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BOOK REVIEWS

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Australia's Funding Schemes in Post-secondary Education and Disadvantaged Students[#]

Gerald Burke[*]

Abstract

Post-secondary education, considered in this article, comprises higher education and vocational education and training (VET). The Australian government provides grants to universities for about 60 per cent of the tuition costs with undergraduate students paying fees for the remainder but largely funded by income contingent loans. The publicly subsidised VET sector has been supported by government grants, with relatively very low fees and near zero fees for the less advantaged. In 2012, the Australian government removed caps on the number of bachelor degree places it will fund in higher education. Roughly similar open-ended schemes for many VET courses have been introduced by state governments. The article outlines the structure of post-secondary education, participation rates in total and for less advantaged students against the funding arrangements.

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[#] A revised version of a paper given at the European Access Network World Congress on Access to Post-secondary Education: Connecting the Unconnected, October 7-10, Mount Royal Centre, Montreal, Canada

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Introduction

This article focuses on the financing of post-secondary education in Australia, particularly as it affects the less advantaged. It considers both the higher education sector and the vocational education and training (VET) sector and makes comparisons between them.

The article reviews:

- Australian post-secondary education system and changes in participation
- Funding: total per student and the sources of funds; fee offsets for the less advantaged; additional funding for higher learning needs; grants for living expenses
- Efficiency in the use of funds and the importance of quality assurance
- Summing up the past and future prospects

Post-secondary education in Australia is broader than that considered as tertiary education under the International Standard Classification of Education (ISCED). Courses for a bachelor degree or higher degrees (ISCED 5A and 6) are provided in higher education. Courses for diploma and advanced diploma (ISCED 5B) are largely provided in VET. The main provision in VET is in Certificates I-IV. Certificate IV is rated ISCED 4B 'Post-secondary non-tertiary'. Certificates I-III are rated under ISCED as at secondary level. VET institutions also provide second chance courses which would also be considered as secondary level.

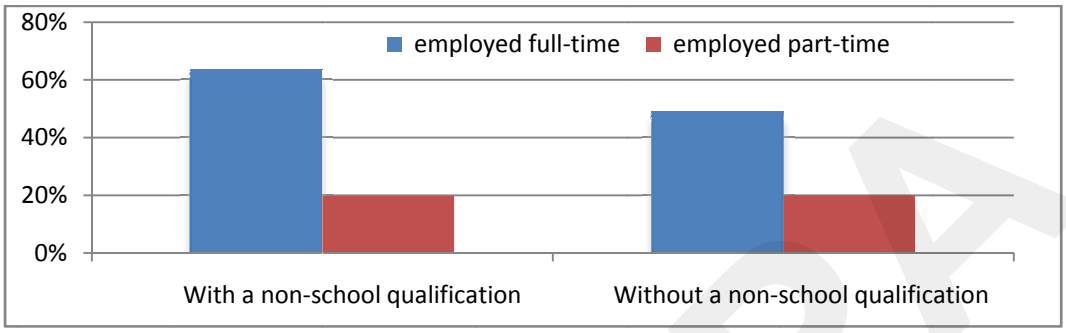
Australia has a high participation rate in education and training among persons aged 20 and over despite relatively high fees in the higher education sector. This is partly explained by:

- government income contingent and subsidised loans available to cover tuition fees for all domestic undergraduate students in the higher education sector, with repayment waiver for persons who later have low incomes;
- means tested government grants for living expenses for about 30 per cent of full-time students;
- very low fees, until recently, in vocational education and training (VET).

But disadvantaged groups remain relatively under-represented, though particular groups have improved their position over time.

The case for assisting the less advantaged has been strengthened by the need, in Australia, to expand its educated/skilled workforce. Quantitative projections of the growth in employment by occupation and by qualification suggest an expansion in post-secondary enrolments is needed of at least three percent per annum for the next decade, about double the rate of growth in population (AWPA 2013). Achieving this expansion will require an increasing proportion of the less- advantaged to enrol in and complete courses. If achieved, this should promote social inclusion in a number of ways and, in particular, improve their subsequent workforce participation rates. Figure 1 shows the strong association of qualifications with full-time work in Australia. Of persons with a qualification, nearly 65 per cent are employed full-time compared with less than 50 per cent of those without a qualification.

FIGURE 1
Persons aged 25-64 with and without qualifications, percentage in full-time and part-time employment, Australia 2011



Source: ABS 2013a

The cost of helping the less advantaged to achieve post-school qualifications will be proportionately greater than the average cost per student. The less advantaged are likely to need supplementary tuition, mentoring and support with living expenses. However, even the simple financial benefits are estimated to far exceed the costs (AWPA 2013).

Post-secondary Education in Australia and participation

The level of courses taken by students and the number of students are shown in Table 1.

TABLE 1
Post-secondary Students by level of Education Australia 2010

	VET %	*Higher education %*
Doctoral Masters and other graduate courses	0	27
Bachelor degree	0	66
Associate Degree, Advanced Diploma, Diploma	13	3
Certificate Courses	67	0
Other courses	20	3
Total	100%	100%
Total ('000)	1,799	1,193

Source: NCVER 2012 and DIICCSRTE 2013

Higher education is largely provided by 37 public universities which enrol nearly 95 per cent of all higher education students. Alongside these are three private universities, and around 130 private higher education institutions.

In VET in 2012, there were about 70 large public providers providing about 70 per cent of the delivery of publicly subsidised courses. There were some 2,000 private VET providers receiving public money to provide courses. A further 2,500 providers were registered to provide nationally accredited VET courses but did not receive public funds. Reliable data on their activities are not available.

Universities can self-accredit courses against the Australian Qualifications Framework (AQF) as can some private higher education providers but VET institutions who wish to provide courses under the AQF must be registered to deliver courses. Courses for VET are constrained to have competency-based assessment and to be industry relevant (Karmel 2011).

The VET sector supplies skills not developed in higher education. About a quarter of VET students are on 'contracts of training' involving both employment and the provision of training. Nearly half of these are in apprenticeships in the skilled trades such as electricians and plumbers. VET also provides remedial education particularly in literacy and numeracy. A considerable number of VET students do progress to higher education but, until recently, they received relatively little credit. Those who are admitted to university on VET qualifications tend to achieve better results than would have been expected from their earlier secondary school results (Willis and Joschko 2012).

Participation Rates

Over 80 per cent of students now continue till the end of secondary school, with a higher proportion of them being females than males. The rate of school completion increased sharply in the 1990s, with a notable increase again in the last few years. About 60 per cent of all school- leavers move directly into higher education or VET. Over their lifetime, above 80 per cent of an age cohort are likely to enter some form of post-secondary education. About 70 per cent of persons aged 25-44 now hold either a higher education or VET qualification (ABS 2013a).

Some indication of the achievement levels of school-leavers is given by the OECD PISA tests administered to a sample of 15 year olds. Australia ranks well in average scores though recent results have fallen absolutely and relatively. Australia is ranked' high quality and high equity' on PISA, though on equity it is not significantly better than the OECD average and a larger proportion of the scores are explained by socio-economic (SES) background than the average (Thomson et al 2013).

The number of domestic students in higher education and VET has continued to increase on average at about double the rate of population growth in the last 20 years, and much faster than the population aged 15 to 45 which is growing relatively slowly. VET grew the more strongly in the 1990s and higher education, more in the 2000s.

Table 2 gives a recent comparison of VET and higher education students by a number of characteristics. A much higher proportions of VET than higher education students are from lower SES, are Indigenous, have a disability, are from outside the major cities, are male or are aged 25 or more. In higher education, the proportion of females is over 55 percent, having risen from around 20 percent 60 years ago. Some 85 percent of VET students are part-time compared to 30 per cent in higher education where the courses also tend to be longer than in VET.

TABLE 2

Students by sector and demographic characteristics, Australia 2010

	VET	*Higher education*	*Total*
Total students including international* '000	1,799	1,193	2,992
Students as % of Australian population aged 15 to 64	12	8	20
Domestic students	1753	845	2598
Domestic students in two most disadvantaged SES quintiles '000	691	191	882
Students in the two lowest quintiles as percentage of domestic students	39%	*23%*	*33%*
	%	*%*	*%*
Female	47	56	51
Part-time	85	30	63
Indigenous	5	1	3
With a disability	6	3	5
Main language at home Non-English	15	17	16
25 and over	57	37	49
Major cities	56	77	63

NCVER 2012

* Most international students in VET are enrolled with private providers and not counted in the NCVER data. Over a third of international students in higher education are *off-shore* studying with overseas campuses or partners of Australian universities.

In higher education, the most under-represented segments, relative to their population, are students from remote areas, students with disabilities and students from low SES or indigenous backgrounds. It is common for persons to suffer multiple disadvantages, for example, most indigenous are in the low SES quintiles and Indigenous make up an above average proportion of the remote population.

Indigenous students in VET are disproportionately enrolled in lower level courses and have lower completion rates. They also have lower employment outcomes, noting that this reflects a wider problem in the economy where they have an employment to population ratio of about 45 per cent compared with over 60 per cent for all Australians.

Indigenous students make up less than 1.5 per cent of higher education students and about 5 per cent of VET students. The Indigenous population of all ages is about 2.5 per cent of the Australian total though it makes up a higher percentage of the younger age groups.

Persons with disability in VET are enrolled proportionately more in lower level courses but they report considerable employment benefits from their training.

On average, persons born in a non-English speaking country or the children of such persons have a good rate of participation in education. This, however, disguises the needs of particular groups and recent arrivals and of refugees, in particular, not revealed in aggregate statistics.

About 16 per cent of VET students and about 10 per cent of higher education students are from the lowest socio-economic status (SES) quintile. There are nearly 700,000 in VET from the lowest two SES quintiles or 40 per cent of domestic students compared with less

than 200,000 or less than 25 per cent in higher education. Bradley (2008) notes for higher education that low SES student are particularly under-represented in high status fields and the best universities.

Low SES students are poorly represented in higher education because they tend to have relatively poor scores in the assessments used for university entry. They also have a lower low rate of completion of secondary school. For those low SES students, who do enter higher education, their yearly transitions are not markedly lower than for other students (James et al 2008, Cardak and Ryan 2009).

Changes over time

Data over the last 20 years for higher education suggest that the proportion of persons from low SES fluctuated a little in the early 1990s but the average rate did not vary greatly upto 2008. However, in maintaining their share of growing enrolments, they increased considerably in number. There has been an upturn in the years 2008 to 2012, which were years of rapid expansion in total enrolments and in which programs for less advantaged were improved, as discussed in the section on funding below. A quite marked increase has occurred in persons with a disability though it remains relatively low. The proportion of Indigenous has also increased though it remains very low. The proportion from regional and remote areas has fallen.

In VET, the data are only available for a much shorter period. The proportion of VET students from the lowest SES quintile has been fairly constant in recent years. The proportion with disability and of the Indigenous has increased markedly and the proportion from remote areas has fallen (NVEAC 2013).

International comparisons

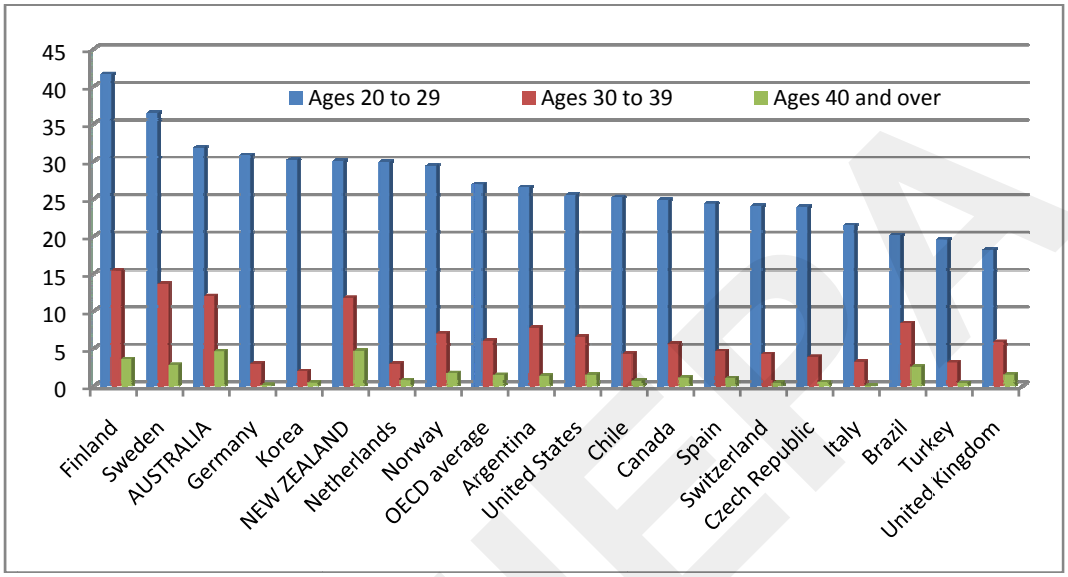
To see Australia's overall participation rates in comparison with other countries, Figure 2 provides OECD data on enrolments in any form of education by persons of age 20 and over. For Australia, these enrolments are almost entirely in higher education and in VET. Australia is third in the OECD for the 20-29 group, close to the top in the 30-39 group and for persons 40 and over is at the highest level with New Zealand.

Concentrating just on tertiary education type A as defined by ISCED (undergraduate degrees), Australia has an apparently high rate of persons entering by age 25. As shown in Figure 3 for countries for which such data are available, once the very high proportion of international students are removed, the rate for Australia falls though it still is about the highest level of those shown.

Thus, in considering the access of less advantaged, note must be taken of the fact that the shares considered are against an overall high rates of participation.

FIGURE 2

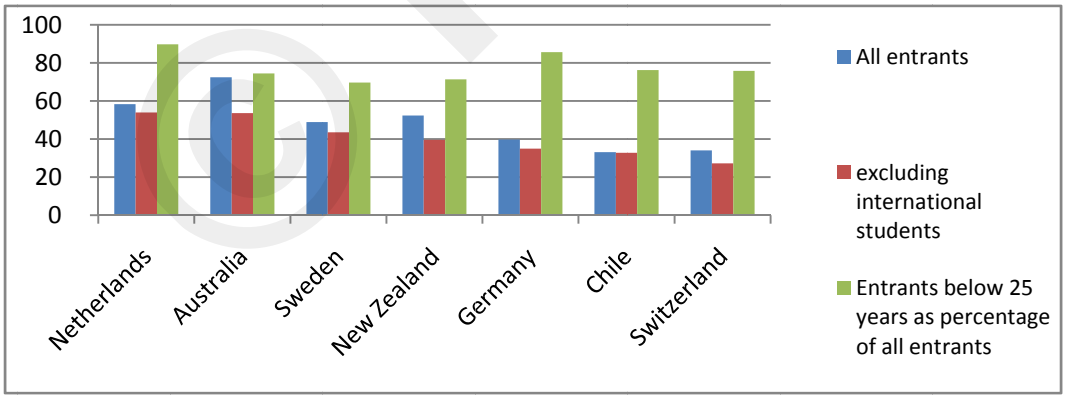
Enrolment rates by age, selected countries, 2010



Source: OECD 2012

FIGURE 3

Proportion of population entering tertiary type A education by age 25, Selected countries 2011



Source: OECD 2013

Funding

As with participation, attention is given firstly to the total and then to aspects of the distribution across the more and less advantaged. International comparisons are considered first as this indicates that the level of total funding and its distribution of funding are affected by a range of issues.

The OECD has shown that the countries with the high levels of entry into tertiary education include the Nordic countries, which have low or no tuition fees, and countries like Australia, the USA and the United Kingdom, which have relatively high fees. As will be discussed, the effect of fees can be mitigated if there are also, in place, a system of student support in the form of grants and loans. Systems, with substantial fees, increase the private share in total funding but they can potentially facilitate the support for a greater total enrolment and support for the less advantaged.

In summary, access to post-secondary education can be seen to be affected by:

- fees relative to government grants as components of tuition costs
- availability of loans, particularly income contingent loans
- capped or unlimited access to a place subsidised by government in post-secondary education
- support for the additional learning needs of the less advantaged, and
- support for living costs

The quantity and quality of post-secondary education provided to both advantaged and disadvantaged is also affected by:

- funding levels per student
- efficiency, including the responsiveness to education and training needs, and the assurance of quality

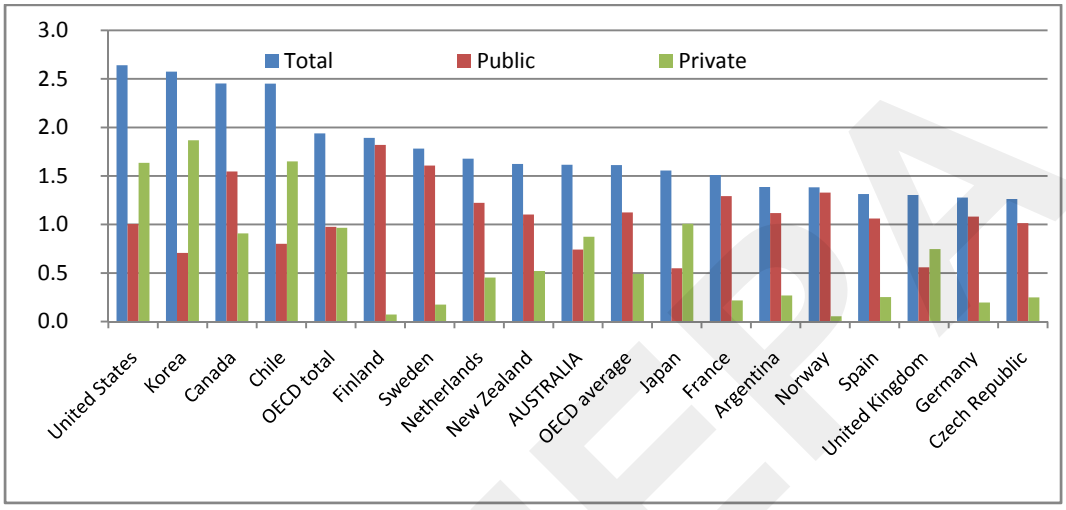
International data

Focusing just on tertiary education (as defined under ISCED), Figure 4 shows total expenditure, as a percentage of GDP, in Australia lies close to the OECD average. Australia is below average in public spending and above in private spending. Three of the top four countries in total spending, USA, Korea and Chile, have very high private spending and Canada, the third highest in total has above average private and public spending. Finland and Sweden, which have the highest *public* spending, rank well below the top four in total spending as a share of GDP.

The OECD estimates are the outcome of the application of the OECD framework across all countries but it is arguable that it leads to an overestimate of private relative to public spending in Australia. For example, the OECD treats all spending from income contingent student loans as private spending whereas perhaps a third of the loan outlays in Australia should be counted as a cost to government for the waiver of repayment for those who earn low incomes and the waiver of real interest (OECD 2012).

FIGURE 4

Expenditure on tertiary institutions, percentage of GDP, selected countries 2009



Source: OECD 2012

Only a small percentage of VET students in Australia, those at diploma and advanced diploma levels, are classified by the OECD as tertiary education so this chart predominantly covers spending on higher education.

Revenues in Australia

Total

Table 3 shows that less than 50 percent of funds for higher education institutions come from government grants. Loans to domestic students, to cover their fees, make up a further 15 percent. Fees from international students provide more than 15 percent of revenues. Specific research funding makes up around 10 percent, though an alternative estimate, counting a substantial proportion of teaching staff time as research, suggests a much higher proportion devoted to research. This Table covers all the revenues of the institutions and is much wider than costs of course delivery considered below.

Around 80 percent of funds for VET providers in the public system come as grants from government, about 30 per cent from the Australian government and 50 percent by the states. Fees from domestic students and overseas students each provide less than five percent of total funds.

A notable feature is that the overall revenues of higher education institutions is nearly thrice that of the VET sector.

TABLE 3

Higher education and VET institutional revenues, Australia 2012 $ million

Higher Education	$mill	
Australian government research funding	2145	9%
Australian government grants scheme, capital grants and other assistance	8778	36%
State government grants	478	2%
Australian government loans for domestic student fees (HELP)	3670	15%
Upfront domestic student fees	578	2%
Other fees	1363	6%
International student fees	4076	17%
Other	3544	14%
TOTAL	24632	100%
VET		
Australian government recurrent and capital grants	2468	28%
State government recurrent and capital grants	4521	52%
Other government agencies payment of fees	305	3%
Domestic student fees	357	4%
International student fees and international contracts	341	4%
Other fees	499	6%
Other	266	3%
TOTAL	8759	100%

Based on NCVER 2013 and DE 2013b. Excludes grants to students for living expenses, grants to employers of apprentices; and excludes private incomes of private providers.

Funds per student

Funds per student are not calculated in a uniform way across higher education and VET. Table 4 shows examples of the rates at which the Australian government funded public universities in 2013 and the maximum fee that the universities were allowed to charge.

TABLE 4

Fees and Australian government contribution per full-year student, higher education 2013

Funding Cluster		*Government contribution/ subsidy*	*Maximum student fee*	*Revenue per student*	*Government %*
1	Law, accounting, administration, economics	$1,900	$9,800	$11,700	16%
2	Humanities	$5,400	$5,900	$11,200	48%
…	…				
7	Engineering, science	$16,600	$8,400	$25,000	67%
8	Dentistry, medicine, agriculture	$21,100	$9,800	$30,900	68%

DE 2013a

A simple comparable illustration for VET is not possible. States have introduced very different systems of subsidy and pricing. In the state of Victoria, government contribution/subsidy rates are set per hour of training for all fields of study and course levels. The provider of training can set the fee at any level. In New South Wales, the level of fees to be charged is set as well as the subsidy level and a detailed list for 2015 has just been published. For a Diploma in Business for the whole qualification, the student fee is just over $2,500 and the government subsidy is $3,100 (NSW 2014). A diploma can provide credit for the first year of a university. The government subsidy to VET providers is higher than the subsidy to a university for a business course. The student fee charged is much lower. The total funding received by the VET provider, of $5,600, is much lower than the funds of $11,700 received by the university (though, as mentioned, part of the university funding might be attributed to research). The comparison cannot be taken too far as the Diploma in Business is often delivered in less than half a year even though Diplomas are listed in the Australian Qualifications Framework as normally taken in one to one and a half years. This lack of comparability of data across sectors in Australia inhibits precise analysis.

