers. The audience have to be provided all facilities and forums for a healthy interaction and mutual understanding. If media have to function as effective educational tool, they are to be nodal agencies for anticipated changes. Another suggestion is that all the mass media have to coordinate their efforts to serve the cause of education. The author is of the view that women can combine home, career and education.

The objective of Amal Datta's survey is to evaluate the growth of television and its network in India, and to find out: the general viewing pattern of exposures of viewers to Doordarshan, cable and satellite channels; the perception of viewers regarding round-the-clock telecast and its impact on society, particularly children; the effects of late night viewing on the job performance of viewers; the effects of late night telecast upon the children's study and their health status; how far the present day television is helpful to the younger generation; the extent of ill effects of television as perceived by viewers in general; and the viewers preference of channels for watching television programme (pp 3-4).

The study is based on primary data collected through field survey and on secondary data collected from various reports and published material. The selection of sample area was done with the aid of 1991 Census report. The 20 urban wards out of the 143 wards of Kolkata Municipal Corporation, were selected from all the four districts of Kolkata city by taking the Doordarshan Kendra in the center. Similarly, for rural area, 10 villages (5 from each of the *community* development blocks) of South 24 Parganas District under the primary coverage areas of the Kendra were selected. In all, 200 urban – 10 from each ward – and 100 rural households – 10 from each village – were included in the study. One member aged 12 years and above from each television household was interviewed.

There has been phenomenal growth in the expansion of television network. Today 135 different cable and satellite channels, apart from Doordarshan channels, are available for downlink and distribution among television homes of the country. With the cable television networks expanding their reach, more and more satellite channels beam T.V. signals across India. The growing purchasing power triggered by a booming economy, has created enormous scope for niche and regional subject specific channels. The people in West Bengal are having Doordarshan, National channel - DD 1, DD News, DD

Bangla, ETV Bangla, Alpha Bangia, Tara Bangia, ATN Bangla and ATN Kolkata channels telecasting Bangali programmes since the year 2000 throughout 24 hours in a day. Another channel in 2001, Akash Bangia started its 24 hours-a-day programme. At present there are a number of local channels viz., Bangla Ekhan, Channel Vision, Amar Channel Vision, Sonnar Bangla Varsha, Fortune, etc., apart from CTVN1 and CTVN2 available in Kolkata which are mainly for entertainment. Fortune and Sonar Bangla telecast items on astrology, CTVN also telecast astrology programmes apart from films and other programmes. Along with DD channel, majority of other cable and satellite entertainment channels, sports channels, science and nature channels, entertainment channel for children, fashion and religious channels etc. are also available in West Bengal. All these channels are mainly 24 hours channels.

The results indicate that all the respondents within the primary area of coverage (both urban and rural) watch television. However, comparatively more respondents in rural area reported watching T.V. regularly than those in the urban areas. As a whole, regular viewing has been comparatively higher among females than males. Age-wise, regular T.V. watching has been higher among 45-54 years age group in rural areas, while in urban areas, regular viewing is higher among below 15 years and among 55 years and above. Education wise regular viewing has been comparatively higher among undergraduates, followed by below high schools and illiterates. As a whole, regular viewing is found slightly higher in non-cable and satellite respondent television householders than cable and satellite respondents.

Comparatively, in 1998 television occupied the highest position in terms of media reach followed by print media, cinema and radio. Regarding the time of viewing, majority of respondents normally watch T.V. regularly during the period 8.00 PM to 10.00 PM, followed by 10.00 PM to 12.00 PM time slot. DD Bangla channel is viewed by the highest percentage of viewers, followed by DD1 and DD Metro channels. Taking ill effects into account, it was found that it contributes to: lack of concentration in study; problems of eye sight; behaviour problems; disturbance in eating habits; problems of less interaction with society and no play time.

Surprisingly, about one-fifth of the respondents did not favour the present day T.V. useful, the reasons being that all the programmes are not good and suitable to all; many of the channels show such obscene and unhealthy pictures/programmes which have been gradually spoiling our society to great extent; pictures/serials containing horror and unnatural death sequences ill-effect the younger generation; many of the advertisements showing products/cosmetics/ladies garments full of obscene/sexual provocation also effect the society and old age culture adversely; and many of the T.V. programmes/serials/films at present cannot be watched along with family member due to adult sequences. In case of channel preferences, viewer showed a preference for entertainment programmes followed by films, news, music, informative and sports programmes.