Trends in public funding

Table 5 shows the changes in estimated government recurrent expenditure in constant prices per student (or per hour of training) from 1999 to 2011 for government secondary schools, VET and higher education. For schools and VET, government funding up till now has represented well over 90 per cent of the funds for delivery. For higher education, public funding has represented about 60 per cent, with student fees covering on average about 40 per cent — but that fee is usually deferred with a government provided income contingent loan.

TABLE 5

Indexes of government real recurrent expenditure, Australia 1999 to 2011 (1999=100)

Year	*Government secondary schools*	*VET*	*Higher education*
1999	100	100	100
2005	118	93	101
2011	120	75	103

Source: AWPA 2013

For schools and higher education per full-time student; for VET per hour of publicly funded training.

Data in constant prices using the GDP chain price index

VET funding per hour of training fell by about 25 percent in real terms in 12 years to 2011. In higher education, government funds per student remained roughly constant. Government schools have had a 20 per cent increase in real funding per student.

The differences, across the sectors, appear to be due, not to any considered evaluation of relative need, but to the financing system, which has favoured funding of primary and

secondary schooling (Burke 2013). There has been no detailed public analysis of the relative needs of VET, schools and higher education.

One aspect of this, as noted above, is the relatively low funding for diplomas in VET seen as comparable to the first year of a university course. The Bradley review (2008) addressed the need for better coordination of the higher education and VET and recommended a common national regulator covering both sectors. It also recommended a tertiary entitlement funding model across higher education and VET commencing with diplomas and advanced diplomas and progressing to the other levels as soon as practical. These recommendations have not yet been implemented.

Fees and loans

Higher education

The Australian government in 1974 took over the provision of public funds in higher education previously shared with the states. It abolished fees for post-secondary education but there was a major reintroduction for higher education in 1989 accompanied by an income contingent loan scheme now called HELP (Higher Education Loan Program).

The 2013 rates of fees and the government subsidy per full-time equivalent student by fields of study were shown In Table 4. The average total funding per student in public higher education was around $16,500 per equivalent full-time student, with Australian government grants making up $9,500 and the student fee about $7,000.

Originally, the fee in higher education was the same for all courses but a three- tier level of fees was introduced in 1997, roughly reflecting differences in average public and private benefit from the various fields of study. A recent review argued that there was little justification for the current variation and recommended that fees for all courses make up 40 percent of the total funding for that course (Lomax-Smith 2011). This was not accepted by the government at that time.

Students are provided with the option of paying upfront or taking a loan, repayable through the income taxation system. Around 85 percent of Commonwealth supported domestic bachelor degree students took an income contingent loan in 2012 (DE 2013). No repayment of the loan is required until an annual threshold income is reached. It was $51,000 per year in 2013-14 which is about two-thirds of the average earnings of an adult employed full-time. Repayment is required as a percentage of annual income, starting at four percent and rising to eight per cent when income reaches $95,000 per annum. The threshold and the debt are indexed annually by Consumer Price Index (CPI), which is usually lower than the market rate of interest.

Non-repayment by low income earners is an accepted feature of the scheme. Recent estimates are that up to 20 per cent of loans will never be repaid (DIICCSRTE 2013b). The average debt was recently around $16,000 and the average time to repay about eight years. The debt, on completion of a course, at current fees would be much higher than this: nearly $30,000 for a three-year accounting degree and, perhaps, $60,000 for a course leading to qualification as a medical practitioner.

It was not to be expected that the introduction of fees in 1989 would improve the position of the less advantaged even with subsidised loans. However, the political bargain was that the revenues from repayment of loans would allow the government to increase the

number of places it supported so that access to higher education would continue to increase. This part of the bargain was kept in the early years (25 percent expansion in three years after 1988) and the share of low SES rose somewhat as well as their actual numbers. The growth rates in total enrolments in later years were lower and, in some years, total student numbers fell slightly and so did the SES share (Coutts 2010). Overall, the proportion of students from low SES background fluctuated somewhat and remained roughly constant but a constant share meant greater numbers of low SES.

VET

Public funding of VET is shared by the states and the Australian government. States maintain overall policy control of VET but sign agreements with the Australian government on objectives and outcomes. As mentioned, VET fees for publicly supported courses are subject to state policies and they are increasingly divergent. Students in VET from low income background are usually allowed a low concession fee and some, such as Indigenous, are exempt. Loans are available only for Diploma and Advanced Diplomas in VET and, so far, the proportion taking such loans is well below the rate for university students.

In summary, income contingent loans are available for in higher education and for diploma and advanced diploma courses in VET. Maximum fees for domestic undergraduate students in public universities are set by the Australian government. Maximum fees for publicly supported VET are set by some state governments but there is no restriction on fees for example, in Victoria. States maintain fee subsidies for less-advantaged students in most courses in VET but there are no concessions for fees for university students or nowadays VET diploma students who have access to income contingent loans.

International students

International students are a major source for funds in both higher education and VET. They are seen to subsidise the teaching of domestic students. International students make up a quarter of all students in higher education but provide as much revenue as fees from domestic students. There is no restriction on fees charged to international students. In Management and Commerce, where half the international students are enrolled, the University of Melbourne charged $33,000 for a year of the bachelor degree in 2013, RMIT University $23,000 and University of Central Queensland $18,000. Even the lowest of these is much higher than the government prescribed maximum fee for domestic students of just under $10,000. As shown in Table 4, the government subsidy is about $2,000 so the total revenue to a university for a domestic student in Commerce was less than $12,000 per student.

Most international students in VET are enrolled with private providers and data on the effects of their revenues not available. VET fees for international students are considerably lower than higher education fees. For example, Box Hill Institute, primarily a VET public provider, charged around $13,000 for one year for a Diploma in Business.

Entitlements: demand-led provision

Participation of both the advantaged and less-advantaged is seen to increase when the total enrolments have expanded rapidly. In the last few years, the Australian government has

introduced an unlimited entitlement scheme of government-supported places for bachelor degree students in universities. States are introducing various forms of entitlements to subsidised places in VET. This has led to a much faster growth in enrolments than in the past when the number of places that the governments would support was restricted to a specified number.

This policy stems from a commitment to expand substantially the proportion of the working age population holding a qualification. Through its effects on labour force participation, it is seen to promote social inclusion.

The Bradley review of higher education (2008) assessed the risks of this uncapped entitlement system, particularly the rapid expansion in enrolments and the budgetary consequences, poor quality provision and mismatch of student choices with the needs of the economy.

Expansion was not expected to be overly large in relation to workforce needs. Reforms were recommended for improved quality assurance but, pending their implementation, public funding was not to be made available for private providers. This is likely to change in the near future.

Student choice, along with better information and minor intervention in priority areas, was seen as likely to be as good as or better than the current forms of government determination in meeting the needs of the economy. This recognized that, in most jobs, there is not a close connection to a particular qualification (Karmel et al 2008, Skills Australia 2010).

The removal of caps, on the number of government supported university bachelor places, led to substantial increase in domestic enrolments of nearly five percent per annum in 2009 to 2012 compared with less than two per- cent per annum in 2005-2008 and one percent earlier in the decade (DE 2013b). Data for the last two years shows that enrolments by students from the lowest SES quartile increased more than the average.

Already budget concerns in 2013 have led to a cut in government funding per student for the next two years and the incoming Australian government, late in 2013, established a committee to review the system of entitlements.

For the VET sector, entitlement schemes are being implemented in various ways, in some states only to Certificate III. The Victorian scheme provides access to a government-supported place, generally only to a qualification higher than already held by the student.

For the VET sector, student numbers for Australia, as a whole, increased by nearly five percent per annum in 2009 to 2012. In Victoria, where all the funds were open to public and private providers, the expansion was concentrated in private providers. The very large increase in student numbers happened in Victoria in 2011, including in less advantaged groups, but this led to a large increase in the state budget outlay. There were several modifications then made to the scheme. The entitlement was maintained but government funding for courses, seen to be of lower priority for the economy, was cut very substantially in 2012. Additional funding for public institutes for their wider range of costs and community responsibilities were largely removed.

Reducing public funds for lower priority courses means provision of these areas is likely to contract, be of lesser quality or involve large fee increases where fees have been deregulated. Instances of such large fee increases have been noted. They impinge on choice with the effect likely to be greatest among the disadvantaged.

So far it seems that increased student choice across higher education and VET has resulted in a reasonable outcome in meeting labour market needs. When a rapid growth in enrolment occurs, the low SES students appear to gain proportionately but just hold or lose share in periods of slow growth or contraction. As discussed further below, there is a strong concern in the VET sector that the quality of provision by a substantial number of providers has been less than adequate.

Income support for students and employers

Full-time students in post-secondary education may be eligible for a grant from the Australian government for assistance with living costs. For example, a student, aged 18 and over, independent of parents could receive $10,000 a year or about 20 percent of average earnings in the community. The student could earn about the same amount, without it affecting the benefit.

Bradley (2008) reported that the proportion of students receiving assistance in higher education had declined and made a series of recommendations easing the income tests to improve the equity of the distribution and to extend the coverage. In particular, students can now access funds, independently of parents' income, at age 22 instead of 25.

As a result, the number of grants increased faster than the growing student numbers in higher education. Expressed as a percentage of full-time domestic undergraduate students, the grants increased to about 36 per cent in 2012 compared with 32 percent in 2007. In contrast, the number of grants to students in VET—the sector which provides for most of the less-advantaged—appears to have declined. The ratio of grants to full-time VET students was below 20 percent in 2012. These data are disturbing and need detailed explanation as this was not to be expected with the liberalisation of provision (Lee Dow 2011).

There is a specially designated living allowance scheme for Indigenous. Additional funding called a 'student start-up scholarship' (now an income contingent loan) was introduced in 2010 for all university students in receipt of government income support but, very strangely, not for VET students.

The Australian government and the states provide considerable financial support to employers who take on apprentices and provide some direct payments to apprentices. In general, these are not targeted on the disadvantaged though apprentices, whose employment it subsidises, tend to be from lower SES background. Some schemes provide particular support for equity groups such as Indigenous, person with disabilities, persons over 45 and long-term unemployed. There has been little comprehensive evaluation of incentives provided to employers. A recent report suggests they have not been particularly effective in promoting additional completions of apprenticeships (DAE 2012).

Funding for higher learning needs

As the proportion of students from low SES had stagnated, the Bradley committee (2008) advocated additional funds in support. Approaching four percent, of what the government calls teaching and learning funds in higher education, has been provided. The funds are allocated to those universities, which lift their enrolments of low SES, and for the development of 'activities in partnership with primary and secondary schools, VET providers, other universities, State and Territory governments, community groups, and

other stakeholders to raise the aspirations and build the capacity of people from low SES backgrounds to participate in higher education'. There is a special Australian government fund for higher education providers to meet the special needs of Indigenous students and a similar fund for persons with a disability.

The Australian government provides a number of programs, outside its VET funding, for persons with low literacy and numeracy, both unemployed and employed, with less than adequate skills. It provides support for job-seekers. This can include training and job experience. It provides extensive support for recent migrants in English language programs.

In VET, there is funding provision for higher learning needs but it is not publicly quantified and appears to be considerably less than needed. State funding for VET is generally explicit about additional funding for Indigenous students. Various forms of course funding implicitly provides additional funds for the tuition of less-advantaged students. For example, in Victoria there is a 30 percent higher rate of funding to a provider for persons aged 15 to 19, who are of low SES and who have not completed a senior secondary certificate. Foundation courses, providing remedial literacy and numeracy training, are funded at better rates than, for example, courses in business studies.

AWPA (2013) addressed the need for additional support for less advantaged and recommended further funding for literacy and numeracy including in the VET system. It recommended immediate additional funding for a range of wrap around services including mentoring and work experience. It argued that the funding should be at least equal to that in higher education, which, as noted, caters for far fewer low SES students than VET. It recommended a review of funding be set up to establish the levels needed for quality delivery in VET and delivery for the less advantaged.

Better use of funds

Competition

Improved efficiency and responsiveness by providers in the use of funds can lead to more and better provision for both the advantaged and the less-advantaged.

It is argued that efficiency in education can be increased if its provision is more influenced by market forces. This should encourage the use of lower cost methods of production and reorient provision in the direction of the needs of the purchasers. This should benefit all students, including the less advantaged.

Competition can be shown to be efficient where there are large numbers of buyers and sellers, a homogeneous product and perfect knowledge. Lacking these, the outcomes of competition are less certain. In the VET sector, there are fields of study and geographical regions where the number of buyers and sellers are small, commonly called thin markets. The product, even with competency-based assessment, is not homogeneous and the capacity of buyers, to discern its quality, varied, particularly where they were early school-leavers and where information on courses and providers is limited.

Where government funds underpin much of demand for courses and those funds are subject to policy change, the responsiveness of suppliers may be restricted to courses where the set-up costs are limited, thereby reducing the number of suppliers of capital intensive courses, often trade courses. Where a program for less-advantaged involves ongoing counseling and mentoring, the supply may be restricted unless there is confidence in longer

term government support to the provider. Where the certainty of funding for a provider is reduced, the employment and development of an ongoing professional teaching workforce may be compromised. Such issues are central to the debate on the role of the public provider for which several states are reducing or eliminating any funding advantage.

Government policy on competition for international students is largely unrestricted though visa and migration policies have significant effects. Policy on competition for domestic students is more restricted but is quite different for higher education and for VET. In higher education, the entitlement scheme with subsidies restricted to public universities has enabled them to compete against each other to attract the available students. The universities have little capacity to compete on price as the maximum for a government-supported place is prescribed (Table 4). In striking contrast, the Australian government has strongly supported competition among public and private providers in VET (COAG 2012b).

Anderson (2006) evaluated the early development of the market in VET in a study drawing on analysis of quasi markets where there is substantial government subsidy and regulation. From a large survey, he found that both public and private providers agreed that market forces had increased responsiveness and innovation, at least to larger clients, but that marketing and administrative costs had expanded strongly, and that the effects on balance for quality and equity were negative. The market has been extended greatly since Anderson's study, with a recent increase in the access of private providers to public money and, in some states, considerable competition on price which was not permitted in earlier times.

Other ways to efficiency

New technologies provide opportunities to reduce costs. The major development in online education is Massive Open Online Courses (MOOCS). Some Australian universities have joined international consortia. One of the concerns expressed is how well less-advantaged students will fare with MOOCS. Norton (2013) has provided an assessment of the likely importance of MOOCS and there are almost daily reports of new initiatives.

Governments have been able to stimulate efficiencies by at least partially funding on outputs rather than inputs such as student numbers. One area targeted is completion rates which, in higher education, were estimated at 72 per cent (Bradley 2008) but later estimated at about 80 per cent (ACER 2012). Following the Bradley review, some funds were earmarked to reward universities meeting targets in attainment, participation, engagement and quality. Universities were required to sign mission-based compacts relating to these areas.

Teachers' salaries are the biggest cost and steps to change salary structures and promotion procedures are frequently proposed in the public sector. The move to making public funding available to private providers in the VET sector could, in considerable part, be seen as a means of cutting the wage bill for training as private providers are much less unionised and have fewer conditions on key matters such as teaching hours. While savings can be achieved, the effects on the professionalism of staff and the ongoing quality of teaching and learning could be negative.

In the VET sector, completion rates of whole qualifications have, on average, been low, until recently under 30 per cent. In part it is argued that the low rate reflected students completing only units relevant to their work needs. The successful completion of units or

subjects has been around 80 per cent. Recent moves to performance-based funding may be a factor in the improvement in qualification completion rates to 35 per cent overall and 45 per cent among young persons without a previous qualification (NCVER 2013).

Quality

Expansion in participation in post-secondary education by the less advantaged may be of little value if it is accompanied by a decline in quality and relevance of provision. The issue of quality has been of great concern. Two main issues considered here are the effects on the VET sector of the decline in funding provided per hour of training and, in higher education, the diversion of funding to administration and research considered to be important in diminishing quality.

Bradley (2008) concluded that there were signs of declining quality in Australian higher education. Data on the student experience and engagement with staff in Australia compared unfavourably with similar surveys in the UK, USA and Canada. Bradley concluded that there was a need for increased funding and reform to the mechanisms for quality assurance.

There is a strongly voiced concern in universities that the proportion of funds available for teaching has declined. Ratios of students to academic staff increased, especially, in the 1990s. The proportion of teaching taken by sessional staff was estimated to be some 40 to 50 percent (Bradley 2008). It was also estimated that a notable share of university revenues, intended for teaching, has been used to subsidise externally funded research (Bradley 2008).

Teaching funds are also reduced if an increasing share of revenue is used for administration. There does appear to have been a relative increase in administrative staff though outsourcing of some functions previously performed by university staff makes this hard to prove.

In higher education, regulation of quality assurance is in the hands of the Tertiary Education Quality and Standards Agency (TEQSA), established in 2011 with the standards set by an independent panel. The standards are used for both registration and audit. The new body has been criticised for adding to the administrative burden, mainly by the older universities which regard additional supervision of their activities as unnecessary red tape. A recent review has recommended several simplifications (Lee Dow and Braithwaite 2013).

Many universities are voluntarily engaging in external moderation of their courses, both within Australia and overseas. For example, the Faculty of Business and Economics at Monash University has sought international accreditations, notably the European Quality Improvement System, the Association to Advance Collegiate Schools of Business and the Association for MBAs.

Australian universities strive to improve their ranking on international quality measures. In general, they rank quite highly, wherein the University of Melbourne and the Australian National University stand out (Times Higher Education 2013). Teaching is considered in these rankings but most of the weight is given to research reputations.

In VET, as in the universities, funding constraints have been one of the factors leading to the casualisation of the workforce. The Productivity Commission (2011b) estimated that 'about 60 percent of trainers and assessors in TAFE, and 36 percent in the non-TAFE sector, were employed on a non-permanent basis, compared to 25 percent of the wider labour market' in Australia.

VET has given the most concerns about quality though the large majority of employers and graduates from VET express satisfaction with their courses and the work-related benefits (NCVER 2011, 2012). Concerns about quality are less frequent in trade apprentice areas where employers have a substantial role in the training and where, in some cases, licensing arrangements add to the quality assurance. However, the need for improvement in this area was voiced in a recent review (McDowell, Chair, 2011).

Complaints about quality became prominent in the last decade with the rapid increase in numbers of international students in VET very largely enrolled in private for-profit training providers. A government review of the student visa system for international students said:

> Regrettably the most likely places for systemic rot continue to be in the VET sector. That is not to say that the entire VET sector, or even the majority, lacks integrity. But with 533 registered providers offering VET courses to international students in 2010, it is far too risky to extend the benefits beyond the current arrangements (Knight 2011).

State and national policies for entitlements discussed earlier have led to the increased provision of public funds by private providers for domestic students in VET. Complaints about poor quality provision have continued. A major government agency has been quite forceful in its criticisms in a number of reports, for example:

> Unless existing concerns surrounding poor quality training are addressed, much of any increased investment in vocational education and training could be wasted (Productivity Commission 2011a)

In response to the Productivity Commission's reports, the Australian Skills Quality Agency (ASQA) undertook an audit of 73 providers of training in aged care. ASQA is a national body set up to take over from the states the large part of the registration and audit of providers. The large majority of providers in aged care were found to be initially non-compliant. Many programs were too short to enable students to become competent. A major issue was assessment, especially the lack of assessment in a workplace and a failure to ensure valid assessment of essential skills and knowledge (ASQA 2013).

These concerns about assessment have been increasingly expressed in recent years. The OECD review of Australian VET in 2008 argued for standardised assessment to ensure consistency:

> National assessment already works well in other countries. National exit examinations are used in countries that maintain a relatively centralised system of qualifications in VET such as Japan and Korea. Several less centralised countries with competence-based training also require national or external exit tests to obtain a VET qualification (OECD 2008).

Skills Australia (2011) recommended that there be independent external validation of assessments and the trialing of this was included in National Partnership Agreement among the national and state governments (COAG 2012b). The successor body to Skills Australia recommended external assessment for high-risk courses, including the teacher training course required for VET teachers (AWPA 2013).

It is arguable that a requirement of students or employers to pay a significant part of the costs of training (with income contingent loans as needed) may increase the scrutiny of quality. A regular comment is the need for students and employers to have 'skin in the game' to increase commitment to the program and, with it, scrutiny of what is delivered (Burke

and Veenker 2011). Whereas students in higher education must pay a minimum, approaching $6,000 a year, for a full-time course, there is no minimum specified for the VET system in Victoria and some providers charge very low fees. In contrast to Victoria, the funds provided by the Australian government to employers for VET training under a scheme called the National Workforce Development Fund required even small employers to contribute at least a third of the tuition costs rising to two- thirds for large employers.

In VET, as in higher education, it is important that students and employers have good information on which to base choice of type and quality of course. In early stages of development are the national websites My Skills and My University. These will provide information on courses, on providers, on the education and training experiences of other students, on national student outcomes and statistics on the education or training institutions.

Conclusions

Numbers of less advantaged

Overall participation in post-secondary education is high in Australia. Less-advantaged groups are under-represented. They increased their participation in post-secondary largely in line with the overall expansion, with a rising share in years of rapid expansion, not always sustained in periods of stability or contraction. In recent years, Indigenous and persons with disability have increased their share of total enrolments though with the numbers remaining very small in higher education.VET is the main provider—for low SES students, for Indigenous and for persons with disabilities.

Finance that facilitates participation in education

Several elements of the financing of education have helped overall participation to a high level. They have helped to sustain and, for some groups, increase participation among less- advantaged groups.

A first element is the number of places the government is prepared to subsidise in both higher education and VET. With the introduction of entitlement schemes, students are not excluded by a lack of government funded place, at least from a first qualification at a particular level.

Fees have been less of an issue than might have been thought. In VET, the student fees, to date, have generally been quite low and very low concession fees have been charged to the less advantaged. In higher education, substantial fees have been in place for the last 25 years but maximum fees have been imposed and the burden of debt contained by the income contingency provisions and the waiver of real interest on the debt. Analyses suggest that the loan scheme has largely offset the effect of the imposition of fees on participation.

Extra provision for the less advantaged is also provided in the student living allowance schemes, available to those from the lower income households. Recent adjustments have extended the reach of the schemes though whether the size of the grants or their coverage is adequate is hard to judge. The relatively low proportion of full-time VET student receiving assistance is a concern.

Some extra provision is made to both higher education and VET providers for the greater teaching and learning costs associated with persons from low SES, persons with a disability and the Indigenous.

Grants and other subsidies are provided to employers of apprentices by both the Australian and state governments. This appears to lift the total numbers in training who are mainly from lower SES groups and helps reduce skill shortages but the efficiency of such schemes has been questioned.

Quality

There is considerable concern with quality, especially in VET. The reasons for possible deterioration in quality include the substantial decline in funding per hour in VET, contributing to employment of marginally qualified and casualised staff and the reduction of face-to-face teaching hours.

Concerns are also associated with the effect on quality of the new funding schemes available to public and private providers in VET, though not so far in higher education. The benefits of extra competition of such schemes appear to be outweighed, at least in the short run in VET, by the inadequacy of quality assurance. The need to target the assessment procedures, leading to the award of a qualification, has been stressed in national and OECD reports on Australian VET but progress on this remains too slow.

Poor quality education, particularly, affects the disadvantaged, who are overwhelmingly in the VET system. They are likely to be provided with less support than needed, be less informed, be more likely to take low-cost options and be less able to remedy poor choices with further study. If they receive a qualification without receiving the appropriate skills, it is unlikely that workforce benefits will be realised.

Efficiency of provision

Efficiency in the use of funds can be enhanced by changing funding mechanisms. This could include well-regulated competitive funding and some forms of outcome-based funding. One concern is the temptation to providers to lower standards to receive funding tied to completion, again a matter for the quality assurance system.

Improved management and new technology e.g. with MOOCS can reduce costs of delivery. The effects may well be very large and provide a means of freeing funds that can be directed at the less advantaged. The outlook is uncertain.

There are attempts to reduce the costs of higher education regulation but the outcomes are not yet known. The growth in administrative staff in universities seems disproportionately large but how this will be addressed is not yet clear.

A rocky future

The current outlook is for stringency in public funding in the next decade. The new Australian government, in its first Budget in May 2014, proposed a wide range of changes. These are not yet implemented. They include making public funds for higher education available to private providers as well as the universities, reducing the subsidy, per higher education student, by an average 20 per cent, removing the restriction on the fees that can be charged by higher education providers, eliminating the interest subsidy on student loans, reducing the income level at which repayments start, and making substantial cuts to the funding it provides to the states for VET. The actual changes that will occur depend on

decisions in the next few months in the upper house of parliament where the government does not have the majority.

Debate is strong on the possible effects of these proposed changes. Some obvious outcomes are a considerable increase in student debt and a possible reduction in the proportion repaid, a lessening of access to the better universities, which are likely to increase fees very substantially, and further reduction in real funding for VET courses, making it hard to sustain already comprised quality levels.

Given that VET is the place where most of the less advantaged study and which provides a pathway to higher studies, a consideration of its funding and organisation should be pushed to high priority. Its present predicament seems to be the outcome of the divided responsibilities of the Australian and state governments as well as the greater political influence of the advocates for schools and higher education. A first step would be to provide a common national regulator and a funding model for the whole of post-secondary education, as recommended by the Bradley Committee (2008). This might imply Australian government's full takeover of VET funding or its return to the states, with adequate funding support assured

Within this new funding and regulatory structure, the lifting of student fees in VET might not turn away less advantaged students so long as the HELP loan scheme is provided for certificate courses as well as diplomas. Some argue that the debt involved in HELP would deter less advantaged students. The protection of income contingency should soon reduce this deterrence. If the income threshold were maintained at current real levels, the subsidy to VET students would be larger than for higher education, given their relatively lower educational levels and job prospects.

A modification to the HELP loans that could be considered is to make the subsidies mainly applicable to less advantaged students. At the moment, HELP loans are provided for all, including persons who would have attended university in any case. Those who later earn very high incomes repay the same amount (if a bit quicker) compared with those who just clear the repayment threshold. Amendments could be proposed that would concentrate support more on the disadvantaged and promote greater recovery of funds from the better off. But the current scheme has had the virtues of political acceptability and apparent fairness.

More focus could be given to schemes involving greater employer contributions. Schemes could be considered on the lines of the National Workforce Development Fund which required a minimum employer contribution of a third of the training tuition costs, rising to two- thirds for large employers. Such schemes tap a possibly major source of funds and should also lead to the training provided being better aligned with labour force needs.

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NATIONAL UNIVERSITY OF EDUCATIONAL PLANNING AND ADMINISTRATION

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ADMISSION NOTICE 2015-16

(i) M.Phil. Programme
(ii) Ph.D. Programme
(iii) Part-time Ph. D. Programme

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Initial short-listing of applications will be carried out on the basis of relevance and quality of the brief write-up (in the prescribed format) in the proposed area of research to be submitted along with the application form. Short-listed candidates will be required to appear for a written test and those qualifying in written test will be subjected to personal interviews to assess their motivation and potential, leading to final short-listing and preparation of panel of selected candidates, in order of merit.

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Registrar

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Impact of Socio-Economic Background on School Dropout Rates in Rural India

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Abstract

Education is one of the key factors which helps individuals in attaining a better standard of living and also leads to a strong nation as it guarantees overall development of the citizens. Recognizing the role of education in attaining a socio–economic balance and development of its people, the Government of India has taken numerous steps to provide access to quality education to all. However, most of the Programmes focus more on access than on retention. Less than adequate retention in schools results in wastage of resources as well as opportunities. Identification of factors affecting drop–out is important for improving retention. Socio-economic status can result in the drop-out directly or indirectly by influencing the students' decision to drop from school, or that of the parent to withdraw the student from school.

The objective of this paper is to study the influence of socio-economic factors like caste, religion and occupation on the probability of dropping out of school in rural India by applying the logistic regression technique on the unit level data from NSS 64th round (2007-08) on "Participation and expenditure on Education" in India. Certain policy suggestions have also been made depending upon the findings of the study.

The Study reveals that socio–economic conditions like Caste, Household Occupation and Religion have significant effect on drop-out rates of students in rural India. It has been found that the odds of dropping out of school are highest for a student belonging to the ST category, followed by a student belonging to the SC category. The odds of dropping out of school are also found to be highest for students belonging to the agricultural labour and other labour households. As far as religion is concerned, the odds of dropping out of school are highest for a Buddhist student, followed by a Muslim student.

The views expressed herein are solely of the authors and do not represent that of the organizations where they are serving.

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Introduction

Education is one of the key factors that has the capability of affecting the development of an individual as well as a Nation. It not only helps individuals to attain a better standard of living but also leads to a strong nation as it guarantees overall development of the citizens. For a vastly populated and socio–economically diverse country like India, education is all the more important as it can be a great leveler and can also play a crucial role in inclusive development of every faction of the society. Prof. Amartya Sen has said that it is important to close the educational gaps, and to remove the enormous disparities in educational access, inclusion and achievement for making the world more secure as well as more fair. Education is not only essential for development of human resource but is also crucial for the economic growth, well-being and stability of the society. It has been concluded through a large number of studies that a high literacy rate correlates with low birth rate, low infant mortality rate and increase in the rate of life expectancy. Recognizing the role of education in attaining a socio–economic balance and development of its people, the Government of India has taken numerous steps to provide access to quality education to all. In line with the goal of nation-building, India has been committed to providing access to quality education to all. With the formulation of National Policy on Education, India initiated a wide range of programmes for achieving the goal of Universal Elementary Education through several schematic and programme interventions, such as Sarva Shiksha Abhiyan (SSA), Operation Black Board, Shiksha Karmi Project, Lok Jumbish Programme, Mahila Samakhya, District Primary Education Programme, etc.. Indian Parliament has enacted a legislation, making free and compulsory education a Fundamental Right of every child in the age group 6-14 years, which has come into force from 1st April, 2010. Rashtriya Madhyamik Shiksha Abhiyan has been launched recently as a step to universalize secondary education.

It is, however, seen that interventions like Right to Education, that are designed to improve initial access, often fail to retain the child in the system of education. It results in not just an increased enrollment rate but also a significant drop-out rate. Reddy and Sinha, in their study conducted in 2010, have estimated that only about 37% of the children, who joined Class I in 1993, reached Class X (Reddy and Shanta, 2010). Children drop-out of schools due to various reasons like fear of teachers, misbehavior/cruelty by teachers, discrimination, poor interest or neglect by parents, illiteracy among parents, early marriage of the child, feelings of inferiority, preference for work to earn money, poverty in family, frequent shifts or migration of family, etc.. They drop-out without acquiring the most basic skills; and this not only limits future opportunities for them but also exerts a significant drain on the limited resources provisioned for school education. Thus, improving retention in schools till the completion of the desired level is an important policy issue.

Identification of factors affecting drop–out has been an area of great interest to the policy-makers and social researchers not only in India but across the world. Several studies have been conducted in the past on the topic and numerous causes for drop-out have been identified. There are many factors associated with drop-out, some of which belong to the individual, such as poor health or malnutrition and lack of motivation. Others emerge from the children's household situations such as child labour and poverty. School-level factors also play a role in increasing the pressure to drop-out such as teacher's absenteeism, school location and poor quality educational provision (Sabates et al, 2010). The results of a study conducted by Mike, Nakajjo and Isoku (Okumu et al) in Uganda reflected the importance of

parental education, household size and proportion of economically active household members in influencing the chances of drop-out. In India too, similar factors have been highlighted in studies on factors influencing drop-out. Sikdar and Mukherjee, in their study on enrolment and drop-out rates, have specified reasons for school drop-outs and put them in categories like student-centric, teacher/school-centric, parent/family-centric (Sikdar and Mukherjee, 2012). A similar classification of reasons for school drop-out has been done by R. Govindaraju and S. Venkatesan in their study of school drop-outs in rural Karnataka in 2010. Their Study revealed three major clusters of causes of drop-out namely gender, occupation and educational status of teachers; socio–economic status and education of parents; and, gender of the drop-out children themselves.

Important results have also been revealed in certain studies which emphasize that social and economic conditions of the family have significant impact on the students' decision to drop-out from school, or that of the parent to withdraw the student from school. Children from better-off households are more likely to remain in school, whilst those who are poorer are more likely to drop-out once they have ever enrolled (Hunt 2008). According to Basumatary, "A Family's social and demographic circumstances are an important determinant of school drop-out; the members who make up a family of the child, health of the family members, education attained by parents, the activities family members are engaged in, whether the family is single-parent or otherwise etc. influence drop-out decision of children"(Basumatary, 2012), Dreze and Kingdon, in their analysis of determinants of school participation in rural India, have concluded that household situation and decision-making of the parents are the most prominent factors in sustaining school access. They have concluded that children belonging to the Scheduled castes and Scheduled Tribes as well as the Other Backward castes were less likely to participate in school. Muslim Children were also found to have less school participation (Dreze and Kingdon, 1999).

As it is generally found that the poor households are often forced to withdraw their children from schools if they experience an 'income shock', one may surmise that the students belonging to the labour class are more prone to drop out. Also social (including religious background) and economic inequalities between the students can influence the behavior of the teacher towards them, thereby making the students from the weaker sections and minorities more vulnerable to drop-out. Sometimes, community members can also have a significant influence on the decision of the parents to withdraw the child from school. This hypothesis forces one to explore the linkage between the socio-economic background of the student's household and the incidence of dropping out. A comparison between the probabilities of dropping out of the students with different backgrounds can also be of interest to researchers as well as policy-makers. This paper is an attempt to provide an input to address the above need.

Objective

Less than adequate retention in schools results in wastage of resources as well as opportunities. The need of the hour is to design retention improvement programmes in a larger and much more focused manner and this requires a study of various factors affecting the incidence of drop–out. The objective of this paper is to study the influence of socio-economic factors like caste, religion and occupation on the probability of dropping out of school in rural India. Unit level data from NSS 64th round (2007-08) on "Participation and expenditure in Education" in India has been used for this study. Certain policy suggestions have also been made depending upon the findings of the study.

Approach and Methodology

Data Source

In view of the need for exclusive information on education in the contemporary context, the National Sample Survey Office (NSSO) undertook a specialized all- India survey on 'Participation and expenditure in education' in its 64th round conducted during July 2007-June 2008. In this survey, apart from other information, comprehensive data on the incidence and causes of dropping out was also collected for different social, occupational classes and religious groups. This study is based on the unit level data of this survey.

The survey was conducted through interviews of a representative sample of households selected randomly through a scientific design and covered almost the entire geographical area of the country. A sample of 290,171 persons from 63,318 rural households, based in 7,953 villages spread across the country, was surveyed. A stratified multi-stage design was adopted for the survey. The first stage units (FSUs) were the 2001 census villages (Panchayat wards in case of Kerala) in the rural sector and the ultimate stage units (USU) were the households.

Approach

Logistic regression technique has been used in this study by taking drop -out as a dependent variable and Social Group, Religion and Occupational status of the household, to which the student belongs, as the independent variables. Since Drop-out is a qualitative variable with binary outcomes, which can be coded as zero or one depending upon whether a student drops out of school or not, a binary logistic regression analysis has been carried out. Logistic regression is an appropriate statistical technique to find out the effect of independent variable(s) on a response (dependent) variable measured as dichotomous or polytomous (Singh, 2006). The independent variables are categorical in nature and for each independent variable, one category is selected as a reference category and comparisons are made between other categories of independent variable with respect to the reference category. To test the significance of each independent variable Wald statistic has been computed at 95% level of significance. Wald Statistics is the ratio of the logistic regression coefficient to its standard error, i.e. Wald Statistics = b/S.E. (b) and is equivalent to the traditional Z statistic.

The probability of dropping out of a student 'P' can be expressed using the following equation:

$$P = 1 / [1+ \exp \{- (b_0 + b_1X_1 + b_2X_2 + b_3X_3)\}],$$

In the above equation, X_1, X_2 and X_3 are independent variables relating to Social Groups, Occupation and Religion respectively, and b_1, b_2 and b_3 are logistic regression coefficients corresponding to the independent variables.

The equation can be expressed in the following form also:

$$1- P = \exp \{- (b_0 + b_1X_1 + b_2X_2 + b_3X_3)\} / [1+ \exp \{- (b_0 + b_1X_1 + b_2X_2 + b_3X_3)\}],$$

$$P/ (1-P) = 1 / \exp \{- (b_0 + b_1X_1 + b_2X_2 + b_3X_3)\},$$

$$\ln (P/ (1-P)) = b_0 + b_1X_1 + b_2X_2 + b_3X_3,$$

LHS of the equation is log odds of dropping out of a student and is known as logit of P.

Categorization of the variables

The categorization of the different predictors, as given in the NSS data along with their numbers and percentage shares in the sample, are given in Table 1. It may be noted that for the variable occupation, there are two categories of labour households for which data is collected in NSS, 'agricultural' and 'non–agricultural'. For the present study too, the two categories are taken separately taking into account the fact that agriculture is a seasonal occupation and, hence, results for 'agricultural labour' may vary from 'non-agricultural labour'. Also it is known that in Logistic Regression, the odds of different categories of the predictors are obtained with respect to a category of that predictor that is chosen as the reference category. The categories of the different predictors, which are chosen as reference category in the study, have been marked with #

TABLE 1

Categorization of Predictors

Predictors	Different Categories	Sample Number of persons	Percentage Share
Occupation	Self-employed in agriculture	42370	14.60
	Self-employed in non-agriculture	69939	24.10
	Agriculture labour#	116468	40.14
	Other labour	61394	21.16
	Total	290171	100.00
Religion	Hindu#	226449	78.04
	Islam	32617	11.24
	Sikhism	5810	2.00
	Christianity	19099	6.58
	Buddhism	3668	1.26
	Others	2538	0.87
	Total	290171	100.00
Social Group	Scheduled Tribes(ST)	49419	17.03
	Schedule Castes (SC)	56652	19.52
	Other Backward Castes (OBC)	115895	39.94
	Others#	68205	23.51
	Total	290171	100.0

It can be seen that in a social group, nearly 40% of the persons in the sample belonged to the OBC category. These were followed by other castes (23.51), SC (19.52%) and ST (17.03 percent). In the case of religion, approximately three- fourth of the persons in the sample were Hindus. Muslim persons in the sample were about 11 percent followed by Christians (6.58 percent) and Sikhs (2.00 percent). Nearly 40 percent of the persons in the samples were engaged in agriculture labour. The second highest percentage was that of those engaged as self-employed in non-agriculture (24.10 percent). The percentage share of persons engaged as self-employed in agriculture was (14.60 percent).

Findings and Discussion

The data has been processed through SPSS software and the results of binary logistic regression analysis on school drop-out are shown in Table 2.

The 1st column 'B' gives the estimates of binary logistic regression coefficients while the 2nd column gives their standard errors. Wald statistics for testing the significance of individual variables has been computed in column 3. Columns 4 and 5 give the degree of freedom (df) of the Wald Statistics and its significance. The last column depicts the odds ratio, i.e. the magnitude of odds of dropping out of a student belonging to any category as compared to the reference category for a given individual variable.

TABLE 2

Estimated Logistic Regression Coefficients and Odds Ratio

Factors	*B*	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B) (Odds Ratio)*
Social Group (® Others)			224.654	3	0.000	
Schedule Tribe	0.548	0.037	216.749	1	0.000	1.73
Schedule Caste	0.202	0.032	39.385	1	0.000	1.223
Others Backwards Caste	0.121	0.026	21.8	1	0.000	1.129
Occupation (® Agriculture labour)			593.964	3	0.000	
Self-employed in agriculture	-0.566	0.026	484.476	1	0.000	0.568
Self-employed in non-agriculture	-0.454	0.031	209.506	1	0.000	0.635
Other labour	-0.075	0.033	5.013	1	0.025	0.928
Religion (® Hindu)			271.336	4	0.000	
Islam	0.419	0.034	147.436	1	0.000	1.52
Sikhism	-0.416	0.063	43.895	1	0.000	0.66
Christianity	0.072	0.048	2.265	1	0.132	1.074
Buddhism	0.795	0.097	66.802	1	0.000	2.215
Constant	0.326	0.03	119.141	1	0.000	1.386

The results of the binary logistic regression coefficients show that the Social group, Religion and Occupation of the Household, to which a student in rural India belongs, are significant contributing factors in dropping out. On examining the coefficient estimates, we see that all the coefficients of Social groups and Religion (except Sikhism) have a positive effect, whereas all the coefficients of occupation have negative effects. A positive estimate of logistic regression coefficients indicates an increase in the odds of dropping out, while a negative estimate indicates a decrease in the odds of dropping out with respect to the reference category for a given independent variable when all other independents factors are controlled. It may also be observed from column 5 that all the coefficients (except Christianity in case of independent variable Religion) are found to be statistically significant (<0.05) at 95% level of significance.

From the present study, it is clear that the odds of dropping out of school are higher for the Social Groups 'Other backward castes (OBC)', 'Scheduled castes (SC)' and 'Scheduled tribes (ST)'as compared to 'Others'. While the odds of dropping out for a Student of ST category is 73 percent more, that of SC and OBC students are higher by 22 percent and 13 percent, respectively. This finding is important as it reveals that the students of castes at the lower end of the social ladder are more prone to drop out.

When compared with a student from a household of 'Agriculture labour', the odds of dropping out are reduced to almost half for a student belonging to a household whose occupational status is 'Self-employed in Agriculture'. For a student belonging to a household which is 'Self-employed in Non-Agriculture' the odds of dropping out are reduced by almost 40%. The odds of dropping out of a student belonging to the 'Other labour' household is nearly the same (reduced by only 7%), when compared with the 'Agriculture labour household'. This shows that the labour households are the one which have the highest probability of withdrawing their children from schools, though not much difference is found between the students from the 'agricultural' and 'non–agricultural' labour households.

Taking 'Hindu' as the reference category for Religion, one can see that the odds of dropping out are increased by 50 percent for a Muslim student and reduced by 34 percent for a Sikh student. For a Buddhist student, the odds of dropping out are significantly higher by about 120%. Since the Wald Statistics in case of Christian student is not significant at 95% level of significance, no inference has, therefore, been drawn for this category. The finding that the Muslim students are more prone to drop-out necessitates attention towards this community.

Conclusion and Policy recommendations

The present study makes use of large scale data on incidence and causes of drop-out, available from the NSS 64th round, to show that socio–economic conditions like Caste, Household Occupation and Religion have significant effect on drop-out rates of students in rural India. The students belonging to the socially backward classes (SC, ST and OBC), economically weaker sections (labour households) and Muslim religion are found to be more prone to drop-out of school. Thus, there is a need for the policy-makers to study the reasons for drop-out amongst these students and design special interventions for them to improve retention amongst them as well as reduce the overall drop–out.

Providing financial incentives in the form of scholarships to students from socially and economically weaker sections for attending schools may help in better retention. In places where the system of scholarships already exists, it needs to be strengthened to ensure that the benefits percolate to the actual beneficiaries in a time-bound manner. Sensitizing teachers to have an encouraging behavior towards the students from weaker backgrounds and organizing remedial classes can also help in reducing the drop-out phenomenon.

The students belonging to labour households generally drop out of school to work for a wage or salary and participate in other economic activities. With both the parents engaged as labour, these students are also found to drop out to attend domestic chores and also look after their younger siblings. Schools having flexible timings may help in curbing drop-out of such students. Schools, with flexible timings and operating in evening shifts, can also encourage enrolment of parents who are illiterate or less educated. This will help in creating

awareness amongst parents and making them understand the importance of education as well as different schemes of the Government.

As far as religion is concerned, involving active members from Muslim community, who can create awareness and interest amongst students and parents, can help in curbing drop-out of first generation learners from the community.