Overall, it may be said that the television media can provide considerable benefits as well as drawbacks depending on how the viewers perceive the contents of the programmes in terms of family tradition, social and cultural values and norms. To

overcome the ill effects of watching television, the author suggests that a controlled viewing pattern according to the contents of the programme may be the best way. The ill effects of T.V. can be evaded by limiting the duration of watching by parents along with children and subsequent discussion with them regarding the content of the programme; banning the programme by which the parents feel offended; restricting the children to watch educative, informative, and also entertainment programmes by previewing which is fit for children; encouraging children to watch the programmes which demonstrate helping/caring/cooperation and which having contents of education/information that influence children to be more kind and considerate. Parents are required to be more selective and restrained when children are present at home.

In sum, the authors of the above two books have been associated with Doordarshan. They emphasize the utility of mass media in the cause of women's education and in enhancing their interest in acquiring knowledge, and also to minimize the ill effects of watching T.V. on children and adults alike. These books will be of interest to both professionals and general readers. The authors deserve complements for their endeavour.

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Madhu SINGH (Ed.): *Meeting Basic Learning Needs in the Informal Sector – Integrating Education and Training for Decent Work, Empowerment and Citizenship*. Dordrecht: Springer, 2005. Pages 250. ISBN 1-4020-3426-1.

This book is a part of the UNESCO series on Technical and Vocational Education and Training (UNEVOC) focusing on the perspectives of integrating education and training in the informal sector in developing countries. The overall purpose of the book is to describe and analyse the current practices, issues and challenges of technical and vocational education and training in the informal sector. The contents are presented in two different sections, i.e. general and cross cutting themes, and the case studies.

Changes in the world of work, mainly due to globalization, are placing new demands on the informal sector; for instance, it has to compete with cheap imported goods as never before. The principal assumption of the book is that the changes have caused the focus of training for employment to shift to generic rather than job-specific skills. Many different perspectives on and definitions of the informal sector have been attempted and some of them are discussed by the editor in the introductory chapter. In the informal economy, three sub-sectors have been distinguished by the International Labour Office (ILO), namely the small or micro enterprise sector, the household based sub-sector and the service sector.

These sub-sectors require special attention with respect to vocational and technical skills and are also largely dominated by women and the poor. People in informal sector

acquire more vocational skills and competencies in the context of their work experience, while they usually acquire their verbal, mathematical, and general skills in school. Promoting creative attitudes, independent thought and action, risk taking, initiative, problem solving and other skills must, therefore, be given high priority in informal sector training programs.

Before the era of intensive globalization, the informal sector was able to recruit and train people through apprenticeship schemes for a rather narrow and work-related competence. Anticipatory social learning took place to a large extent. That is, people knew more or less what was required in different occupations and workplaces and started to prepare themselves mentally for that. Nowadays, anticipatory socialization “continually grows more difficult” (p. 45), and a much broader competence is required. Training for the informal sector can no longer apply local standards but must meet world standards, due to the competition related to globalization.

The book is very rich in perspectives and information. However, due to space limitations, it is difficult to make justice to all the twelve chapters that bring out the complexity of the informal sector and are very rich in information. Instead, we have chosen to highlight the following themes that run through the book: gender issues; the changing requirements on and challenges for the informal sector; and co-ordination, linking, partnership and the role of NGOs. Some of these issues are also presented in the chapter on Introduction written by the editor. Instead, we have chosen to mention some salient and general features.

Gender issues: Women and poor people are over-represented in the informal sector. Often they have insecure and unstable low rank casual jobs. Most of them are self-employed. Since they tend not to have any “higher” skills, new technology makes them redundant. Also, there is discrimination in the work places; for example, the skilled male construction workers in the Indian case study refuse to transfer skills to women. The book, therefore, suggests an educational and training policy which is holistic and gender-oriented.

The changing requirements and challenges: Traditionally, in the informal sector, people learn a few skills that are essential for the firm concerned. This implies that informal learning often serves the interests of the employer rather than the learner. In the workshops, learning takes place alongside production, and there are no programmes or curricula. Now there is need to think of professional training in a broad sense and not simply as occupational training alone. Growing importance is being attached to cultural issues, since values, norms and beliefs guide people in their life (including their working life). Due to the complexity of the informal sector, a diversity of training programme is necessary. However, according to the editor and the authors, neither formal education nor non-formal and informal education alone are able to provide the necessary education and training.

Co-ordination, linking, partnership and the role of NGOs: When it comes to state-organized non-formal training, many ministries are often involved. Also, the state representatives generally do not know the diversified educational and training needs and

requirements of the informal sector quite well. Here, the NGOs play an important role as a “mediator” between the formal and the informal sector. Co-ordination, if not the partnership, is suggested by the authors to remedy this situation, and in this co-ordination, NGOs have and should have an important role. However, NGOs suffer from several insufficiencies, such as small scale endeavours, tendency to be urban-based, lack of funding, and their long term sustainability is uncertain. The authors, therefore, also suggest more inter-institutional collaboration in order to bridge the different sectors, sub-sectors and training programmes. Case studies of the Indian context clearly demonstrate the need for an institutional mix and linking between formal, non-formal and informal education.

The country studies cover Bangladesh, Nepal, and Latin America in general and there is one chapter specifically on Nicaragua, and three chapters on India; they deal with very different economic activities and training programmes.

Overall, it is an interesting book but some critical issues should be mentioned. First, a very determinant role is given to formal education. Practically, all authors argue that formal basic education should be more adapted to the national and local realities of the developing countries, mainly through vocationalization of formal, basic education. However, we also know that, due to globalization, among other things, more and more knowledge is required for the formation of a general (citizen, producer, consumer...) competence. In other words, people have to learn more and new things in basic education in order to be able to handle the impact of globalization processes on their life situation. This fact places education under pressure to deal with more and more aspects. One way to do this is to increase the number of hours that children spend in school. On the other hand, to adapt education to contextual conditions is desirable but will most likely also require more time in school. Another aspect implied here is the impact schooling can have. Formal education is generally seen as a panacea; it is expected to solve a whole range of societal problems and is seen as a key to a better life and a better society. However, increasingly there are indications that education cannot make it alone – at least not in low income countries.

Another issue is the selection of cases. No case in Sub-Saharan Africa is included in the book; this continent is hardly mentioned. The conditions for and the nature of the informal sector on this continent are most likely somewhat different from those in Asia and Latin America. Third, the chapters are, to a large extent, written by practitioners or policy-makers and not by scholars. Yet, many normative statements and generalizations would need references, since many of them are questionable or at least not unchallenged. Fourth, it is a pity that this interesting and informative book suffers from many factual errors and spelling and language errors.

In sum, as pointed out in the introductory chapter and some other chapters, very little research (and mostly from economic and sociological perspectives and not educational perspective) has been conducted on the informal sector.

This book is rich on information and perspectives useful for scholars, policy-makers and parishioners and is, therefore, a welcome contribution to the field of knowledge.

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Takyiwaa MANUH, Sulley GARIBA, Joseph BUDU and James CURREY (2007): *Change & Transformation in Ghana's Publicly Funded Universities*. Oxford and Woeli, Accra. Pages 175, ISBN 978-0-85255-171-4 (Paperback). Price £14.95.

Higher education plays a crucial role for a holistic development of a nation, and no doubt, shows the right path to follow for social, political and economic advancement of the nation. In this context, Ghana having the connotation of Heavily Indebted Poor Country (HIPC) needs to go a long way to achieve betterment of its people, society and the nation as a whole. The system of higher education in Ghana has an imperative role to bring a structural change for its nation. But the concerning universities in this nation have been challenged both internally by their own publics and externally by governments and communities to address the critical issues like expanding access with equity, quality and relevance, knowledge production and its application to the problems facing the society, sustainable funding and resources management. Ghana's public universities have faced competition from offshore universities as well as from non-university centers of knowledge production and research. The context of this new competition is followed by neo-liberal economic policies characterized by market led reforms and private sector initiatives.

The present publication analyzes the different strategies and measures that the universities have taken to expand enrolment, generate additional funding and review curricula and modes of operation in an attempt to respond to the emerging challenges. Its overall goal is to generate increased policy and challenges of higher education in Ghana. This study represents the first structured attempt to combine qualitative and quantitative analysis of the state of public universities in Ghana.