Limitations of the Study and Way Forward

The present study does not take into consideration the gender of the student as well as the State/UT to which he or she belongs. These aspects are important for policy-makers and need to be worked on further. The reasons of drop–out amongst the different socio–economic groups may also not be the same and, hence, there is no single intervention which can solve the problem of school drop-out. A comprehensive study of reasons of drop–out amongst different categories of students would facilitate a more sustainable impact on the problem of drop-out.

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Managing Knowledge within Organisations

— The Dualities and Complexities Involved

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Abstract

If Knowledge Management (KM) is to really be Knowledge Management, and not just Information Management (IM) with a new label, then all KM projects will have to recognise that some knowledge cannot be articulated. Knowledge Management, as an organizational innovation, has been with us for more than a decade but it has reached a state of maturity. All true KM projects become projects of soft knowledge to some degree. Therefore, we need to move from trying to capture/codify/store (i.e. IM) towards emphasising the human aspect. However, questions remain. Can knowledge be managed or can we just facilitate the development of a person's knowledge? Is the knowledge being shared or an environment being created where a person develops his or her knowledge through interaction with, and guidance by, an old-timer? In exploring these issues, are we only now approaching the point where we start to move from IM to KM? The notion of knowledge as a duality is clearly useful, but then all KM problems become, to some extent, problems of managing both hard and soft knowledge. This poses a different set of challenges for those dedicated to developing workable KM solutions. Viewing knowledge as a soft-hard duality begs the question – as to how this duality can be managed? How do we best conceive of and practically operationalize knowledge management? How can this be managed if it cannot be captured and stored? However, answering questions in the arena of knowledge is far from easy because of various contradictory trends and differing prescriptions on how best to manage, create, and transfer knowledge.

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Introduction

We all agree that the world has experienced three distinct ages – the Agrarian Age, the Industrial Age, and now, the Information Age (Persaud, 2001). An array of terms such as the post-industrial era (Huber, 1990), the information age (Shapiro & Varian, 1999), the third wave (Hope & Hope, 1997), or the knowledge society (Drucker, 1999) have been used to illustrate this epoch. The phenomenon of the 'knowledge economy' has drawn quite a bit of attention, from policy- makers to scholars of different feathers. In a book, *The Gifts of Athena – Historical Origins of the Knowledge Economy,* Joel Mokyr (2002) has argued that the industrial revolutions need to be explained by the development, but mostly by the use, of new knowledge. He also makes a number of noteworthy observations about the role of knowledge for economic development. In an economy in which the only certainty is uncertainty, one source of lasting competitive advantage is knowledge and its manipulation (Nonaka, I and Takeuchi, H. 1991). Developments from within the technological/knowledge field, as well as the market, account for a paradigm's emergence as well as its development (cf. Van den Ende and Dolfsma, 2005). In the knowledge economy, the value of knowledge as input and output is growing; knowledge is a key ingredient of what is bought and sold (both explicitly and implicitly); knowledge resources are rising in importance relative to traditionally recognized resources, and new technologies and techniques for managing knowledge resources are emerging (Stewart, 1998). Knowledge assets such as technical and organizational know-how undergird each firm's competitive position. The hallmark of the Information Age is the swift embracing and diffusion of ICT (Information Communication Technologies) which has had a spectacular consequence on the way business is conducted as well as on the lifestyles of people. Such a fundamental macro-level shift also has consequential and noteworthy implications upon both meso-level and the micro-level processes throughout organizations. Concomitant with this growth in organizational knowledge and increased need for knowledge structuring, intensifying competition and high rates of technological obsolescence have created a need for greater and faster innovation in many industries.

A significant outcome of globalization and rapid technological transformation has been the creation of vast amounts of raw data and information, and the parallel growth of the capabilities to process them into relatable information and knowledge germane to the solutions of business problems. Expressions such as 'firms learn' and 'firms know' have become commonplace in much of the strategy and knowledge management literature. Nelson (1981b) equates technology with 'well-articulated blueprints', Schmitz (1985) equates it with 'machines and labour', and Teitel and Westphal (1984) with 'productivity, total factor productivity'. Knowledge, subsequently, has developed into a foremost organizational tool in acquiring and sustaining competitive advantage. Knowledge incorporated in machines and tools may be called 'contained knowledge'. De Vlieghere (1994) has described it as 'embodied knowledge' – although this may provoke an association with the term 'embodied technology' contemporary in the parleys of macro-economists' building models of the economy. As companies try to position themselves to spread out within the global economy, their efforts are repeatedly stultified by apparent deficiencies in knowledge. With the ubiquitous embracing and dissemination of IC2T (Information Computer and Communications Technologies) there has been an exponential amplification in information, plus an enhancement in the reach and scope of business activities, and an

equivalent decline in the operationally acceptable time between the trigger event and decision formulation and implementation (Nilmini Wickramasinghe, 2005). Zenger and Hesterly (1997) note that, "there is growing evidence of a fundamental shift in the forms that govern economic activity". Knowledge-based theories of the firm also regard the specificity of assets, particularly human assets embedded in firm-specific routines, language, and skills, as critical to the performance of the firm (Barney, 1998). In fact, Michael Porter has noted that the ultimate competitive strength of a nation lies in its ability to maximize its knowledge assets (Porter, 1990).

'Knowledge' takes a fundamental place in the economy, but is, to some extent, under theorized concept in the economics' literature. The newly-emerging reality of our economies is that they are knowledge economies (OECD 1996b). The metaphor pervasively used in economics to understand knowledge is that of 'capital'. Such a comparison of knowledge with capital is the cornerstone of human capital theory, as developed by Becker and others. According to Friedrich Hayek, Nobel Laureate in economics, the concept of 'knowledge' is central to economic theory (1945). The view on knowledge, whether implicitly subscribed to or explicitly taken, has important consequences for the development of economic theory. Organizational economic insights have already substantially fertilized the literature on knowledge in organizations that characterize the firm as a knowledge-integrating institution (Conner and Prahalad, 1996; Kogut and Zander, 1992, 1993).

In the present economy, knowledge is intertwined and embedded in people, processes, technologies, and techniques and leads to the generation of money, leveraging of existing assets, increases in learning and flexibility, increases in power bases, and the realization of sustainable competitive advantages (Bacon & Fitzgerald, 2001; Clegg, 1999; Croasdell, 2001). Hence, the new terms, 'Knowledge Economy and Knowledge Management', have surfaced where managing knowledge has become one of the crucial skills organizations need to acquire in order to survive. Knowledge, as a key driver of innovation and competitive advantage, is recognized as the fundamental activity for obtaining, growing and sustaining knowledge in organizations (Marr, 2004). Indeed, innovation, today perceived as a generic need in all industries, can be seen as knowledge-dependent, whilst the concept of core competences, popularized recently by Prahalad and Hamel (1990) as an alternative strategic paradigm to conventional product market thinking, is close to the construct of know-how. What conceivably is remarkable is that as information technology becomes pervasive and embedded in organizational functioning, new opportunities for building competitive strategies on knowledge are becoming perceptible. Knowledge Management is also being necessitated by the changing structure of organizations and, predominantly, the desire to integrate far-flung operations. Businesses that were once structured along geographic lines are now reorienting themselves according to markets, or products, or processes-or all of these in complex matrices. Within organizations, people in widely dispersed locations combine efforts on "virtual" teams.

KM and Organisations

The prime purpose of Knowledge Management is on the process of creating value from an organization's intangible assets (Wigg, 1993). Knowledge Management can be viewed as transforming data (raw material) into information (finished goods) and from finished goods into knowledge (actionable finished goods) (Kanter, 1999). To effect these transformations

of data into knowledge requires many phases such as conceptualization, review, consolidation, and action phases of creating, securing, combing, coordinating, and retrieving knowledge (Wickramasinghe, 2005). Davenport and Prusak (1998) view knowledge as an embryonic mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. This means that the successful management of knowledge or intellectual capital is closely linked to the KM processes; which, in turn, implies that the successful implementation and usage of KM ensures the acquisition and growth of 'knowledge capital'. In fact, current performance management assessment also necessitates addressing the management of knowledge and the introduction of frameworks such as the Balanced Scorecard. Organisations managed through 'balanced' performance measurement systems perform better than those that are not (Kaplan and Norton, 1996). Similarly, the Performance Prism is structured to throw light on the complexity of an organisation's relationships with its multiple stakeholders (Neely et al., 2002), and the Intellectual Capital Index (Roos et al., 1997) underlines the importance of managing the financial and non-financial value contributions of knowledge.

Both the creation of knowledge and knowledge management are intimately coupled with the epistemological viewpoints of individuals (Marr, Gupta, Pike and Roos; 2003). Montague (1962) describes epistemology as the extent to which the things and qualities of the world are reliant upon their being related as objects to a knower or subject. Plato defined the concept of knowledge as ``justified true belief'' and there has been an unremitting philosophical discourse about epistemology throughout the evolution of philosophy involving philosophers such as Aristotle (1928), Descartes (1911), Locke (1987), Kant (1965), Hegel (1977), Wittgenstein (1958), Heidegger (1962), or Merlau-Ponty (1962). This debate demonstrates that epistemologies differ between individuals and, therefore, there are differing views of the knowledge process, influenced by the social and cultural contexts as well as by the ontology of individuals or groups of individuals (Marr, Gupta, Pike and Roos; 2003). Von Krogh et al. (1994) bring in the conception of corporate epistemology as the premise of how and why organizations know and how they consider knowledge is developed. By accommodating this conception of organisational epistemology, it can be deduced that in order for KM proposal to be doing well there has to be configuration between the epistemologies of individuals and the organisational epistemology within which these individuals are to function (Marr, Gupta, Pike and Roos; 2003). Marr, Gupta, Pike and Roos (2003) also examine the third outlook in the connectionistic epistemology in which organizations are seen as self-organized networks composed of relationships, the rules of how information is processed are not universal, they vary locally. These, at varying philosophical positions, impact the manner in which individuals and organizations analyse the practicalities of knowledge creation (Marr, Gupta, Pike and Roos; 2003).

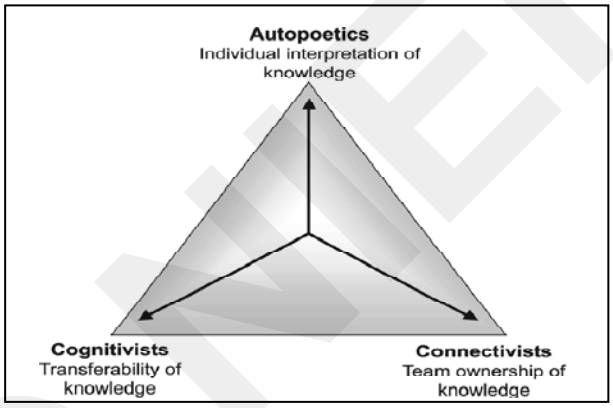
Dynamics of Knowledge Economy

There is mounting awareness that 'knowledge' is a key resource that needs to be nurtured, sustained, and, if possible, accounted for. Peter Drucker put it: 'We now know that the source of wealth is human knowledge. If we apply knowledge to tasks that we obviously know how to do, we call it productivity. If we apply knowledge to tasks that are new and different, we call it innovation. Only knowledge allows us to achieve those two goals'. The

technological explosion happened simultaneously with the knowledge capital movement. Knowledge is classically defined as having two major components- information and knowledge capital, and structural capital (Figure 2). At the same time, knowledge is not a straightforward uniform construct, rather a complex construct: Davenport and Prusak (1998) 'Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it is often embedded not only in documents or repositories but also in organizational routines, processes, practices and norms'. Information and knowledge capital is the organization's information and knowledge, both the informal and unstructured as well as the formal and structured. The structural capital is the mechanism in place to take advantage of the information and knowledge capital and to capture, store, retrieve, and communicate that information and knowledge.

FIGURE 1

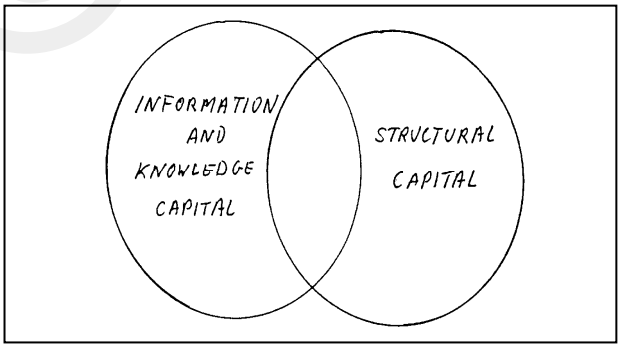
Classes of epistemology



Source: Marr, Gupta, Pike and Roos; 2003

FIGURE 2

Information and knowledge capital, and structural capital



Source: Hildreth and Kimble, 2002

The capital metaphor used to describe knowledge makes one think of the knowledge acquiring process as a uni-directional one, where past knowledge is automatically incorporated into present knowledge. There is uneasiness in this position. Denzau and North (1994), however, point out that "learning can be sometimes discontinuous and involve periods of stagnation and spurts known as 'punctuated equilibria' – a break in the progression of knowledge". Punctuated equilibrium involves long periods of slow, gradual change punctuated by relatively short periods of dramatic changes, which we can presume to be periods of representational re-description. Cultural learning (direct and mediated by "cultural artifacts") enters the scene as rapid change emerging in short periods and culminating in a new "representational re-description," i.e., in a new "reorganization" of mental models. Thus, there is complexity involved in conceptualisation of knowledge. In the context of an organisation, knowledge is recognized in financial accounts which allow it to be used as collateral in capital markets.

In the context of the knowledge economy therefore, knowledge is about accumulation of knowledge capital to products and turning new ideas into new products. The chief characteristics of knowledge economy can be briefly summed up as : knowledge economy uses technology to create symbolic goods; it places little reliance on the physical concentration or massing of labour, material, and money and, in fact, the emphasis is on de-massification; knowledge transcends firms, industry and national boundaries; technology rests in virtualisation of physical things; there is elimination of intermediaries in economic activity; personalization in knowledge economy which refers to active consumers engagement in knowledge economy; pricing of goods and services get dynamic; business is transacted in real time with no delay; finally, knowledge economy creates rapid customer communication.

Overall knowledge economy has a multitude of characteristics. There exist many plausible definitions of knowledge economy. In sum, the hallmark of knowledge economy is the ability of organisations to realize economic value from their collection of knowledge assets as well as their assets of information, production, distribution and affiliation. These features of a knowledge economy put the spotlight on knowledge and its management of the knowledge workforce. Thus, scholars and practitioners are recognizing the urgent need to adjust their models assumptions, and practices significantly to account for how work is and will be performed and organized in an increasingly information and knowledge-intensive world. The key point is that an alignment between corporate epistemological paradigm and the epistemological paradigm of the individuals in the company facilitates the choice of KM approach.

Deconstructing the Concept of Knowledge

According to Marr, Gupta, Pike and Roos (2003) 'The theoretical understanding of organizational knowledge has evolved over the last 50 years. Currently, various knowledge taxonomies exist simultaneously. This is not to say that workable universal definitions and taxonomies are beyond us. Also because of the 'intimations of an indeterminate range', as Polanyi (1966) phrases it, knowledge on a specific topic may not be measurable. A Return on Investment may not be computed: 'the sort of knowledge with which I have been concerned is knowledge of the kind which by its nature cannot enter into statistics' (Hayek 1945: 52–54). Knowledge is not a homogenous good (Neale 1984). For example, mathematical

theories of communication (Shannon and Weaver, 1962) were found to be helpful in delineating levels of information processing. Micro-economic analyses of uncertainty (Knight, 1921) were insightful in relating information to decision-making, and epistemology (Kuhn, 1970) potentially provided some discipline in thinking about knowing.

In the late 1970s and the 1980s, developments in artificial intelligence, expert systems, intelligent knowledge-based systems and their complementary challenges of knowledge engineering and symbolic representation and manipulation have likewise perhaps stimulated us to reassess knowledge. Indeed, the very hyperbole and confusion surrounding these technologies and techniques have demanded some conceptual classification. Knowledge as a subjective state in individuals' minds embedded in organisations and communities is referred to as the constructivist approach while knowledge as an objective state of things is the objectivist approach (Spender, 1998).The distinction coincides with that between tacit and explicit knowledge (Polanyi, 1966), soft and hard knowledge, (Hildreth, Nonaka et al., 1999), background and foreground knowledge, (Bhatt, 2001). The proponents of the objectivist view argue that knowledge management is a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organisational performance. Knowledge is a commodity to be traded and needs to be managed (Dodgson, 1993). On the other hand, the proponents of the constructivist view rely on the difference between information and knowledge.

According to Bhatt (2001), knowledge is different from data and information. Data are raw facts and, when organised, they become information. Knowledge is meaningful information. They claim that "the most important parts of knowledge cannot be handled as a thing for others". Nelson (1959) asserts that 'knowledge is of two roughly separable sorts: facts or data observed in reproducible experiments and theories or relationships between facts'. In implying that certain types of knowledge can successfully be distinguished from others, Stigler and Becker (1977) implicitly assume all knowledge to be knowledge-that. In fact, Ryle (1966) makes the plausible assertion that knowing-how is more extensive than knowing-that and that knowing that by no means entails or naturally flows into knowing-how.

Furthermore, according to Nonaka and Konno (1998), knowledge creation requires a shared context which they call ``*ba"* (equivalent to ``place'' in English). *Ba* is a shared space which can be physical, virtual, or mental. Knowledge, in contrast to information, cannot be separated from the context i.e. it is embedded in *ba.* (Marr, Gupta, Pike and Roos; 2003) Rooney and Schneider (2005) explain that knowledge is bound to human consciousness while data, texts and images are contained in storage media. They are clear that "because knowledge is sensitive to context and is fallibly enacted, it cannot be managed". The constructivist approach accepts not only individual knowledge but also knowledge that exists in the social context of groups, organisations and societies. While knowledge is created by and rests in individual employees, it is also created through social interaction and is embedded in the social structure of organisational members. In this context, Malhotra (1998) states, KM "embodies organisational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings". This makes it incomputable and lacking quantitative element.

In conformity with the constructivist view, the evasive and fluid nature of knowledge makes it exceptionally complex to be observed and managed in its pure form; as such, the concept of knowledge embeddedness deserves singular attention. According to Blackler (2002), knowledge could be embedded in numerous ways: embrained in terms of conceptual skills and cognitive abilities; embodied in terms of being action oriented, situational and only partially explicit, linked to individuals' senses and physical abilities; encultured in terms of shared understandings achieved in the process of socialisation and acculturation; embedded in systemic routines that include relationships between technologies, roles, formal procedures and emergent routines; and encoded in terms of information conveyed by signs and symbols in books, manuals, codes of practice and electronic media. Let us now move to the realm of duality of knowledge which highlights the issue of complexity of knowledge and, consequently, its management.

Duality in knowledge construct

Explicating on the constructivist and objectivist view of knowledge we need to recognize the binary nature of knowledge. In 1987, Boisot developed a model that considers knowledge as either codified or uncodified and as diffused or undiffused, within an organization. Similarly, according to Polanyi, 'Knowledge can exist as in essentially two forms; explicit or factual knowledge and tacit or "know- how" (Polyani, 1966). Tacit knowledge is a continuous activity and embodies an "analogue" quality. The tacit dimension is often implied in the use and implementation of explicit knowledge, i.e. knowledge that is codified into procedures or hard data. Ryle (1966) distinguishes between *know how* and *know that*. The ideas of Polanyi (1966) and Ryle (1966) can be seen to be complementary and make a useful contribution to an understanding of knowledge and a possible conceptualization of it by economists. The totality of knowledge, which is partly tacit, is the intermediate result of a perpetually ongoing process of acquiring knowledge (Ryle 1966; Dolfsma 2002b). Hence, while Ryle (1966) stresses the static view of the state of knowledge at any point in time, Polanyi (1966) lays more stress on the dynamic process responsible for reaching a particular position. Sackmann (1991) takes this a step further and differentiated between direction (*knowing-what*), recipe (*knowing-how*), and axiomatic (*knowing-why*) knowledge. Blackler (2002) distinguished between five different types of knowledge: *Embrained*: depends on conceptual skills and cognitive abilities; *Embodied*: action-oriented; *Encultured:* the process for achieving shared understandings; *Embedded*: resides in systemic routines; *Encoded*: information conveyed by signs and signals.

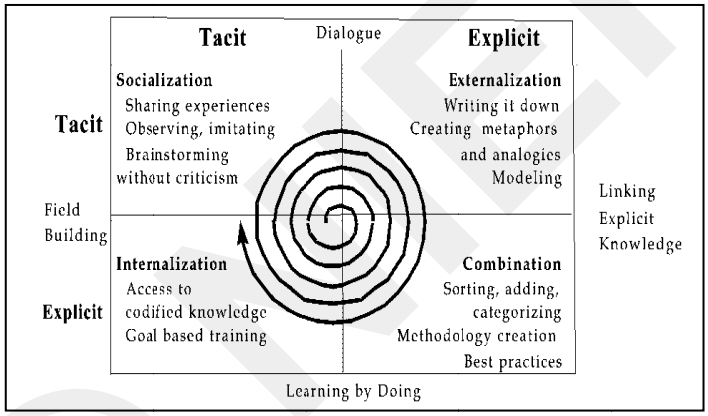
Kogut and Zander (1992) were among the first researchers who established the foundation for the knowledge-based theory of the firm when emphasizing the strategic importance of knowledge as a source of competitive advantage. Their work is focused on the idea that "what firms do better than markets is the creation and transfer of knowledge within the organization". Firms, as social communities, act as "a repository of capabilities" determined by the social knowledge embedded in enduring individual relationships structured by organizing principles. Kogut and Zander (1996) further extend their discussion on the concept of identity by asserting that individuals are "unsocial sociality" where they have both a desire to become a member of community and, at the same time, also have a desire to retain their own individuality. As firms provide a normative territory to which members identify, costs of coordination, communication, and learning within firms

are much lower, allowing more knowledge to be shared and created within firms (Haslinda and Sarinah; 2009).