This book is compiled in two parts having ten chapters. Part one consists of three chapters and the second part has seven chapters. The first chapter spells out the background to the study, setting out study objectives, scope and methodology and the conceptual framework adopted by the study. It provides opportunities for interaction with the other segments of the tertiary educational system, like the polytechniques and emerging private universities which present challenges and opportunities for co-operation. The methodology used in the study is highly participatory, and involves research techniques like focused group discussion, questionnaire and review of

documents. Some special investigations have been made on libraries, gender and Information and Communication Technology (ICT). The theme of the study is to examine the interface between university practices and their ongoing impact on the society and economy. In this chapter the author has applied Sen's idea on development with a special reference to his book '*Development as Freedom*'.

Chapter two deals with the socio-economic aspects of the country. Ghana is an agriculture based country as 38 percent of its GDP is derived from agriculture. More than 40 percent of the population is living in extreme poverty and its Human Development Index (HDI), according to 2003 estimation is 129 out of 179 countries. In its strategy to reduce poverty, the country has given emphasis on developing basic education, since half of Ghanaian population is unable to write a simple letter and less emphasis has given to tertiary education.

In third chapter the authors lay emphasis on the system of higher education, including a brief assessment of the universities relationships with other institutions in Ghana. They also examine government-university relations over time and their impact on the performance and prospectus of the publicly funded universities, as also whether these relations have highlighted the structure or impeded the universities ability to endure pressures from within and without. The 1992 constitutional provision on education and the targets set in the vision 2020 document have been emphasized in this chapter. The Ministry of Education, takes the responsibility for translating national educational goals for human development into policy initiations.

The fourth chapter deals with knowledge production with a focus on university mandates and the policy context, research programmes and resource devoted to them in universities budgets. It also explores the role of post-graduate training in expanding research capacity and the collaboration among Ghanaian universities and with other research centres in Ghana and elsewhere in Africa. Issues affecting knowledge production and research in Ghanaian universities under conditions of increasing student enrolment, inadequate staff and stagnant budgets for research and libraries, are also disused. The authors have recommended that there is a vital need for all Ghanaian universities to adopt explicit policies to promote and fund more for basic and applied research.

Issues surrounding access with equity, highlighting the fact that increased enrolments don't necessarily mean equal opportunities of access for different groups of people are explained in chapter five. Here, the challenges of access and equity in higher education are examined in the light of evidence obtained from interviews and surveys of students and faculties. Chapter six highlights the issues of human, physical and financial resources management and institutional development, and examines the variety of funding sources. The authors have recommended that a vision can only be realized through the effective harnessing of the appropriate resources to specific objectives and ensuring their availability in terms of quality, quantity, timeliness and adaptability to changing need. The issue of HIV/AIDS is the main problem in knowledge production universities, but this has not taken a serious thought among experts.

Chapter seven explains the use and management of Information and Communication Technologies (ICT) in Ghana, especially for economic development. It describes the need of university leadership for ICT development and a persistent effort by institutions that could have significant impact on it. The Ghana *ICT for Accelerated Development* (ICT4AD), promulgated in 2003 has focused on the use of ICT for education. Here the authors give a message that the use of ICT yields information processing and storage advantages of vital importance in 'knowledge industry'. Given the recourse-intensive nature of ICT facilities, this is a fertile area for collaboration among institutions, despite the earlier setbacks that have occurred.

The issues of university governance and participation are examined in chapter eight in the context of leadership, institutions and system for decision making, including the strategic planning of change in academic and non-academic affairs. A gendered analysis of enrolment, attitudes and practices as well as intutional manifestations of gender inequalities is presented in chapter nine. It has focused mainly on the levels of participation of females and males in various sectors. In Ghana universities, gender did not seem to be a conscious issue on their agenda. The public universities in Ghana have no gender policy and their policy frameworks are not attuned to gender concerns. But after interviews and discussions with vice-chancellors in most of the universities, it is understood that there is a clear need for gender related policies to ensure that gender equality is a value, upheld in academics. It is inferred from the enrolment data of the boys and girls in junior and senior schools that there has been an increasing trend of girls' enrolment during 1991-2001. A wide range of gender related courses were incorporated in curricula, and students, staff and faculties seem to favour gender related courses.

The concluding chapter deals with challenges and lessons to be drawn from the foregoing analysis and proposes some recommendations. Despite the emergence of private universities and other centres of knowledge production and dissemination, the authors argue that public universities play an indispensable role in Ghanaian higher education and thus in national development.

This book provides a clear-cut picture on the whole system of tertiary education in Ghana. It has explained the role of education beyond its functionalistic prerequisites of economic growth. An enhancement of holistic concept of development has been employed to reconceptualize education as a value in itself. The authors have recommended that identifying best practices, fostering cooperation and institutional learning are the necessary steps towards enhancing the role of Ghana's public funded universities in an ongoing national endeavour to achieve vision 2020 with special reference to '*Development as Freedom*'.

OECD Report (2005): *Education and Training Policy: Teachers Matters* (Attracting, Developing and Retaining Effective Teachers). Pages 237. ISBN 92-64-01802-6. Also available on the website <http://news.sourceoecd.org/education/9264018026>

Brought out under the series *Education and Training Policy*, the present publication can serve both as a guide and cue for prospective government surveys and research, besides offering an insight into the type of trained teachers the governments should employ as a policy. There are not many books on the subject and there are fewer still that deal with research related to policy. For instance, in India we have not yet learnt (when we are being repeatedly reminded that we are on the threshold of entering a new of high-tech era) how to train teachers, let alone 'effective' teachers? The bodies like the NCTE, have no use for policy related research as they continue to live in a cuckoo-land of their own creation, totally unrelated to the world they claim they govern.

It does not mean that we know for sure and can undisputedly define in clear terms as to who is a 'good' or an 'effective' teacher or we know precisely how to prepare reasonably well a teacher that would suit a high-tech (knowledge) society. Despite all these and several other limitations, the analysis of the researches conducted in the area in the OECD countries could inform our decision making processes and help formulate policies that would yield results.

Presented in 7 chapters (with two appendices, (1) How the activity was conducted?; and (2) A Framework for Informing Teacher Policy, the present publication is a compulsory reading matter for those who are faced with the twin problems of how to prepare 'effective' teachers and how to retain such a body of men and women that mean a lot to the country that is trying to compete and survive in a world of cut-throat competition. This book is all the more relevant to us Indians who are not bothered to take into account the hundreds and thousands of scholars that are unwilling to study here, since they can afford they have no desire to sully their minds with the outmoded curricula and inefficient teachers that function in majority of our colleges and universities. We do not have world class/high-tech institutions that could attract our upper and upper-middle classes with the quality and the wares they offer.

Be that as it may, I take up now each chapter for review and discussion. Let me also record here that 'within OECD the project was carried out by the Directorate for Education's *Education and Training Policy Division* under the leadership of the Division's Head Abrar Hasan, Philip McKenzie and Paulo Santiago.'

The first chapter as usual deals with the introduction of the theme and the rationale of the study, besides giving details of the methodology followed and the manner of its presentation. It may be read closely by those who wish to enter this area for further or future research.

The second chapter deals with the theme of the book, i.e., Why is the teacher policy so important? It is here that we come to know that ordinary teachers simply are not good enough for a 'knowledge society'. The advanced countries are already 'knowledge' societies that thrive on innovations and excessive concern for their future.

The third chapter is titled 'Making Teaching an Attractive Career Choice'. The subheads are self-explanatory. For example, 3.1 relates to Concerns about Teaching Attractiveness; 3.2 Estimates the Future Demand for Teachers; 3.3 Factors in the Attractiveness of Teaching as a Career; and 3.4 Priorities for Future Policy Development. This chapter is particularly important because it talks of the shortage of teachers in Mathematics, Science, ICT and Languages. If one can recall, at one time in UP, special concessions were made to recruit teachers in Mathematics and Sciences. Not only good teachers are hard to find in these subjects but the content they are supposed to teach must also get updated with the passage of time. This is more so in Sciences and Mathematics. Innovative teaching in languages – especially with the help of ICT is on the cards. Teachers colleges have to think of all these developments and prepare themselves accordingly. One should always remember that while there are areas wherein there is oversupply of teachers, there are others where shortages continue to bother planners and administrators.