An interesting view on knowledge-creation and knowledge-sharing is provided by Nonaka (1991) in "*A dynamic theory of organizational knowledge creation*". Nonaka (1991) considers two dimensions for knowledge creation: epistemological dimension and ontological dimension. The first dimension is related to the conversion of knowledge from tacit level to explicit level, and vice-versa. The second dimension is related to the conversion of knowledge from individuals to groups and further to organization. Combining these two motions, Nonaka gets a spiral model for knowledge creation and processing. This conversion process consists of four stages: socialization, externalization, combination and internalisation. Eventually, through a phenomenon that Nonaka calls the "knowledge spiral", knowledge creation and sharing become part of the culture of an organisation.

FIGURE 3

Nonaka Knowledge Spiral



Source: Hildreth and Kimble, 2002.

In Nonaka's spiral of knowledge, tacit knowledge is 'shared' through inter-personal interaction. If we view knowledge as a duality, then by implication, all knowledge is, to some extent, a combination of both hard and soft. Therefore, both perspectives are needed and must be taken into account in an attempt to manage knowledge (Hildreth and Kimble; 2002) Although under certain circumstances, tacit knowledge can become explicit, it is, perhaps, more accurate to say that even then, only part of what is tacit is made explicit. In practice, the tacit and explicit dimensions of knowledge are inexorably and inextricably interwoven.

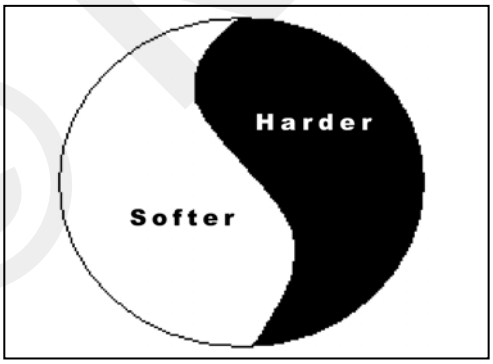
Viewing knowledge as a duality can help explain the failure of some KM initiatives. When the harder aspects are abstracted in isolation, the representation is incomplete as the softer aspects of knowledge must also be taken into account. Here I will use Hildreth and Kimble's (2002) terms "hard knowledge", as what can be articulated, and "soft knowledge" as what cannot be articulated. Winograd and Flores (1986) described soft knowledge as 'lost in the unfathomable depths of obviousness'. To move towards the management of soft knowledge, we need to understand the processes that govern its construction and nurturing in an organisation. Lave and Wenger (1991) suggest that a process called Legitimate

Peripheral Participation (LPP) in Communities of Practice (CoPs) can assist the creation and sustenance of such knowledge. Hard knowledge can be articulated and may be exemplified by tasks the members of a CoP perform. Thus, CoPs are more than environments in which soft knowledge is developed-both hard and soft knowledge are created and shared (Hildreth and Kimble's, 2002).

Many KM researchers accept knowledge as a dichotomy. Yet, Hildreth and Kimble (2002) propose to view knowledge as a duality instead of being dichotomous. If we view knowledge as a duality then by implication, all knowledge is, to some degree, both hard and soft; it is basically that the equilibrium between the two fluctuate. Hargadon (1998) puts it as, 'the important knowledge is all in people's heads', that is the solutions on the server only represent the harder aspects of the knowledge. For an inclusive picture, the softer aspects are also crucial. Undoubtedly, there needs to be a reallocation from purely capturing and leveraging knowledge to supporting erudition and the partaking of knowledge. Viewing knowledge as a soft-hard duality subsequently begs the question - how can this duality be managed? Finerty (1997) points out that technology has a task to play, but that the prominence needs to shift from trying to wrap up knowledge as an object to using technology as a technique of sharing experience. This view is also echoed by Davenport and Prusak (1998), who underscore the potential of technology as a means to construct links between people. However, most technologies presently stay focused on the partaking of abstracted, harder aspects of knowledge in the form of reports and documents. If knowledge is predominantly soft, then the participation proportion of the duality will be higher. Conversely, the harder the knowledge, the greater the proportion of reification.

FIGURE 4

Soft-hard knowledge duality



Source: Hildreth and Kimble's (2002).

Hedlund and Nonaka (1993) argue that knowledge transfer in organizations is not as uncomplicated as Nonaka's simple matrix suggests. Knowledge transfer can be very convoluted and complex and hence, a more elaborate version of Nonaka's model was developed to explain the four levels of carriers or agents of knowledge in organizations (Haslinda and Sarinah; 2009). This four levels of 'carriers' perspective assumes that knowledge is categorized into the individual, the group, the organization and the inter-

organizational domains (Haslinda and Sarinah; 2009). In this aspect, the inter-organizational domain includes important customers, suppliers, competitors and others.

Knowledge management has also been argued as intellectual capital (Chase, 1997; and Roos and Roos, 1997). The intellectual capital model of knowledge management was developed by a Swedish firm called Skandia as an approach for computing its intellectual capital. The model focuses on the significance of equity, human, customer and innovation in managing the flow of knowledge within and externally across the networks of partners. Skandia intellectual capital model of knowledge management gives a strong importance to measurement associated with each of the decomposed elements (human, customer and structure) of knowledge management, assuming that it can be securely controlled.

According to Frid's (2003), knowledge management framework, the knowledge management maturity assessment levels and knowledge management implementation can be divided into five levels. The five maturity levels are knowledge chaotic, knowledge aware, knowledge focused, knowledge managed, and knowledge centric. Of matching significance is knowledge that has a subjective component and can be viewed as an ongoing phenomenon, shaped by social practices of communities (Boland and Tenkasi, 1995). Bratianu and Andriessen (2008), analyzing the metaphor knowledge as energy, showed new opportunities for understanding knowledge dynamics. Knowledge can be considered as a field, a continuous non-uniform and non-homogeneous distribution of meanings and feelings in a certain organizational design and physical space. Bratianu and Andriessen (2008) made an analogy between potential energy and tacit knowledge, on the one hand, and kinetic energy and explicit knowledge, on the other. Bearing in mind the transformation process of potential energy into kinetic energy and mechanical work, the authors postulate the same possible process for transforming tacit knowledge into explicit knowledge. That means that externalization should be used actually for generating cognitive work through explicit knowledge.

The objective essentials of knowledge have an impact on process while the subjective elements typically impact innovation. Thus, as pointed out previously, we have an interesting duality in knowledge management that some have called a contradiction and others describe as the *loose-tight* nature of knowledge management (Malhotra, 2000). The *loose-tight* nature of knowledge management comes into being because of the need to distinguish and illustrate some distinctive philosophical perspectives; namely, the Lockean/ Leibnitzian stream and the Hegelian/Kantian stream. Models of convergence and compliance, representing the *tight* side, are grounded in a Lockean/Leibnitzian tradition. These models are critical to offer the information processing aspects of knowledge management, more particularly by enabling efficiencies of scale and scope and, thereby, supporting the objective view of knowledge management. In contrast, the *loose* side provides agility and flexibility in the tradition of a Hegelian/Kantian perspective. Such models identify the value of divergence of meaning which is essential to support the "sense-making", subjective view of knowledge management. Further, by distinguishing the manifestations of duality that exist with the knowledge construct and thereby taking such a holistic perspective, not only are both sides of these duals recognized (i.e. the loose and tight perspectives, subjective/objective, consensus/dissensus, Lockean/Lebnitzian vs Hegelian/ Kantian) but also, and more significantly, both are required for knowledge management to accurately flourish.

A Leibnizian inquirer is a closed system with a set of built-in elementary axioms that are used along with formal logic to deductively generate more general fact nets or tautologies. An organizational application of the Leibnizian approach can be observed when the policies, goals, ideas of purpose, and core values, established by the organization's designers, serve as Leibnizian axioms. Inquiring systems, based on Lockean reasoning, are experimental and consensual. Elementary observations form the input to the Lockean inquirer, which has a basic set of labels (or properties) that it assigns to the inputs. The Lockean system is also competent in observing its own process by means of reflection and backward tracing of labels to the most elementary labels. The importance for organizations are, thereby, twofold viz. a) to identify and comprehend this causal principle of duality and b) to employ it by, in essence, finding the "right mix" of the duality, or harmonious equilibrium between these duals for the specific context. Thus, the Lockean inquiring organization, grounded in a Lockean inquiring system, should not completely disregard aspects of a Hegelian or Kantian inquiry system in order to construct a fuller representation of "valid" knowledge. The Kantian system is an amalgamation of the Leibnizian and Lockean approaches in the sense that it encloses equally theoretical and empirical components. The empirical constituent is capable of receiving inputs, and, therefore, the system is unlocked. It engenders hypothesis on the foundation of inputs received. A clock and kinematic system are used for verification of the time and space of inputs received. The Kantian organization is able to use unequivocal knowledge and implicit knowledge (i.e., hunches, intuition, experience, insights) to consider the many interpretations of inputs. Hegelian systems function on the assertion that greater enlightenment results from the conflict of ideas. Knowledge gained through Hegelian inquiry may result in an entirely new strategic direction for a given organization, as Mason (1969) has shown in his work on dialectical planning systems.

Lastly, we turn to the actual target of development, the Churchmanian Knowledge Management System (CKMS). Richardson and Courtney (2004) define a CKMS as "a purposeful and ethical information system that creates exoteric knowledge and provides a link between knowledge and action in an organization". "Exoteric" knowledge is defined as the opposite of specialized knowledge. A design goal of exoteric information is that, for the most part, the information is readily understandable and usable by everyone, or at least a wide audience. The Singerian Churchmanian Knowledge Management System model is teleological and places great emphasis on ethical behavior. The Singerian organizations seek the creation of exoteric (common) knowledge, as opposed to the esoteric knowledge created by the other systems. The Singerian organization has the purpose of creating exoteric knowledge for choosing the right means for one's end. Knowledge must be connected to measurable improvements. It is important to note here that unlike with data, this "right mix" is neither programmable nor algorithmic and, thus, requires a deep understanding of the duality principle as well as the organization's specific context and what is significant in that specific context, in the process "valid" knowledge should be resultant; and, hence, a state of wisdom achieved. Given this connection with the context and the non-programmable nature of the knowledge construct, such an understanding becomes a necessary step for organizations to successfully leverage the full potential of their intangible and primarily people assets and, thereby, prosper in a dynamic and complex knowledge economy.

Managing knowledge: A complex proposition

It becomes clear after looking at the literature that the term knowledge suffers from a high degree of what may be called "terminological ambiguity and complexity" and requires a host of adjectives to make it clear on exactly what sense it is being used. On account of this ambiguity, approaches to knowledge management have tended to concentrate on attempts to capture and control what is sometimes termed as 'structured knowledge' (Davenport and Prusak, 1998). In fact, initially knowledge management (KM) was seen as an extension to Artificial Intelligence (AI) where knowledge was viewed as information: a commodity that can be codified, stored and transmitted. According to Hedberg (1981), the learning process is reflected in structural elements and outcomes that are the result of growing insights and the successful restructuring of organizational problems. Hence, learning comprises both action outcomes and changes in the state of knowledge. New knowledge provides the source for organizational revitalization and sustainable competitive advantage. In diverse studies, knowledge acquisition has been correlated with organizational performance as well as with the performance of specific organization tasks. The contemporary view of organizations is founded on adaptive learning, which is about coping. Adaptive learning or single-loop learning focuses on resolving problems in the present without examining the appropriateness of current learning behaviours. According to Argyris (1992), "The massive technology of MIS, quality control systems, and audits of the quality control systems is designed for single loop learning". To maintain adaptability, organizations need to operate themselves as "experimenting" or "self-designing" organizations.

There are also two characteristics of organizational knowledge structures that become important for understanding how these structures work (Kimble, C., P. M. Hildreth, et al. 2004). The emphasis was placed on managing so called 'knowledge assets' that were tangible, and could be structured and codified, such as patents, trademarks and documents. This view of knowledge as an object continues to dominate the KM field with some researchers still viewing the capture of knowledge as the main challenge for KM. When something is to be managed, it must be quantified, counted, organised and measured. (Glazer, 1998); KM must be able to be built, owned and controlled if its value is to be maximised (Allee, 1997).

Knowledge Management encompasses company assets such as competencies, relationships, and information. Knowledge is to be managed purposely through specific tools, especially through batteries of indicators. Paramount to knowledge management is the incorporation of the socio-technical perspective of people, processes, and technologies (Alavi & Leidner, 2001; Wickramasinghe, 2005). Jennex (2005) defined KM as the practice of selectively applying knowledge from previous experiences of decision making to current and future decision-making activities with the express purpose of improving the organization's effectiveness. Also, Jennex (2005) viewed a KM system as that system created to facilitate the capture, storage, retrieval, and reuse of knowledge. Guthrie emphasizes the importance of intellectual capital and defines KM as "management of the intellectual capital controlled by the company". The process of management is based on transformation of the environment from the "unknown/uncommon" into "known/common." During the process, the chaotic, disorganized environment changes into a coordinated entity whose activity, governed by clear rules, results in a constant, predictable and expected product. Often depicted as a series of linear events, subjected to "if-then" or "when-then" principle, the

process of management consists, in reality, of integrating and sustaining the integration of several independent "systems" (people, operational divisions, companies, etc.) into a higher functional unit. Intellectual capital or unique knowledge is a special form of human capital that is codified, formalised, captured and leveraged to produce a higher value asset. Another important definition of KM is given by Holsapple and Joshi (2004), who consider KM as an entity's systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity in the sense of positive results in accomplishing its objectives or fulfilling its purpose. The entity's scope may be individual, organizational, trans-organizational, national, and so on.

A close look at the definitions of KM implies that some criteria must be met before information can be considered knowledge. Knowledge has to be allied. It exists in a collection (collective wisdom) of multiple experiences and perspectives. Knowledge management is a catalyst. It is an action leveraging process. Information that does not precipitate action of some kind is not knowledge. In the words of Peter Drucker, ''Knowledge for the most part exists only in application.'' Information becomes knowledge only when it is used to address novel situations for which no direct precedent exists. Information that is merely ''plugged in'' to a previously encountered model is not knowledge and lacks innovation. This, again, draws a clear line of distinction between information management and knowledge management. Both are significant to an organization's success, but each addresses diverse needs and requires different approaches. Information management consists of pre-determined responses to anticipated stimuli. Knowledge management consists of innovative responses to new opportunities and challenges. Knowledge-based solutions, however, focus on the application of innovative new responses in a volatile work environment. Knowledge must be internalized; it co-exists with intelligence and experience and emanates at the points where decisions are made. For this reason, the primary repository for knowledge is people's brain. Electronic and paper-based ''knowledge repositories,'' then, are merely intermediate storage points for information enroute to people's brain.

Organization learns from experience about events and instances which are built up in the course of time. These experiences becomes more complex and more abstract over time (Martin, 1982). Thus, the *first* characteristic of the knowledge structures is that of involvedness and intricacy. Intricacy or complexity refers to the amount of information or the number of elements within a knowledge structure. The *second* characteristic, relatedness, refers to the linkages between elements in the knowledge structure, particularly the links between core and peripheral elements. Anderson (1983) suggests that in knowledge representations, 'large knowledge structures must be encoded hierarchically, with smaller cognitive units embedded in larger ones.' In fact, Anderson suggests that sub-hierarchies may become embedded within other hierarchies, creating 'tangled hierarchies'. The complexity of the knowledge structure influences the ability of organizational members to retrieve elements that have become embedded in the hierarchical structure. This influences their ability to respond to environmental changes and new situations. Levitt and March (1988) suggest that the memory of organizations is orderly but inconsistent. They suggest that knowledge becomes 'nested within' other knowledge, but not all events are recorded. Organizations do act as repositories which include the personnel, the rules of operation, stories, and computer bases. The more complex the structure, the more the simple units may become hidden or forgotten. The original element or experience may

become lost because of employee changes, because of aversion to the topic, or because the direct relationships have become unclear (March and Olsen, 1975).

The recognition that KM is a 'people' process and that knowledge is not simply an object marks a major shift in emphasis for KM. With the increased interest in knowledge that cannot be captured, a number of researchers have begun to realise that its management poses significant challenges and that existing approaches to KM are not adequate. As Offsey (1997) notes: "what many software vendors tout as knowledge management are only existing information retrieval engines". This is a limited and ultimately hazardous perception in KM. Seely Brown and Duguid (1998), elaborating on the same point, make a distinction between *know-how* and *know-what*. "The organisational knowledge that constitutes 'core competency' is more than 'know what' explicit knowledge which may be shared. A core competency requires the more subtle 'know-how'-the particular ability to put know-how into practice. The concept of *Technik* used to describe knowledge, even though more encompassing, still alludes not only to the materiality of knowledge technologies, but also techniques and the technics of the political and economic structures that knowledge is embedded in. *Technik* is a German word that cannot be easily translated; in fact, one needs to employ three English words to attempt a translation of *Technik*: technology, technique and technics. In relation to KM, *Technik,* therefore, refers not only to the material hardware of knowledge technologies but also the means of production and the technical relations of production. Swan et al. (1999) found, in a recent review of the KM literature, that in 1998, nearly 70 per cent of KM-related articles appeared in information systems and information technology literatures. This is not surprising considering the general perception that new technology will inevitably produce economic and social progress, which will eventually lead to a 'post-industrial society' (Bell, 1974) or 'knowledge society' (Drucker, 1993)

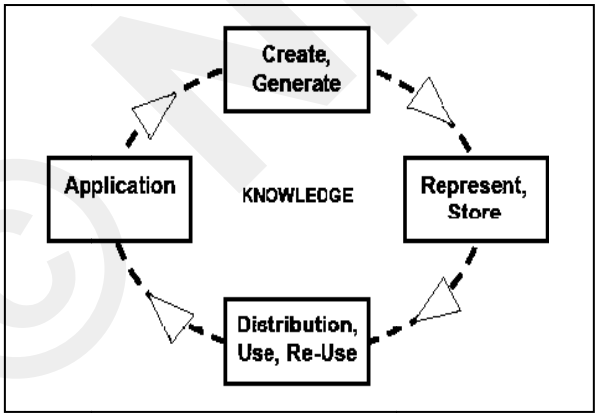
The Alavi and Leidner (2001) framework is shaped around four constructs in the organizational knowledge management process. They state that "organizations as knowledge systems consist of four sets of data: (1) creation (also referred to as construction), (2) storage/retrieval, (3) transfer, and (4) application. The four constructs of this model are essential to effective organizational knowledge management" (Alavi & Leidner, 2001). Ingrained into the process of KM is also the so-called knowledge cycle. This cycle integrates knowledge through four main phases, which should be observed interactively rather than by a linear approach (OECD, 2001): the first is knowledge acquisition, which focuses primarily on searching among various sources of information and knowledge, on their selection, and on ways to bring the existing knowledge in the possession of individuals and organisations; the second involves knowledge creation, which focuses on the development and increasing bulk of new knowledge; the third is knowledge transfer, distribution, dissemination and sharing, aiming for relevant knowledge reaching relevant individuals, groups and organisations as soon as possible; and the fourth entails knowledge utilisation and application in various environments, which is the ultimate goal of the economic organisations and systems as well as individuals.

All healthy organizations have to generate knowledge. They, therefore, absorb information, combine it with their experiences, values and internal rules, turn it into knowledge, and take action based on it. Generating knowledge can be performed in many ways. The main three modes among these are knowledge acquisition, knowledge generation within the firm and collaborative knowledge generation. Imitation, benchmarking, replication, substitution, purchasing, outsourcing and discovering are some of the various

methods of knowledge acquisition. Although acquiring useful knowledge is an important mode of knowledge generation, many consider that the real competitive advantage comes from the capability of an organization to generate new knowledge within the organization. In this context, the key success factor has been shifted from information processing to knowledge creation and continuous innovation (Malhotra, 2000). Therefore, one of the most important objectives of KM is to bring together intellectual resources and make them available across organizational boundaries. The Knowledge Management Implementation in effective use of technologies creates new ways of knowledge transfer and holds promising solutions both in transfer of explicit knowledge and tacit knowledge; in terms of experience and expertise. Although technology can aid in the knowledge activity process, it cannot initiate the knowledge process without the interaction with its human counterparts, who provide the contextual perspectives that are necessary for the relevant generation of knowledge in an attempt to make sense of reality (Wickramasinghe, 2005). Human and social factors are central in the creation and communication of knowledge. In this respect, these technologies have a strategic importance, not only in knowledge transfer inside the organization but also knowledge transfer among different organizations. However, formal or informal social processes and cultural issues are just as important as technological systems in knowledge transfer and sharing. Keeping all these aspects in mind, knowledge management strategies seek a synergic combination of technological systems with socio-cultural processes.

FIGURE 5

The primary steps of KM



Source: Wickramasinghe, 2005

Knowledge acquisition is the starting point of the organizational knowledge cycle (Wickramasinghe et al., 2005). Knowledge acquisition is the capture of the existing knowledge through activities such as knowledge transfer, knowledge sharing, observation, interaction, and self-study. In order for knowledge to be used efficiently and effectively in an organization, it must be represented and stored. In many ways, knowledge representation is closely linked to knowledge creation. Knowledge distribution is the third and central activity in the organizational knowledge cycle. The knowledge distribution component interacts with

each of the other organizational knowledge activities to optimize and complete the knowledge activity structure within an organization. Social processes, such as organizational procedures, hierarchical structure, and social networks affect member interaction within an organization: they are capable of directly enabling or hindering the functions of the knowledge distribution process of an organization. Knowledge application constitutes the last activity in the organizational activity cycle and is predominantly concerned with the utilization and management of knowledge that has been acquired and created by the organization. Most of the literature relating to knowledge management addresses concerns related to the application of knowledge within organizations. The focus of knowledge application relates to how knowledge should be utilized in order to add value to the organization and create an advantageous position. Knowledge application is contextual and perceptive in nature. In order to effectively apply knowledge, one must understand the underlying contexts and operational boundaries, and use the knowledge to create an acceptable answer to the perceived reality of the situation.

An important factor of the KM processes of a firm is the constant need for evaluation and re-evaluation and benchmarking, as this knowledge provides primary opportunities (and constraints) from which to compete and grow over the near to intermediate term. Zack also develops the knowledge-based *SWOT* analysis, mapping the firm's knowledge resources and resource gaps against its strategic opportunities and threats, to understand their strengths and weaknesses. Organizations can use this map to strategically guide their KM efforts. KM strategy can be thought of as balancing knowledge-based resources and capabilities to the knowledge required for attaining a sustainable competitive advantage.