Chapter 4 is titled 'Developing Teachers' Knowledge and Skills'.

Here the major concern is all about the pace of social change and the heightened expectations of schools. The book clearly mentions that future teachers "need to be capable of preparing students for a society and economy in which they will be expected to be self-directed learners, able and motivated to keep learning over a lifetime: in their preparation, their professional development and their working lives, today's teachers must get a grasp of and a grip on the *knowledge society* in which their pupils live and work."(p.97) Teacher certification for employment is also dealt with here. This relates to teacher licensing – a practice which is totally unknown in this country.

Chapter 5 deals with 'Recruiting, Selecting and Employing Teachers'. This chapter deals with the practical problems employers and selectors face because, as it is, there is a terrible mismatch of the quality that is on the offer or available and the ones that are in demand.

Chapter 6 'Retaining Effective Teachers in Schools' should be of particular interest to us Indians. There is a mention of the fact that good teachers and their offered salaries have very low correlation. There is an urgent need to precisely identify and record what other factors, besides salaries, tend to influence career choices. Thus far this area remains beyond ordinary knowledge.

Last chapter 7 deals with 'Developing and Emerging Teacher Policy'. I believe that this part of the chapter is worth reading word by word. Here the book details the gaps in information about the profession and the professionals that need to be filled in for a correct policy makeup. "One of the main challenges for policy makers facing the demand of a Knowledge Society is how to sustain teacher quality and ensure that all teachers continue to engage in effective modes of ongoing professional learning."

Appendix 1 gives an idea of how this activity of collecting data and the writing of the present book came about. And the next appendix is even more useful because it contains 'A Framework for Informing Teacher Activity'. This part of the book should be of great

interest to our research scholars because generally they lack precision and understanding data relevance.

Did I say that this book should be read by all academics and particularly by those whose knowledge needs serious updating?

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Edward N. WOLFF (2006) *Does Education Really Help? Skill, Work, and Inequality*. A Century Foundation Book. Oxford University Press, New York, pp.308 (hardbound) ISBN: 0-19-518996-5

The title and the name of the author of the book under review will remind the readers another famous book by a similarly named author and a similar title, via., Alison Wolf's *Does Education Matter? Myths about Education and Economic Growth* (London, Penguin, 2002). Alison Wolf's answer to the question she posed was negative: no, education does not matter. According to her, it is not certain that education promotes economic growth; and spending on education does not translate directly into more economic growth. In Wolf's view, such a view that education promotes economic growth is not only harmful to education, but also in many of its underlying assumptions, simply wrong. Wolf further concludes that whether or not economic growth follows education, educational growth certainly follows economic development. The book by the professor of management, which questioned the conventional wisdom and criticised particularly the human capital theory and the assumptions underlying the human capital theory, did not, however, receive much attention of the economists, particularly the human capital economists, including Edward Wolff, Professor of Economics at New York University and a Research Associate at the National Bureau of Economic Research.

In contrast to Alison Wolf's, Edward Wolff's answer to the question he raised is clearly in affirmative, though he raises a few important questions in the form of paradoxes. Wolff is more concerned about inequality and the role of education in reducing inequalities. The main puzzle Wolff poses is simple: in the USA educational levels of the population have improved remarkably during the last six decades; but inequality in the distribution of family income had remained virtually unchanged from the end of the World War II to the late 1960s, and then increased sharply later; the poverty rate which had fallen between 1959 and 1973, has since risen; and as the skill levels of the labour force increased, real wages have fallen. How can one explain these paradoxes? Edward Wolff presents a very thorough analysis of these and related aspects.

An important issue that Wolff is concerned with refers to the excess of the educational attainment of the population over skill requirements. Here one gets reminded of another famous book, Richard Freemans' *The Over-Educated American* (New York:

Academic Press, 1976). Wolff and also Freeman have argued that education in US is overinvested, eroding its marginal contribution to growth. Other related major paradoxes that Wolff examines in the present study include growing bifurcation between wages and skills, the breakdown of the connection between productivity and wages, the lack of correspondence between growth in skills and education and growth in productivity, sources of growth in employment in information sector, growth of skills of workers in export and import industries, the role of technological advances, capital investment, R&D intensity, pace of computerization, etc.