While discussing KMS frameworks, Jennex and Olfman (2004) recommend that developing a successful KMS would involve designing a technical infrastructure, incorporating KM into processes, developing a secured KMS and knowledge structure for the enterprise, gaining senior management support, and building motivational factors into the system. Other research indicates that leadership, investing in people and developing supporting organizational conditions are critical to achieving success in a KM programme (Chourides et al., 2003). Though KM promotes development and application of knowledge to attain enterprise's ultimate goal of profitability, the implicit purpose of KM is to empower knowledgeable individuals with intellectual tasks in order to promote learning (Wiig, 1999).

Concluding Observations

Connor and Prahalad (1996) state that a knowledge-based firm maximizes its knowledge assets so that it can effect more effective and efficient operations and incur significantly lower transactions costs. It becomes imperative for knowledge-based organizations then to carefully manage their intellectual assets because by doing so they can maximize the benefits of lower transactions costs. However, knowledge faces barriers and is relatively immobile. Kogut and Zander (1989) also point to the "inertness of knowledge". In the 1997 study titled *Linkage Inc.'s Best Practices in Knowledge Management & Organizational Learning*, Ernst & Young found that firms acknowledge barriers to effective knowledge transfer as cultural differences, lack of top management support for knowledge initiatives, organizational structures, and a lack of standardized processes for effective KM. Internal "stickiness" of knowledge is defined as the difficulty of transferring knowledge within the organization, and is similar to "difficult to imitate".

Undoubtedly, the swift growth of technology has led to an economy where competitive advantage is based even more on the successful application of knowledge (Lengnick-Hall & Lengnick-Hall, 2003). Knowledge is a compound construct, exhibiting many manifestations of the phenomenon of duality such as subjectivity and objectivity as well as having tacit and explicit forms. Overlooking this occurrence of duality in the knowledge construct, however, will serve only to detract from the ability to realize the true potential of any organization's intangible assets. Knowledge Management, therefore, remains a slippery term with no universally accepted foundation for knowledge yet developed. We also have to admit that the literature on KM is still grappling with the complexity in managing knowledge and safely continues to reflect a techno-centric focus, similar to that of information management.

While many organizations have implemented knowledge management (KM) initiatives, it remains unclear as to the extent to which they have been successful in delivering the anticipated outcomes, and why. Research studies show that it is difficult to assess return on investment of KM. Unlike materials or equipment, the core competencies and distinctive abilities of employees are not listed on balance sheets (Austin & Larkey, 2002). As a result, factors that contribute substantially to a firm's success elude traditional means of quantification, thereby presenting significant challenges to KM performance measurement.

More than a semantic shift, the conceptual move towards a multi-disciplinary approach is imperative within organisations committed to understanding knowledge and managing it. KM has to create a culture, an organisational climate, in which the knowledge workers actually want to apply their knowledge for the benefit of the organisation. It has an ethical, social and moral dimension as it speaks of the type of organisational culture necessary for successful knowledge management, a culture in which the sharing of information and knowledge is valued. In the course of pursuing objectives, organizations incrementally alter the institutional structure. On the one hand, they are shaped by the incentives embedded in the institutional framework, while, on the other, their evolving exigencies stimulate "changes at the margin" in institutions. Therefore, institutional change derives from the aggregation of "thousands of specific small alterations". But what is often lacking in many of these pronouncements is a practical blueprint for implementing this conceptual advice. While "leveraging knowledge" certainly sounds like a good strategy, managers still continue to wonder what that means and, more significantly, how best they can facilitate it.

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Determinants of Schooling in India

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Abstract

The objective of this paper is to examine the determinants of schooling in India. Using data from Selected Educational Statistics, GoI and the National Sample Survey Organisation (NSSO) on Employment and Unemployment, for 2004-05, the nature and disposition of school attendance for children in the age groups 5 to 14 years, and also the gender disparities that prevails is explored. The paper also examines the role of a number of factors such as the household and religious characteristics and others in a cause-effect relationship by estimating an econometric model. The result of the analysis shows that while income is a determining factor, its significance is undermined by the educational level of the household head which affects children's schooling more than income. Higher educational level of the household head has a positive spill-over effect on the schooling of children, while, on the other hand, lower income inhibits their schooling.

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Introduction

The pioneering work of Sen (1985) drew attention to the role of literacy rate and education as a measure of the standard of living of countries (Basu and Foster, 1998). Recognizing the crucial role that education can play, promoting education has been a cornerstone of the social objective of the Government of India (GoI). The right to free and compulsory education for all children in the age group of 6 to 14 years has been set as a Fundamental Right in the Constitution of India, and was made into an Act in 2009 called the Right of Children to Free and Compulsory Education. Several programmes have been implemented, both at the national and state levels, over the years in order to achieve this goal. Among them were the Operation Black Board in 1987; National Literacy Mission (NLM) launched in 1988; District Primary Education Programme (DPEP) in 1994 and the Sarva Shiksha Abhiyan in 2000, with all of them aimed at providing quality education and improvement in school enrolment for both boys and girls. However, in spite of this Constitutional guarantee and the subsequent government actions, less than half of India's children population between ages six and fourteen are not in school (Weiner, 1991).

Following this, the main objective of this paper is to examine the determinants of children's schooling in India. Accordingly, this paper also highlights the various factors for children's non-attendance in schools and the gender disparities that exists. Further, the social and household characteristics, which play a major role in determining the extent of school attendance of children, have also been highlighted.

The rest of this paper is organized as follows: Section 2 describes the data sources and methodology used to analyze the determinants of schooling in India. Section 3 examines the nature and disposition of children's school attendance and the gender differences therein. In Section 4, the results of an econometric exercise have been discussed while the last section, Section 5, concludes the paper.

Data and Methodology

The study is based on children in India in the age group 5 to 14 years. Secondary data, obtained from Selected Educational Statistics (SES), 2004-05, Ministry of Human Resources Development, GoI and the National Sample Survey Organisation (NSSO) unit data on employment and unemployment, surveyed during the 61st rounds (2004-05), has been used.

In the NSSO survey, detailed information on economic activities, demographic characteristics and household assets were collected from roughly 1,20,000 households covering more than 6,00,000 individuals, of which 1,36,000 are children of the age group 5 to 14. The survey covers almost the entire territory of India. The samples are stratified and, therefore, weights are a natural part of the data sets. Information on whether children are attending any educational institutions is provided for in the data sets which has enabled the establishment of children (by age) who are currently attending schools and those who are not.

Besides the NSSO unit level data, SES has also been employed to supplement the needed information, such as drop-out rate, enrolment and number of schools corresponding to the year 2004-05.

In order to examine the likelihood of children attending school in India, the econometric estimation is carried out by the maximum likelihood probit analysis (Section 4) by

conditioning on a set of independent variables, that are assumed to affect the schooling of children. For this purpose, the 2004-05 employment and unemployment surveys, conducted by the NSSO, have been used. The dependent as well as explanatory (or independent) variable has been derived from the NSSO employment and unemployment data set.

One of the limitations of this study is that due to the non-availability of data for pre-primary classes which is for 3 to 5 years (SES, 2007-08:A4), it has been assumed that the minimum entrance requirements covers classes I to VIII only corresponding to the age group 5 to 14 years. This is as defined by the gross enrolment ratio (GER), which is the percentage of enrolment in classes I-V and VI-VIII to the estimated population in the age group 6 to below 11 years and 11 to below 14 years respectively (SES, 2007:XIII).

Children's School Attendance and Non-attendance

In order to examine the nature and disposition of schooling in India, the proportion of children currently attending and not attending school for various ages from 5 to 14 years has been presented. In this context, the cause of non-attendance in schools or withdrawal from schools for children has also been examined.

Table 1 presents the proportion of children currently attending school by age and gender.

TABLE 1

Proportion of Children Currently Attending School by Age and Gender

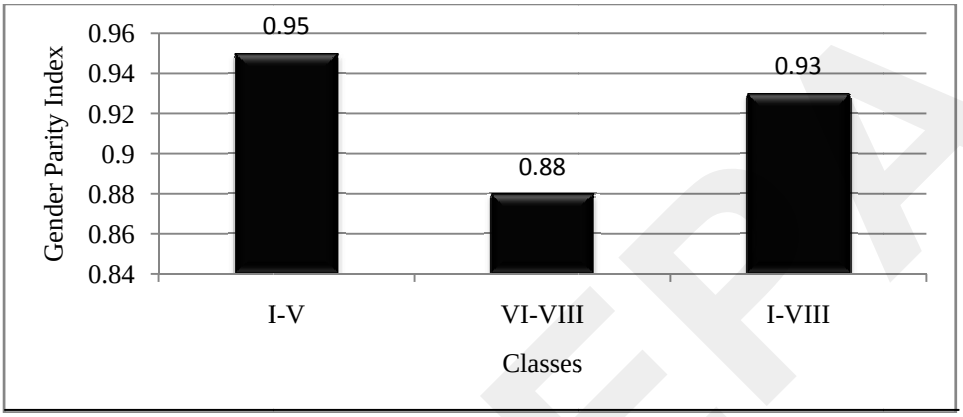
Age	*Boys*	*Girls*	*Total*
5	59.30	57.33	58.38
6	81.08	78.55	79.85
7	89.87	86.47	88.27
8	89.98	86.86	88.50
9	94.31	88.64	91.52
10	90.55	86.05	88.48
11	93.72	88.02	91.11
12	87.04	79.29	83.51
13	86.58	77.44	82.10
14	81.23	68.72	75.28
Total (5-14)	84.85	79.40	82.32

Source: Special tabulation by the author using unit record data on Employment and Unemployment collected by the NSSO during 61st round of survey.

As can be seen from Table 1, gender disparity in education is evident even from the lower age of five years. For instance, at age five, 59 per cent of boys are attending school while it is only 57 per cent for girls. While gender differences prevail at lower ages and classes, yet it is more magnified with age and, at higher classes, as the age increases, the percentage of girls attending school starts to dwindle more rapidly than boys. This is further corroborated in Figure 1, which presents the gender parity index for Classes I to VIII, corresponding to the age group 5 to 14 years. The gender parity index for Classes VI to VIII is

at 0.88 compared to 0.95 for Classes I to V (Figure I). This corresponds with the figures reported in Table I; where the gender gap in school attendance shows a steady increase with age.

FIGURE 1
Gender Parity Index in India



Source: Selected Educational Statistics, 2004-05

Several studies had also reported similar educational disparities between girls and boys. For instance, UNICEF (1999) had estimated that 41 per cent of Indian girls under the age of 14 years do not attend school. Viswanathan (2006) reported that about 47 per cent (and 37 per cent) of boys and 55 per cent (and 40 per cent) of girls in rural (urban) India were not literate. NSSO (2010) estimated that 50 per cent of females and 43 per cent of males (in the age group 5 to 29 years) are currently not enrolled in schools. Table 2 presents the proportion of children who are currently not attending school.

TABLE 2
Proportion of Children Currently Not Attending School by Age and Gender

Age	*Boys*	*Girls*	*Total*
5	40.70	42.67	41.62
6	18.92	21.45	20.15
7	10.13	13.53	11.73
8	10.02	13.14	11.50
9	5.69	11.36	8.48
10	9.45	13.95	11.52
11	6.28	11.98	8.89
12	12.96	20.71	16.49
13	13.42	22.56	17.90
14	18.77	31.28	24.72
Total (5-14)	15.15	20.60	17.68

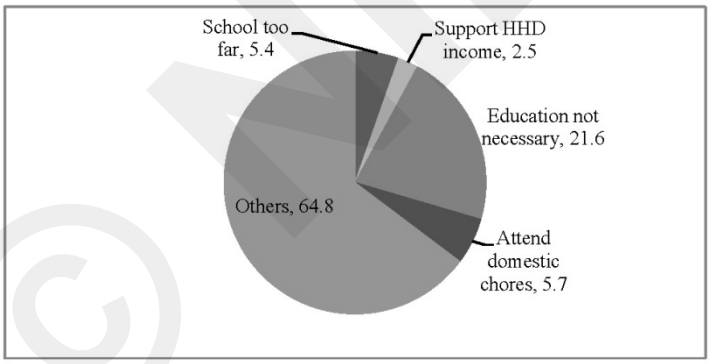
Source: As in Table 1

As can be gauged from Table 2, the proportion of children not attending school is the highest for those aged 5 years. This is because most children are "willingly" being sent to school from the age of 6 to 9 years (Acharya, 1994: 3101). This is evident from the Table, as beyond the age of 9 (specifically, beyond 11 years of age), the proportion of children not attending school widens with increase in age. Interestingly, the percentage of girls not attending school surpasses that of boys substantially. This observation further confirms that education gaps between boys and girls deepen considerably with age. For instance, Berreman (1972) noted that most families in India considered the education of girls as "entirely useless and actually detrimental" (Berreman, 1972: 331), which is not necessarily the case for boys.

The reasons for a boy child not attending school differ from that of a girl child. NSSO has classified the status of current attendance for persons who were not currently attending any educational institutions. The reason for not attending has been categorised into the following: (i) school too far, (ii) to supplement household income, (iii) education not considered necessary, (iv) to attend domestic chores, and (v) others, for those 'never attended', 'discontinued studies' and 'dropped out'. To bring out these differences, the reason for being out of school for girls and for boys has been graphically presented in Figure 2 and Figure 3, respectively.

FIGURE 2

Percentage of Girls (Age 5-14 years) Not Attending School, 2004-05

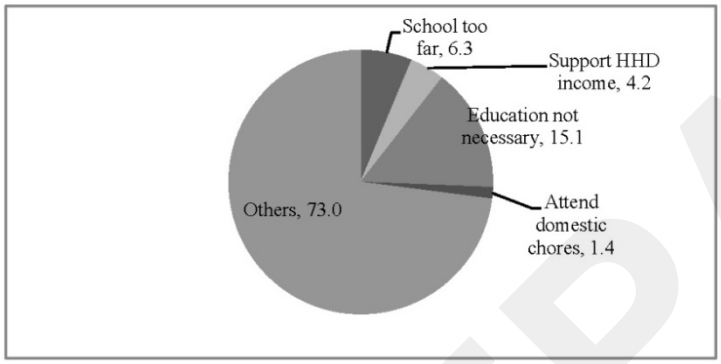


Source: As in Table 1

Children are not attending school for various reasons. It can be gauged from Figures 2 and 3, that a greater proportion of boys compared to girls are not attending school to support household income. About four per cent of boys do not attend school to support household income while two per cent of girls are out of school for the same reason. This again re-ensures the fact that though larger proportion of girls remains out of school, only a small proportion of them enter the labour market to support their families financially. Girls are not attending school mainly to attend domestic chores – surpassing boys by almost four percentage points. Again, almost 22 per cent of the girls are not sent to school on the ground that education is not necessary while the corresponding proportion for boys is comparatively lower at about 15 per cent.

FIGURE 3

Percentage of Boys (Age 5-14 years) Not Attending School, 2004-05



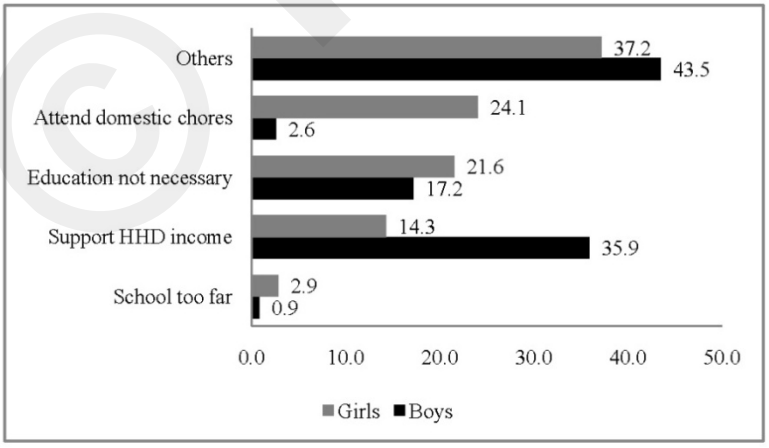
Source: As in Table 1.

It is also evident from the figures that around 65 per cent of girls and 73 per cent of boys are not attending school due to 'other' reasons. As stated earlier, non-attendance, discontinuance of studies or withdrawal from schools and dropping out contribute to this higher percentage.

Figure 4 presents the percentage of children who had been attending school but are currently not doing so and the reasons thereof.

FIGURE 4

Percentage of Children having attended School but currently not attending, 2004-05



Source: As in Table 1

As established from Figure 4, girls' withdrawal from schools largely appear to be the based on the consideration that their education is not important (21.6 per cent) with

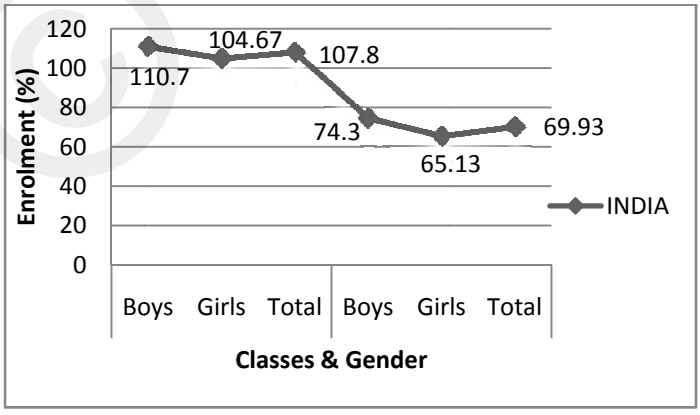
precedence being given to attending domestic chores (24.1 per cent). Supporting household income (14.3 per cent) is another major factor responsible for girls truncating their education. The conflict between the pursuit of education with that of familial roles lead girls to abandon school at an early age (Kalbagh, 1991). This also brings out the social attitudes—the reluctance to send girls to school as they tend to be married off early, social or religious beliefs about sending daughters to school or having daughters working away from the home and being in prolonged contact with males without supervision (Beutel and Axinn, 2002; Meier and Rauch, 2000; Holmes, 2003; Khan, 2007). As suggested by the figure, the reluctance of parents in sending their daughters to school on account of it being too far is almost three percent while it is less than one percent for boys. On the other hand, boys' withdrawal from schools is largely accounted for by their need to support the household income (35.9 per cent) which is purely an economic factor as opposed to social considerations of education not being important (17.2 per cent) and attending to domestic chores (2.6 per cent).

Further, about 43 per cent of boys and 37 per cent of girls are observed to have been withdrawn from school for other reasons. One possibility is that they have never attended school at all. SES (2004-05) reported that about 35 per cent of persons in the age group 5 to 29 years never attended school as of 2004-05 – the highest being for rural females at 47 per cent and the lowest for urban males at 17 per cent. NSSO (2010) reported that 38 per cent of children aged 5 years, in rural (42 per cent) and urban (25 per cent) areas have never enrolled in schools.

For further exploration of this, the enrolment as well as drop-out rates are examined. Similar studies have also reported that drop-outs, non-enrolment are among the major causes for low schooling of children (Hightower, 1956; Acharya, 1994; De et al., 2002; Venkatanarayana, 2009).

Figure 5 presents the enrolment of children, by gender for Classes I to VIII.

FIGURE 5
Enrolment Rates by Gender and Classes, 2004-05

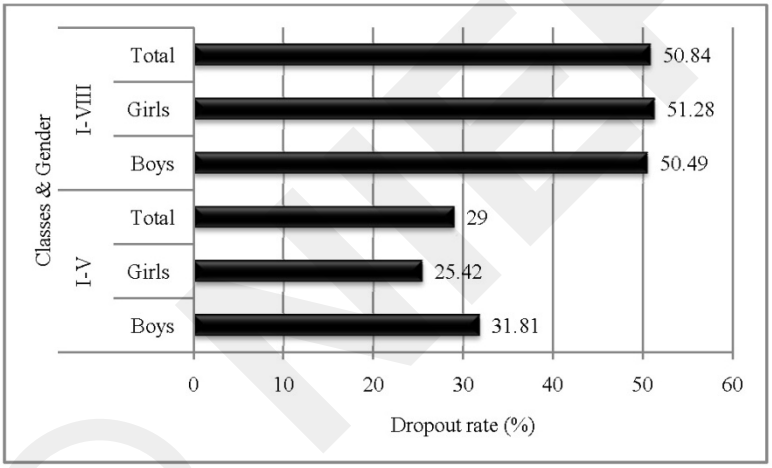


Source: Selected Educational Statistics, 2004-05

Examining the enrolment rates, it can be ascertained from Figure 5, that declining enrolments, more so for higher age groups and classes (VI to VIII), could be one of the contributing factors. For instance, while enrolment remains relatively high for lower classes (I to V), it is not so for higher classes (VI to VIII). Further, the gender disparity is reflected which shows a lower enrolment for girls compared to boys. It is also to be noted that for Classes I to V, enrolment rates are seen to be more than 100 per cent, largely because enrolment in these stages includes under-age and over-age children. This may also be due to skewed reporting of children's school enrolment (Kingdon, 1996).

This decline in enrolment can be ascribed to an increase in drop-out rates at these stages and has been presented in Figure 6.

FIGURE 6
Drop-out Rates by Gender, 2004-05



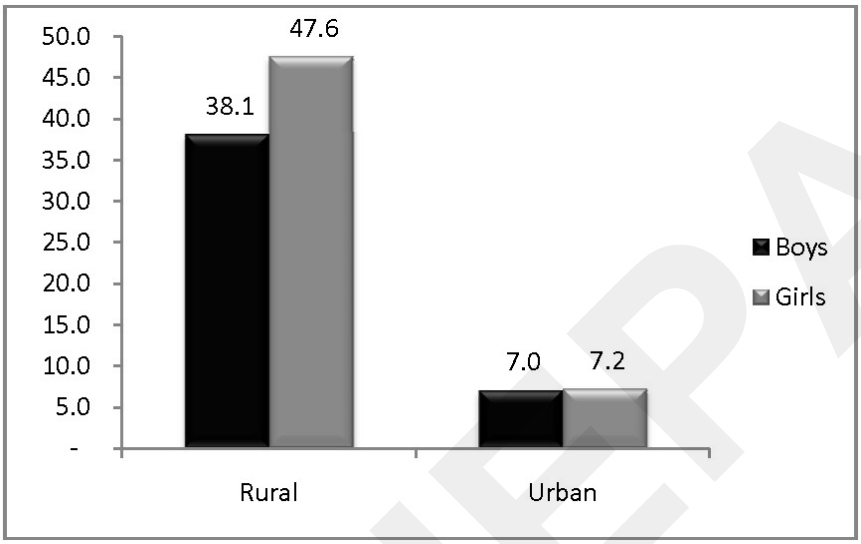
Source: Selected Educational Statistics, 2004-05

As can be seen from Figure 6, higher drop-out rate is evident for Classes I to VIII compared to Classes I to V. Further, gender disparity is also evident as one moves to higher classes – while lower drop-out rates is evident for girls at lower classes, it does not appear to be so for higher classes. It can also be inferred that the rate of girls' dropping out of school is also relatively more than that of boys at the higher classes.

As suggested earlier, the difference in the status of school attendance is not only ascribed to gender but also location. As suggested by Figure 7, children's non-attendance in school is much higher in the rural areas compared to the urban areas. However, as is also evident from the Figure, irrespective of the place of residence, it is obvious that in both the areas, girls constitute a relatively higher proportion of children not attending schools in any capacity.

FIGURE 7

Proportion of Children Currently Not Attending School by Location



Source: As in Table 1

Various studies support such findings that rural residents have lower educational attainment than urban residents (See for instance: Tansel, 2002; Lopez, 2009). Also, the gender difference in non-attendance is much lower in the urban areas compared to the rural areas. Chanana (2000) noted that in urban India, parents have no objection to girls continuing their education as it is considered an investment for their future security which is not the case in the rural areas of the country.

From the preceding discussion, many reasons have been ascribed as the cause of children's school attendance and non-attendance. However, in totality, supporting household income, attending domestic chores and education not being considered as necessary, account for almost 60 per cent of the reasons for children to abandon schooling (60 per cent for girls and 56 per cent for boys). This appears to suggest that one of the major reasons for children's non-attendance or withdrawal from schools is largely economic in nature. (See also: Filmer and Pritchett, 1999; Ushadevi, 2001; Govinda and Bandyopadhyay, 2008).

Therefore, a further clarification of the economic impact on school attendance is undertaken by comparing the variation in children not attending school from high expenditure groups and low expenditure groups. Monthly Per Capita Expenditure (MPCE) is used as a proxy for income. This has been done by classifying the children into five expenditure groups: the first group wherein the average monthly expenditure is less than Rs. 2000, with the second, third and fourth groups comprising households' whose monthly expenditure lies between Rs. 2000-3000, Rs 3000-4000 and Rs. 4000-5500 respectively. Finally, the fifth group covers households' whose expenditure exceeds Rs. 5500. Table 3 illustrates the gender variation of children not going to school in different expenditure groups.

TABLE 3

Proportion of Children Not Going to School in Different Monthly Per Capita Expenditure Groups by Sector and Gender

Per Capita Monthly Expenditure	*Rural*		*Urban*	
	Boys	*Girls*	*Boys*	*Girls*
<Rs. 2000	19.9	27.9	19.7	22.1
Rs. 2000-Rs. 3000	15	21.6	16.1	17.1
Rs. 3000- Rs. 4000	12.3	17.8	11.9	12.6
Rs. 4000-Rs. 5500	9.7	14.2	5.7	7.1
>Rs. 5500	6.7	9.2	2.9	3.7

Source: As in Table 1

It can be seen from the Table above that with the increase in average expenditure, the proportion of children not going to school decreases, irrespective of gender and place of residence. At least eight per cent more girls are seen out-of-school compared to boys in the rural areas where the expenditure of the households is less than Rs. 2000. Similarly, in the urban areas, the proportion of girls not sent to school in the lowest expenditure group exceeds by two per cent that of their male counterparts from the same area. With every increase in the expenditure category, the difference in the proportion of girls and boys sent to school decreases. In the highest expenditure group, i.e., households where the expenditure exceeds Rs. 5500, the difference in the proportion of girls and boys not sent to school is very narrow. The out-of-school girls in fact exceeds out-of-school boys by a little above two percent in the rural areas and by less than one percent in the urban areas.

It can, therefore, be inferred that economic condition of households affects the education of a child. The higher the MPCE (indicating higher income), the lesser is the proportion of children out-of-school and vice-versa.

A point of concern, however, is that even in the highest expenditure group, about nine (four) percent of girls and almost seven (three) percent of boys in the rural (urban) areas are not in school. If economic condition is the only reason for a child not being sent to school, then in the highest expenditure group at least the proportion of children not sent to school should have been negligible. On the contrary, the figures obtained indicate a significant proportion of both boys and girls to be out of school in both the areas, with the proportion being higher in the rural areas compared to that in the urban areas. This implies that besides income, other factors also influence attending of school by children.

It is with this view that in the following section, the econometric estimation of the likelihood of children being sent to school, conditioning on household characteristics, has been carried out.

Econometric Estimates

For the calculation of the contribution of different factors to the current attendance of a child, it is assumed that current attendance status of a child is a phenomenon that is affected by a set of factors that could explain the outcome. Based on these considerations, a binary variable 'y' is defined that takes values

y=1 if a child is currently attending school
y=0 otherwise.

This binary variable is then regressed on a set of explanatory variables that includes various individual and household characteristics. Such a specification of an econometric model has been extensively used in the literature. It is to be noted, however, that since the dependent variable is binary, least squares method to estimate the coefficients cannot be employed. Instead, maximum likelihood estimation technique has been used to calculate the coefficients. The issues involved in specification and estimation of these models are discussed at length in Johnston (1984), Kmenta (1985), Amemia (1985), Johnston and DiNardo (1997), Greene (1997) and Gill (2001).

The probit model (the word probit is a contraction of "probability unit") is one of the statistical models that is used for discrete or binary models. In this study, the probit model is used in order to calculate the marginal contributions of different characteristics/factors on the current attendance status of a child.

A probit model is defined as

$$\text{Prob}\ (y_i = 1) = \Phi\ (X_i, \beta_i) \qquad (1)$$

where Φ is the cumulative density in a standard normal distribution function

X_i are the characteristics

β_i are the coefficients associated with the characteristics, respectively.

Current attendance status of a child is used as a dependent variable. It is a binary variable. It takes value 1 if a child is reported to be attending school and 0 otherwise. This variable is used to regress on the following independent variables.

Female	=	this variable is binary. It takes value 1 if the child is female and zero otherwise.
Female 2	=	this variable is binary. It takes value 1 if the girl child is above 11 to 14 years and zero if she is 5 to 11 years.
Male 2	=	this variable is binary. It takes value 1 if the boy child is above 11 to 14 and zero if he is 5 to 11 years.
Female headed household	=	this variable is binary. It takes value 1 if the household is headed by a female and zero otherwise.
Education of female head	=	this variable is binary. It takes value 1 if the highest educated member in the household is a female and zero otherwise.
Education of Male head	=	this variable is binary. It takes value 1 if the highest educated member in the household is a male and zero otherwise.
Female head working	=	this variable is binary. It takes value 1 if the female head of the household is working and zero otherwise.
Muslim	=	this is binary variable, 1 if household belongs to Muslims and zero otherwise.
Christian	=	this is binary variable, 1 if household belongs to Christians and zero otherwise.
Other religion	=	this is binary variable, 1 if household belongs to religious group other than Hindu, Muslim or Christian and zero otherwise.
ST	=	this is a binary variable taking value 1 if the households belong to the Scheduled Tribe and zero otherwise.
SC	=	this is a binary variable taking value 1 if the households belong to the Scheduled Caste and zero otherwise.

Contd...

OBC	=	this is a binary variable taking value 1 if the households belong to the Other Backward Caste and zero otherwise.
Self-Employed in Non-agriculture	=	this variable is binary, 1 if the household in the rural areas derive their main source of income from self-employment in non-agricultural activities and zero otherwise.
Agricultural Labour	=	this variable is binary, 1 if the household in the rural areas derive their main source of income from agricultural labour and zero otherwise.
Self-Employed in Agriculture	=	this variable is binary, 1 if the household in the rural areas derive their main source of income from self-employment in agricultural activities and zero otherwise.
Self-Employed	=	this variable is binary, 1 if the household in the urban areas derive their main source of income from self-employment and zero otherwise.
Regular Wage or Salaried	=	this variable is binary, 1 if the household in the urban areas derive their main source of income from regular wages or salaries and zero otherwise.
Casual Labour	=	this variable is binary, 1 if the household in the urban areas derive their main source of income from casual labour and zero otherwise.
Rural resident	=	this variable is binary. It takes value 1 if the child is residing in rural areas and zero otherwise.
Female rural resident	=	this variable is binary. It takes value 1 if the child is female and residing in rural areas and zero otherwise.

The reference groups in the estimation are male child for gender of the child, age 11 to 14 years for age of a female and male child respectively, male head for head of households, male head working for work of the head of the household, Hindus for religious group, other social groups for social group, other labour in rural and urban areas for household type and urban residents for place of residence of a child and male rural resident for gender of child at the place of residence. The main result of the probit estimation is presented in table 4.

The results of the estimates show that compared to a boy, the likelihood of a girl attending school is two per cent less. From this it can be deduced that boys' education is given more importance than that of girls. This is further corroborated when age is taken into consideration. The results of the estimates show that the likelihood of school attendance for children starts to decline with age. From the analysis, it can be seen that compared to the higher ages of 11 to 14 years, the likelihood of both boys' and girls' attendance is more at the lower ages of less than 11 years. However, boys of the same age have a two per cent higher likelihood of school attendance than girls even at this lower age of less than 11 years. This indicates the gender disparity that exists even at the lower age group wherein girls are most likely to be kept at home rather than be sent to school.

From the previous discussions (Table 3), it emerges that poverty and low income severely inhibits a child's school attendance. This can be gauged from the positive correlation between the level of living of households and attendance as highlighted by the positive value of the per capita monthly expenditure (MPCE), which is a proxy variable for income. This indicates that higher the income, higher is the likelihood of school attendance and vice-versa. However, it does not figure as a very significant factor in the overall representation.

TABLE 4

Result of the Maximum Likelihood Probit Model for 2004-05

Dependent Variable: Current Attendance of Child in School

Independent Variables	*df/dx*	*z*
Female*	-0.02400	-4.18
Female1*	0.40939	115.65
Male1*	0.42522	120.47
Female headed household*	0.04021	4.94
Education of Female head *	0.38671	72.66
Education of Male head*	0.69595	245.96
Female head working *	-0.5153	-16.36
Muslim*	-0.0571	-12.66
Christian*	0.03073	4.29
Other Religion*	0.01639	2.26
ST*	-0.0634	-10.89
SC*	-0.0229	-4.63
OBC*	-0.0086	-2.25
Self- employed in non-agriculture rural*	-0.0206	-3.84
Self-employed in agriculture rural*	-0.0199	-4.1
Agricultural labour rural*	-0.0568	-8.99
Self-employed urban*	0.02092	1.69
Casual labour urban*	0.00117	0.09
Regular wage or salaried urban*	0.02376	1.89
Rural resident*	0.03726	2.91
Rural resident- female*	-0.0102	-1.57
MPCE	0.00000703	13.39
obs. P	0.58048	

Notes: df/dx are marginal effects, i.e., the change in probability of children working with a one-unit change in the right side variable. z is the test of the underlying coefficient being 0.

Therefore, in order to better understand this phenomenon, the characteristic of the households as well as social and religious factors have been taken into consideration. From the overall analysis, gender and educational attainment of the household head emerges as most significant. With regard to the households, gender of the household head has been sought to examine the impact of school attendance if a household is headed by a female. The results of the estimate show that the likelihood of a child attending school is four per cent more if the household is headed by a female compared to one that is headed by a male. However, if the female head is working, the chances of the child attending school is lower at 51 per cent compared to a household where the male head is working. Further, if a female is the highest educated member of the household, it is likely to translate into a 39 percent chance of the child from that household attending school compared to around 70 per cent if a male is the highest educated member of a household. Mukherjee and Das (2008), in their study, have also shown that parents' education, especially a father's education, has a greater impact on the life of a child in terms of curbing the phenomenon of dropping out from school and/or child labour.

The Indian society is also characterized by various kinds of social and religious segmentation. In such instances, the social and religious characteristics of the households could also influence the school attendance of a child. From the analysis, it can be deduced

that both these characteristics do influence a child's school attendance. With regard to religion, controlling for Hindus, Muslim children have a five per cent lower probability of attending schools. On the other hand, Christian children and those belonging to other religions have a higher probability of school attendance compared to Hindu children. Christian children have the highest likelihood of school attendance at three per cent with children from other religious groups accounting for 1.6 per cent.

Analyzing the results for the various social groups, it can be seen that children belonging to the marginalized groups like the Scheduled Tribes (STs), Scheduled Castes (SCs) and Other Backward Castes (OBCs) have a lower probability of attending school compared to those belonging to other castes. Of these social groups, ST children have the lowest probability of attending school, at less than six per cent, followed by SCs, at two per cent. OBCs, on the other hand, have less than one per cent lower probability of attendance.

Finally, the place of residence also does appear to impact the likelihood of current school attendance. For instance, the likelihood of school attendance will be three per cent more for rural children. However, if the child is a girl, then the likelihood of school attendance is one per cent lower than that of boys. It, thus, appears that in the rural areas, the traditional belief system of not allowing children, especially girls, to attend school still persists, though it appears to have significantly diminished in the urban areas. On the other hand, it could also reflect the lack of infrastructure in such areas that prevents children from attending schools. Thus, it can be inferred that increasing urbanization can be associated with improvement in children's school attendance.

It can also be seen that school attendance is largely influenced by the type of households in the rural and urban areas and their level of living. In the case of rural areas, the results of the estimates show that children coming from households, where the main source of income is from self-employment in agricultural or non-agricultural activities and agricultural labour, have the lowest probability of school attendance (between two to five per cent) compared to those deriving their main source of income from other forms of rural labour. In the case of urban areas, children belonging to households deriving their main source of income from self- employment, casual labour and regular wages or salaries, have all a high probability of attending school compared to those coming from households deriving their income from other sources of work. However, even among them, there is some degree of variation as those from casual labour have less than one percent probability of attending school while it is around two per cent more for the regular wage, salaried and self-employed.

From the econometric analysis, we find that the school attendance of children is influenced by various characteristics. In this analysis, education of the head of the household, especially that of a father or a male member (more than a female member), emerge as the most significant factor. The higher the educational level of a household head, the greater is the likelihood of the child to attend school. Further, other characteristics like the type of employment, which impacts the level of living of households and their income, also appear to have some bearing on the school attendance of children.

Conclusion

Using unit level household data from the NSSO 61st round (2004-05), this paper has sought to examine the determinants of children's school attendance in India. From the analysis, it appears that education of the household head is one of the main factors impacting

school attendance of children. Higher the education of the household head causes a positive spill-over effect wherein it is more likely for children to be sent to school. On the other hand, using MPCE as a proxy for income, it is apparent that poor economic well- being (poverty) of households causes a negative impact on children's school attendance. Expansion in the educational level (such as adult education) and economic well- being (raising income and reduction in poverty) can help in reducing existing differences and sending a child to school. Therefore, improvement in the level of living of households through increased employment opportunities and, hence, income could help mitigate this problem and also be effective in reducing the rural-urban gap in education. This would also have an effect in terms of reducing gender inequalities that persist in education. As can be observed from the preceding discussion, social, cultural and religious beliefs are other factors impeding school attendance of children, especially girls. The study has shown that the incidence of a girl child not attending school is largely due to the fact that education is not considered necessary for them, with priority being accorded to domestic activities over education. Further, the incidence of lower probability of school attendance for children from socially backward and marginalized groups is also evident from the analysis. Hence, the need for redressal of the issue through well-directed policies is warranted. To this end, the efficient implementation of government policies and programmes, specifically aimed at school education, would go a long way in improving children's attendance. While there is no doubt that programmes and policies are in place, however, the deficiencies related to the implementation process are resulting in the continued phenomenon of out-of-school children in India.

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RESEARCH NOTES/COMMUNICATIONS/COMMENTARY

The Communical Politics in Higher Education Research

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Abstract

The central concern of this paper is to examine the conceptual structures, driving interests and value frames and choices that have made possible the research discourse-practices and the production of knowledge in the field of social sciences. The most important question in this context is – Are there any common interests, values, conceptual assumptions and norms governing the entire disciplinary grid in the contemporary social science and educational research in the institutions of higher learning in India. The author argues that opportunistic and private interests, by and large, regulate the day-to-day research practices in academy. Exposure to value-based scientific research would certainly shift the researcher's focus from opportunistic interests to value-based socially relevant scientific research. Further, there is a need to develop programmes, modules and other curricular practices that can offer a holistic picture of the objects of investigation and inculcate the values of social accountability, social ethics and social action.

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Introduction

The existing practices and conditions of social science and educational research in the Indian Universities are very much frustrating and absolutely disconcerting. The fact that research in the higher education institutions has no relevance to our contexts and societies is compelling us to rethink about the official notions, concepts, methods and, most importantly, the disciplinary and institutional research practices in our universities.

Research in our institutions of learning is highly problematic and open to critique. This is because the liberal assumptions about knowledge as universal and normative, and orthodox methods, that deny any possibility of connecting the knowledge produced with our material world, continue to inform much of our research activity. The positivist-pragmatic thinking behind the objectives of our social science and educational research practice has encompassed and imprisoned our actions in disciplinary frames and institutional structures. Further, this thinking has treated Indian experience and its social reality as being deviant in the sense of being historical and static. This dominant framework of thinking is designed to create a class of researchers to complacently reproduce the programmed way of thinking.

Another area of criticism is the composition of institutional clientele, i.e. the academics and students who undertake and engage in research activities either to improve their curriculum vitae or to enhance their qualifications by submitting a dissertation or thesis as part of their M.Phil or Ph.D work. The research, which is, therefore, likely to be undertaken by persons to improve their career is constrained by time and cost. The institutionalization of these characteristics and values has influenced the style of research and the modes of knowledge production, distribution and application.

Majority of the research activities are focused only upon the 'how-to-do-it' tasks of data collection and analysis. They are of the opinion that research is a series of techniques in statistics, testing or context-free observations that are concepts. The focus, relying solely on techniques, procedures and time, cost and distance has produced certain limitations in the conduct of inquiry. And the knowledge generated in higher education research is largely counter-productive and irrelevant to the needs of the practicing teachers, schools and society. Therefore, what we conceive, define, identify, think as research in higher education is open to question.

The above factors have hardly received attention and sustained examination in our academia. But what is most interesting is the fact that, of late, there is a wide disagreement within the scholarly communities about the nature and character of social science and educational inquiry. The emerging debates have brought into question some of the basic assumptions related to social and cultural contexts of inquiry and the human hopes, interests, values by which people have engaged in research. We would err if we do not consider these substantive intellectual reorientations. This paper could be seen as a sincere effort to initiate a dialogue for a critical rethinking on the character and nature of social science and educational research and also the tasks and responsibilities of the teachers and students who are engaged in research. Further, an attempt is made here to explore the possibility of thinking for reconfiguration of our practices and rearticulating of our research agenda.

The central concern of this paper, as enunciated above, is to examine the conceptual structures, driving interests and value frames and choices that have made possible the research discourses-practices and the production of knowledge in the field of social sciences

and education. The most important question in this context is – Are there any common interests, values conceptual assumptions and norms governing the entire disciplinary grid in the contemporary research in the institutions of higher learning in India. My basic contention is that opportunistic and private interests, by and large, regulate the day-to-day research practices in the universities and academy.

Research in universities is essentially a communal enterprise. The so called scientific research practices emerge from a communal context in which certain ways of looking at and certain interpretations are canonized and standardised. Researchers come together to share common interests, beliefs, values and patterns of social conduct. And the competition to grab certain benefits makes them get affiliated with different groups of researchers with whom they feel secure and their interests are protected. Socialization into such groups or communities involves social, cultural, emotional, political and cognitive elements. The dominant models, official structures and established methodologies are considered for formulating the framework of the study. In every scientific community or institution of learning, we find, sometimes, a small group of highly productive and influential scholars or a group of individuals located in some powerful positions in the departments who communicate ideas, norms, rules, regulations, ethical codes and also set priorities for research, recruitment and training. They define and dictate what is a scientific discipline, scientific knowledge and the right way of doing research. It is in the fitness of things to recall the contributions of Thomas S. Kuhn.

According to Kuhn, a scientific discipline is defined sociologically: it is a particular scientific community, united by education (e.g., texts, methods of accreditation), professional interaction and communication (e.g., journals, conventions), as well as similar interests in problems of a certain sort and acceptance of a particular range of possible solutions to such problems. The scientific community, like other communities, defines what is required for membership in the group. (Lyle Zynda, 2004).

These powerful individuals of a scientific community establish personal contacts with supervisors working in other institutions and universities by mutually respecting each other's intellectual standpoints and private interests. The common assumptions, beliefs, values and behaviors are sustained in a variety of forums and conversations.

The members of these groups also organize seminars and symposiums to certify each other's knowledge and actions. Doctoral theses of their students are mutually exchanged for certification and appreciation. Such communities interact in large forums and conferences and mutually appreciate each other's work and also encourage each other to continue their interests and benefits. They mutually exchange invitations, receive each other at airports and railway stations; meet in hotels, restaurants and committee meetings and share their experiences and opinions about their rivals and competitors in the field. Young scholars are inducted into such communities and are trained to participate in the research activities. Over a period of time, they become professionals by learning how-to-do-it tasks, and also mechanically imitating the styles of representation of data, discussion and interpretation of findings. In what follows, I try to map out a few existing practices of research guidance in our institutions of higher learning.

Cursory looks at the way the doctoral theses are supervised, guided and produced make us realize the politics of professional ethics and conduct. According to Thomas S. Kuhn (1962) a *scientific community* cannot practice its trade without some set of *received beliefs*.