Based on an impressive empirical analysis of data for the last fifty and odd years, i.e., since 1947 to 2003 on US economy on poverty, employment, occupational distribution of labour, productivity, trade, family incomes, labour earnings, years of schooling of workers, skill acquisition, rates of profits, technology, R&D, structure of labour markets, knowledge works, labour unions, capital investments, tax rates, etc., Wolff makes a bold attempt of unravelling some of the puzzles. The detailed statistical and econometric analysis throws light on several more important issues. On the central question, viz., the convergence of education and skills and divergence of incomes, Wolff finds the following as the factors that have caused income inequality: skill-biased technological change that leads favouring of highly educated over less educated workers, declining unionisation that may have widened wage differentials among different types of jobs, growing international trade that may have caused the wages of low skilled workers to fall and declining minimum wage in real terms that may have also put downward pressures of the wages of the low-skilled workers. Wolff provides strong time-series data based evidence to show that the acceleration in computer investment has played a significant role in explaining rising inequality in incomes in the USA. Particularly the 'new economy' characterised by massive investments in computers and information technology seems to be behaving a different way not only in USA, but also in many other countries, specifically the developing countries, with such investments being negatively associated with the growth in average earnings.

Though Wolff claims that his research evidence casts doubts on the general policy consensus that (a) expansion of education and skills will lead to high-paying jobs and hence to an increase in real wages, (b) a more equitable distribution of skills in the labour market will reduce inequality in wages, and (c) investment in human capital will help promote growth in productivity and thus boost wages, etc., his analysis does not basically question the importance of education and skills in economic growth. He only shows that changing labour markets and institutions may have eroded the potential role of education in economic growth, and that demand has been overtaken by the supply of skills. He also suggests a few reforms in the labour market: (i) restoration of minimum wages, (ii) extension of the earned income tax credit, that provides supplementary pay to low wage workers in the form of a tax credit on their federal income tax return, (iii) reform of the tax and transfer policy to be more redistributive, and (iv) empowerment of labour force. Here comes the importance of 're-skilling', and skill upgradation, which Wolff, however, does not refer to. The 'new economy' everywhere requires skilled labour force – but

labour force with dynamic skills. Hence there is a need for continuous re-skilling and deskilling of the labour force. Wolff, however, rightly argues that market forces alone or government intervention in the education will not revive growth in earnings or reduce inequality in earnings; on the other hand, solutions will have to be found in the arena of political economy and a revival of the labour unions and labour movement, an argument that many in the neo-liberal economic framework, do no favour much.

One may not necessarily agree with Wolff's conclusions and policy recommendations, but his analysis of changing labour markets in the USA should be of considerable interest to many, as it unravels quite a few important dimensions on the role of education and skill development. Finally, does Wolff question the human capital theory? Certainly not, though he raises several puzzles. But more importantly, it is now widely acknowledged that the role of education in economic growth depends upon the very level of development of the countries (e.g., see Philippe Aghion and E Cohen: *Education et Croissance*, La Documentation Francaise, 2004). So what is true of US or some developed countries, may not necessarily hold true in case of other countries. At the same time, though the whole analysis by Wolff is confined to the US labour markets, it can be noted that many other economies – developing as well as developed, in the increasingly globalised world, experience similar trends, and this makes Wolff's study relevant and interesting to many scholars in the non-US world as well.

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CONTENTS

The Editor's Column

Articles

The Meaning and Measurement of Development Paul Streeten	1
Relative Efficiency of the Selected Agro-Processing Industries in Punjab Rajiv Khosla, H. S. Sidhu and Sharanjit S. Dhillon	11
Impact of Globalization on Agrarian Transformation in Arunachal Pradesh M. A. Salam	19
Nature and Extent of Unemployment among the Weaker Sections in the Rural Areas of Haryana: A Multi-Dimensional Approach Dalip S. Thakur and Neeraj Sharma	34
Mainstreaming Child Labour – IFFDC Experience H. C. Gena and P. S. Marwaha	40
Employment Generation Through Rural Industrialization Programme: A Case of Karnal District in Haryana Veeran Rani and Raj Kumar	48
Leadership Qualities for Performance Management – A Case Study of India Public Sector Banks S. B. Singh	59
Curriculum Analysis and Methodology of Teaching of Visual Art Education in Secondary Schools of the C. B. S. E : An Evaluative Study O. P. Parameswaran	68
Agrarian Crisis in Punjab: An Overview Sikander Singh	77
Poverty, Growth and Environment Nexus Revisited – Linkages and Policy Options Neeta Tapan	82

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Vol.27 January - March 2008 No.1

CONTENTS

1.	Levels of Living in North-East India in Reforms Era -B.Sambi Reddy and K. Jayasree	1
2.	A Study of the Saving and Micro-Credit Programme (SMCP) in Eritrea -Jiban Chandra Paul & Gebremariam Woldemicael	19
3.	Concurrent Monitoring as a Means to Identify the Structural and Procedural Gaps in Planning: The Record of Kerala Development Programme -Jos Chathukulam & K. Gireesan	37
4.	Vechtdal Food Community, A Case of Regional Agriculture in the Netherlands -Harry Donkers	67
5.	Development and Displacement: An Orissa Experience -Dilip Kumar Panda and Narendra Kumar Behera	91
6.	Planning of Watershed Projects in India: A Critical Review of Government Funded Projects - Pradeep Kumar Mishra	111
7.	Gender and Social Analysis of Dairy Farming: A Case Study of Punjab - Rupinder Kaur	129
8.	Sericulture-based Micro Enterprise as a Source of Rural Livelihood and Poverty Alleviation: A Case Study of Anantapur District (Andhra Pradesh) -Teki Surayya, K.N.Krishna Kumar, Rekha Sharma, Shikha Kalra, Samir Stephen Kujur, sanjay Bala and Bijendra Basnyat	149

BOOK REVIEWS

1.	Agricultural Diversification and Small Holders in South Asia by P. K. Joshi -Ch. Radhika Rani	177
2.	State Finance in India by V.P.Gupta - Shankar Chatterjee	181
3.	A Decade of Decentralisation in Kerala- Experiences and Lessons by M.A. Oommen -E.Venkatesu	183
4.	Sustainable Agriculture in Drought Prone Regions by Dasaratharamaiah K. and Jayaraj M -V.Suresh Babu	185
5.	Disability and Social Exclusion in Rural India by Insaklasingh - Y. Bhaskar Rao	187
6.	Successful Experiments in Rural Development / Livelihoods By Amitabh Bhatnagar -S.K. Singh	189

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CONTENTS		
SUPPLEMENT TO THE CONFERENCE NUMBER: JULY-SEPTEMBER 2007		
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Conference Keynote Papers		
Trends in Rural Finance		<i>K.G. Karmakar</i>
Linking Smallholder Livestock Producers to Markets: Issues and Approaches		<i>Pratap S. Birthal</i>
Risks, Farmers' Suicides and Agrarian Crisis in India: Is There a Way Out?		<i>Srijit Mishra</i>
Summaries of Group Discussion:		
Trends in Rural Finance		<i>S.K. Tewari</i>
Trading in Livestock and Livestock Products		<i>P.S. Birthal, Anjani Kumar and T.N. Datta</i>
Risk Management in Agriculture/Rural Sector		<i>Bharat Ramaswami</i>
ARTICLES		
Trade Protection of India's Milk Products: Structure and Policy Implications		<i>K. Elumalai and R.K. Sharma</i>
Tea Industry in India: Problems and Prospects		<i>Pramod Kumar, P.S. Badal, N.P. Singh and R.P. Singh</i>
An Economic Analysis of Adoption of Integrated Pest Management in Groundnut		<i>C.A. Rama Rao, M. Srinivasa Rao, P. Naraiah, B. Malathi and Y.V.R. Reddy</i>
RESEARCH NOTES		
Ring System Required for Farm Futures		<i>Madhoo Pavaskar</i>
Determinants of Vulnerability to Food Insecurity: A Gender-based Analysis of Farming Households in Nigeria		<i>R.O. Babatunde, O.A. Omotesho, E.O. Olorunsanya and G.M. Owotoki</i>
Stabilisation Value of Groundwater in Tank Irrigation Systems		<i>K. Palanisami, Masahiko Gemma and C.R. Ranganathan</i>
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CONTENTS

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