1. These beliefs form the foundation of the "educational initiation that prepares and licenses the student for professional practice".
2. The nature of the "rigorous and rigid" preparation helps ensure that the received beliefs exert a "deep hold" on the student's mind.

One can see the implications of these ideas in the following discussion.

Supervisors of doctoral students generally instruct them to confine themselves to certain structure (template) of presentation of the entire thesis. Again within this structure they also prescribe how to present things before the field work itself. For example, what to include in chapter one of the thesis is, by and large, fixed and decided in advance, i.e. before the field work. Instead of training scholars in critical ways of looking at the objects of investigation, reflecting on the field under study and re-looking at the problematic aspects of the issues under consideration, the recognized official supervisors encourage student–researchers to copy from textual material i.e., from printed books, even sometimes without quoting and making references. Since it is very easy to copy rather than presenting the problematic issues of the topic selected for the study, the student and supervisor collectively commit such an offence and silently share the thesis in their communities of researchers for official and institutional certification and authentication.

The other important aspect in such communal activities is the way the methodological procedures are worked out and rationalized in the doctoral thesis. In order to demonstrate the scientificity of the work, the researchers adopt certain techniques of sampling, methods of standardization of tools and statistical data analysis techniques. For example, in order to test whether there is any relationship between the variables, the scholars apply, under the guidance of the supervisor, the statistical tests indiscriminately without looking at what kind of data they are addressing. In order to show the hypotheses testing statistics, they blindly adopt certain tests and share the same with their co-examiners for adjudication and authentication. By using statistics and an impersonal style of writing techniques they try to establish the objectivity of their research work. In other words, by following the rules—that reduce data to statistics and sampling techniques—they believe that objectivity can be achieved in the course of investigation. The other modes of conceptualization and action that are intuitive, descriptive and anecdotal are not considered as scientific and objective procedures.

The discourses of social science and educational research are constructed around such decisions and practices of the researcher. In our institutions, normalizing judgments are embedded within the judgments of the powerful faculty over statements of truth made by doctoral research students. Such judgments of the supervisors rejects false discourses of research which do not comply with the rules for the formation of knowledge, but accept those discourses which do comply as normal and true. Disciplinary discourses in the field of social science and educational research are self-legitimizing through certain practices like seminar discussions, tutorials, conferences, comment on students' work, assessment of portfolios, assignments, course papers, viva-voce and theory examinations, reviewing of research proposals, journals and books. According to the norms of the accepted disciplinary discourses, judgments are made to arrive at truths of the propositions and statements. Through the techniques of observations, normalization and examination, the institutions of learning act as a centre of power for the formation, sustenance and maintenance of the disciplined ways of constructing social realities. These discourses, in turn, govern the

institutional practices and formulate their agenda of action. What is important to understand in this context is: what is the basis on which such discourses of research operate to generate and disseminate so- called scientific knowledge in the field of higher education?

My answer to the above question is that the rigid and narrow disciplinary practitioners of educational research imitate vulgar positivist and Western models of scientific research. What I want to argue here is that the researchers, in order to acquire official recognition, use dominant positivist framework of thought for building rationalities. The commitment to such particular structuralist forms of scientific reasoning reduces the methodological procedures and issues to techniques and tests. As a consequence of this, researchers derive the implications of the study and arrive at generalizations, not on the basis of substantive theory, but primarily by rigidly drawing from statistical tests and sampling techniques. Actually speaking, they act at two different layers of abstraction. *At the super structural level, they speak, by and large, positivism and its language of science and at deep structural level, their actions are guided by opportunistic values and cultural forms of thought*. This rhetorical exercise clearly indicates the opportunistic strategies and actions of the researchers. They neither do honest positivist educational research nor honest anti-positivist educational research, but create a false impression by imitating and mechanically adopting the dominant concepts, methods, categories, and official tests and techniques.

The institutional rituals, and ceremonies conducted by researchers actually obscure the true nature of the objects of investigation. Application of rigorous techniques overshadows the real situations and removes the theoretical dimensions and simplifies the situations and context of the study. The logic of such an exercise is nothing but rhetorical logic, i.e. logic of argumentation. This logic is employed to convince other scholars or someone else that what they are saying is true. Therefore, the thesis of a student is the function of his/her ability to persuade. Truth lies in the ability of persuasion and resides solely in the degree to which an argument convinces. What is interesting to note in this context is that in stating hypothesis, selection of sample, standardization of tools and application of statistical techniques, a number of tests of argument are employed which, while essentially rhetorical, pretend to be formal and scientific. For example, the claim that—*there is a positive relationship/ correlation between children's creative performance in arts and their interests in literature*—is a statement presented in a formal logic style. But the truth of this statement depends crucially upon the ability of the researcher to convince that there are acceptable measurements of the relationship and what is measured is relevant to the relationship.

The other important aspect of this discussion is that one cannot reduce the process of persuasion to just a matter of the quality of the argument itself, but the other rhetorical dimensions added to it by the researcher. For example, the researcher does not communicate with everyone in general but only with selected parts of the potential audience and those selected are those that are receptive to what is to be said. Thus, the educational researchers do not present and communicate their ideas to the public at large but confine them to a narrow group of researchers for acquiring official recognition. It further hinders the search for understanding.

More and more use of the techniques gradually disempowers the researcher and enables him/her to learn less and less about the social realities. Building such rhetorical space around their thesis clearly indicates the opportunistic conduct of the researchers for protecting their *private interests*. All this happens within the medium of the official language that is the accepted language of the disciplines of thought. Any deviation from such pre-

defined institutional arrangements, linguistic conventions and established priorities is considered as unscientific and also, sometimes, as anti-scientific.

Truths are produced through techniques, tests and rhetorical constructions of the discourse of scientific research. Truths constructed in the faculty research may be understood as a system of ordered procedures that are involved in the production, regulation, distribution, circulation and operation of statements of knowledge. And through different images, codes, symbols, words and other linguistic entities, data representation mechanisms and interpretative modes are abstracted and analyzed. Hence, what is important in this context is to radically deconstruct these irrelevant scientific research practices by exploring alternative models and paradigms of scientific research. Such an alternative may be worked out by radically transforming the *value choices* of the researcher. Exposure to value- based research would certainly shift the researchers focus from opportunistic interests to value- based socially relevant scientific research. Further, there is a need to develop programmes, modules and other curricular practices that can offer a holistic picture of the objects of investigation and inculcate the values of social accountability, social ethics and social action.

What has been said above cannot be sustained and strengthened unless a much larger individual and institutional encouragement and involvement comes forth. In this regard, an active collaborative thinking from a wide variety of disciplines is seen as indispensable. In view of this, the need to continue debate on certain specific issues enumerated below on a much larger scale is felt to be desirable.

1. Critiquing the existing institutional practices and discursive formations.
2. Initiating changes in curricular structures at the tertiary level.
3. Inviting and encouraging thought in the direction of pedagogy of each discipline (that is, questions about what/why/how disciplinary/curricular formations emerge and their implications).
4. Opening up researches across disciplines (i.e. social/human sciences).
5. Cultivating thinking with regard to the history and nature (or specificity) of disciplines in Social and Human Sciences.
6. Encouraging rethinking on the question of methodology beyond the narrow confines of empirical/field data procedures
7. Opening alternative modes of thinking and doing research.
8. Working out a programme for explaining necessary and productive dialogue among the discourses of Social Human Sciences and 'hard-core' and technological sciences.
9. Inculcating the values of social and public accountabilities among educational researchers.

It is necessary to meditate on these issues with collaboration and suggestions from many institutions and individual sources.

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Book Reviews

AZAD, Jagdish Lal (2014): ***Evolution of Indian Education from Colonial Stranglehold to Resurgent India: A critical study, in an historical perspective, of the development of Indian education during the period 1813 to 2013***, Gyan Publishing House, New Delhi, pp. 384, (Hardbound).

Education in India can be traced from time immemorial with a long lineage from ancient to modern times. Modern education may, however, be traced from the year 1813 with the Charter Act. Indeed, the Charter Act of 1813 was one of the first guidelines in policy-making for education in India. Modern education is divided into the colonial period and the Independence period. The book traces the roots of modern education in India since 1813 till 2013. The book is divided into two parts, covering the education during the colonial rule and in Independent India in 16 chapters. The focus has been on sectoral development in education which is traced through school education, comprising elementary and secondary education; university education and adult education.

The British rule laid the foundation of modern education but the subject at its core had been the natives of India. The policy of education since 1757 indicates the fact that quite often the perceptions of British officers about Indian society were manifest in their description while also being reflected in policy formulation as well. The introduction of education in India by the British rulers was primarily aimed at inducting low-cost skilled personnel to run the administration. However, there had been some undesirable results even as there was a demand for the education having relevance for the masses as well. Such contrasts can be discerned from the observations of political as well as social reformers and thinkers.

During the colonial era, various persons contributed in shaping the course of education in India. These persons came under three major categories. In the first category were those in favour of modern English education, while the second category advocated mass education while the third rooted for Indian education. The modern English education was favoured by Raja Ram Mohan Roy whereas Gopal Krishan Gokhale crusaded for providing free and compulsory education to students at the primary stage. The third category had supporters like Swami Dayanand, Jamshetji Tata, Pandit Madan Mohan Malaviya, Sir Syed Ahmed Khan, Rabindra Nath Tagore, Mohandas Karamchand Gandhi and Zakir Hussain. In this category, there was no homogeneity in terms of the structure of education as all the thinkers had their own ideologies and beliefs while targeting different levels of education.

It must be noted that the national movement as well as the world wars had a deep impact in shaping the education policy in the country. Apart from such events it was further compounded by the impact of the economic depression and the natural calamities that took place during the same period. These diverse events had a deep impact on the development of education. It was also quite difficult to explain the trend of increasing number of students as well as educational institutions in the country in the midst of such political and economic

instability. The demand for education had increased multifold since its inception till the 20th century thanks to an awareness as well as acceptance of education in society. The changes had been gradual and steady as is evident from the increase in the numbers of students and institutions. There had been a special focus on the education of the girls since 1824 and the adult population from the year 1854 with the Wood's Dispatch.

Issues of access to educational institution and the medium of instruction were detrimental in terms of segregating the social classes. The demand for education kept on increasing till the time of Independence notwithstanding the rise in nationalist sentiments among the masses as mentioned earlier. Teacher training was also a crucial component in the process and was accorded adequate importance in the preparation of teachers. As one traces the financial support provided by the government to education during the colonial period, it becomes evident that while there had been no direct involvement of the government in supporting education, it focused more on the grants-in-aid since the Dispatch of 1854. Such a move was further reinforced by the Dispatch of 1859. The financial responsibility of the centre and states towards education showed divergent trends prior to 1910 when there was no proper mechanism for distribution of funds. However, the creation of the Department of Education in 1910 streamlined the fund transfer as well as distribution of grants for education.

Many issues and challenges witnessed on the education front can be traced from the colonial period to the present time, with the progress of education among different sectors indicating that issues relating to deprived sections as well as the financial support for education still continue. The comparison on the basis of quantitative measures, as cautioned by the author, must not done but the issues and the focus areas in education continue to remain the same. For instance, the goal of education of girls, like adult education and universalization of elementary education, is yet to be achieved. Similarly, the regional disparity continues to remain an area of concern.

In the post-Independence period, the issues relating to the education have been addressed through the Constitutional provisions and the subsequent policy guidelines were based on the recommendations of the education commissions appointed from time to time. Independent India has witnessed only two national policies on education till date-one in 1968 and another in 1986. As it happens, while educational planning is harmonized with the five- year Plans in the country, many of the issues still remain pending in so far as the sectoral achievement of goals are concerned. For instance, while analyzing the status of adult education, it may be pointed out that the goal is far from attainable.

Likewise, in the elementary education sector, the issues cover a wide ambit, from the provision of physical infrastructure to teacher availability. There has been a shift in the focus area from primary to secondary through the Sarva Shiksha Abhiyaan and Rashtriya Madhyamik Shiksha Abhiyaan. At the secondary level, a lot of emphasis has been placed on the implementation of the vocational programme. Yet, there have been an emergence of divergent trends from the ground due to the small scale of operations. Similarly, in the higher education sector, while there has been an expansion of institutions on a rapid scale since Independence, the issues of equity and quality continue to remain elusive.

Two major trends are to be considered while taking into account the education development in the country. These are globalization and public private partnership that have given it a different course. The trends also point out that on the international platform, the ranking of the country ranking is far from desirable. The liberalization policy during the

nineties has opened the education sector to investment from international players. This time span witnessed sizeable funding from the international agencies in the field of education. But with to the change in the economic situation globally in the last decade, there has been an attendant change in the education sector, with the need to make education context-specific.

The journey of education development in the book covers a wide range of issues, from the school to the university level and from the colonial era to the post-Independence period in India. The canvas is too broad in terms of the time span yet the issues are continuing and are broadly categorized sector-wise for analysis. It provides an assessment of the educational events that have been critical in deciding the course of development in the education field. The evolution of the policy and its continuity at various points of time highlights that the diversity of the country has played a significant role in addressing the stipulated demands of the masses. This may be accorded on the basis of different kinds of schools and their respective managements.

The detailed account in the book provides a wealth of information for the researchers on different levels of education in the country-from historical to contemporary periods. The wide range of issues as well as the progress with respect to the students and the institutions provides an insight into the process of educational planning. The historical base sets the roadmap for the approaches adopted from time to time to address the widespread demand for education. Yet the issues to be considered in the contemporary period are related to equity and quality which are critical as they determine the strong foundation of the system. The provision of education quantitatively does not solve the goals of education as it needs to be clubbed with learning at all levels of education. So long as the harmonisation of provision with the outcomes is not achieved, the journey remains incomplete. Thus, the lessons from the past are to be kept in mind as evidences while envisioning a new future even as the policy and practice must be in sync with each other to make it a reality.

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RAHMAN, Shukran Abd., Munir SHAH & Md. Yunus Aida SURAYA (Eds.) (2011): ***Diversity of Higher Education Models,*** Kuala Lumpur: IUM Press, International Islamic University Malaysia & 5 Institut Penyelidikan Pendidikan Tinggi Negara (IPPTN), ISBN 978-967-5272-90-5 (Paperback), Pages: 212, Price: not mentioned.

The contributors to this book are drawn from different countries and have discussed the teaching and learning models of higher education institutions of their countries. Hence, the title of the book "Diversity of Higher Education Models" is really apt.

Globalization and the development of knowledge-based economy have created more demand for higher education the world over. This has culminated in the restructuring of higher education worldwide as globalization and internationalization are reshaping national policies and reforms in the higher education sector. This book gives the reader an insight into the changes that are taking place in higher education in different parts of the world. The book has case studies of Malaysia, Mexico, Ghana and Saudi Arabia.

The first chapter, *Global Research- Intensive Universities* outlines the need for investing in research-intensive universities, which is on the agenda of all major higher education

institutions of the world and also supported by the governments of those countries. One important driver of this trend is the recognition of research, particularly scientific research that leads to innovation and direct economic benefits.

Chapter two, *Policy Development and Globalization of Higher Education: A Case Study of the Research University of Malaysia* examines the factors that contributed to the development of the national higher education policy of setting up Research University in Malaysia and also the impact of this policy on higher education. This case study of a Malaysian Research University only goes to prove that such initiatives were taken by the Malaysian government to develop highly trained knowledge workers to support the knowledge economy. In this chapter, a typology of higher education in Malaysia has been developed that categorizes four distinct periods. The emergence of Research Universities coincides with the last phase, which is witnessing the growing evidence of responsiveness to globalization and the pressure from worldwide university rankings that only top research universities occupy. The discrepancy between the promise and reality is also pointed out as well as the reasons for the same.

In Chapter three, *Diversity of Higher Education Models: And Implications for the South*, the important role of higher education in today's knowledge-driven society has been reiterated. Further, the diversity of higher education models in the era of globalization has been highlighted. A historical overview of higher education has been traced from the earliest times to the present day, using a typology of four universities that served as role models for other major universities of the world, namely Universities of Paris (established in the 12th century), Halle (established in the 17th century), Berlin (established in the 19th century) and Phoenix (established in the 20th century), with the four models being examined. The mission of the University of Paris was to serve the Church (research in theology). The University of Halle, rather than preparing people for serving the Church, was established with the mission to prepare people to serve the nation state (research in humanities and science). The University of Berlin was envisioned to be a research university (research in scientific enquiry and nationalism). Lastly, the University of Phoenix was a revolutionary shift from nationalism, rationalism and research to represent the new economic order i.e. capitalism and economic globalization (research in education as market-driven).

Chapter four, *King Abdulaziz University's Unique Collaborative Approach for Online Undergraduate Degrees*, is a case study of King Abdulaziz University (KAU), located at Jeddah in Saudi Arabia, showcasing its collaborative approach for online programmes.KAU is a leader in using ICT in higher education in the kingdom. Since this e-learning is still in its infancy, only a limited number of students has enrolled in these programmes. While evaluating the e-learning programme, it was found that online and face-to-face learners' performances were similar. In fact in some cases, the online learners outperformed their face-to-face counterparts.

The immersion-oriented teaching learning pedagogy that supports both academic and industry readiness has been discussed in Chapter five (*The Berjaya Immersion Methodology: An Alternative Model of Learning in Higher Education*), which outlines the case of Berjaya University College of Hospitality of Malaysia. This particular approach has been adopted with the objective of nurturing academic, practical and employable skills among the students of Hospitality Studies. Undoubtedly the link between education and industry is crucial for the development of employability in the graduates as it provides hands- on industry experience with a realistic view of responsibilities likely to be encountered after

employment. The concept of immersion methodology is to immerse the students into the hospitality environment from the moment they step into the campus. The Berjaya immersion methodology has the following core values namely: industry readiness, student-centred learning, research-informed teaching, generic skills and complementary curriculum.

The next chapter (Chapter six) *Values 101: Reorienting the Cultural Domain of Higher Education*, focuses on embedding values and service in higher education. The principles outlined in Eric Plasker's *The 100 year Life Style*, that maintain quality of life: health, purpose, joy and resilience, as a part of a healthy future-oriented lifestyle, holds true for institutions as well as institutions are, after all, simply groups of people organized around an idea with a purpose. Globalization has brought another dimension to this reflection as all institutions are social expressions of our values. In this context, institutions need to reinvent values that represent the dominant economic value system of a secular Western model.

Chapter seven, *Liberalization, Quality and Profit: Tensions in Cross Border Delivery of Education* focuses on the emerging models of cross border higher education, mostly private in nature, that primarily involve student or faculty mobility, distance education models, curricular joint ventures, twinning, or institutional affiliations. The public sector still dominates education in most countries. However, there is a growing private sector in education that has emerged as a result of liberalization and is operating across nations in the international higher education realm. The key point made is that cross border institutions are reconstructing the norms, and the various agencies invested with assuring quality are working at cross purposes that cause quality assurance tensions in cross border higher education-an intersection of multiple regulatory systems.

Chapter eight, *Bangladesh Higher Education: Current Trends, Future Prospects and the Need for an Alternative Model*, reflects on the existing problems in higher education in Bangladesh and proposes a model that takes into account the current scenario. Poor management and poor funding of universities are at the root of the problems. The various attempts made to address the problems have been outlined and an alternative model of higher education has been proposed, providing an overarching vision and philosophy through the adoption of the UGC-WB Strategic Plan.

In Chapter nine, *The Comparability as a strategy for Building a Common Space of Quality in Higher Institution from Mexican Universities Consortium CUMEX and UASLP,* there is a detailed description of CUMEX which is the Spanish acronym for the Mexican Consortium of Universities. The flexibility and mobility that CUMEX has brought about in Mexican higher education has been discussed with the help of case studies. This chapter ends abruptly as if the last pages were missing.

Chapter ten, *Diversity in Ghanaian Higher Education: Perspectives from the University of Cape Coast, Ghana,* is a case study of the University of Cape Coast showcasing the facilities provided for the differently-abled, provision for continuing professional development through mature-studentship opportunities and meet the needs of diverse categories of students and employees. The diversity of models presented in the chapter only goes to prove that one- size programme mode of delivery does not fit all. There has to be alternative modes such as distance education in order to reach out to people with different needs.

Chapter eleven, *Diversity of Higher Education Models: Conclusion*, summarizes the entire book of case studies from different parts of the world. Diversity of models of higher education have emerged in response to the changes in economy, environment, social needs, lifestyles' technologies that have impacted higher education. Diversity of the models has

allowed greater access in higher education. Widening of classroom borders through programmes conducted online and through open and distance mode.

The editors and the authors deserve recognition for bringing together so many diverse practical and theoretical considerations and blending them together. However, there is no pattern and coherence noticed in their selection of cases. Nevertheless, this book is a valuable addition to the existing literature on higher education. It must be read by all those involved in teaching and learning in higher education today.

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JENA, Vandana Kumari and, A. MATHEW (eds.); (2008): ***Leading the Way — New Initiatives in Adult Education***, Directorate of Adult Education, Government of India, New Delhi, Hard Cover, Pages: 313, Price: not mentioned.

Education equips an individual to face the disadvantageous phases of life while steering the person in the right direction. Learning is not merely memorising bookish information, but it extends to acquiring constructive abilities and skills that have an empowering role while going beyond basic literacy. The traditional view of education is that it is a process of learning in childhood and youth, which prepares a person for life as an adult. But in today's connotation, as accepted generally, education has emerged as one of the most significant tools of human development that plays a vital role in promoting personal happiness and well-being, having distinct social ramifications as well. Hailed as the largest democracy in the world, India is at the same time saddled with the dubious distinction of having the largest population of illiterates. In order to remove the stigma of illiteracy, the Government of India has implemented the far-reaching and challenging initiative of National Literacy Mission (NLM). The Adult Education Programme, Continuing Education Programme as well as the present day Right to Education Act and Sakshar Bharat Mission are among the other initiatives that form part of a similar agenda.

The volume publishes the innovations and best practices of a number of initiatives that form part of the agenda, that is well discussed in four sections. They include the role of State Resource Centres as well as the other initiatives taken such as the role of ICT for Literacy with its aim of promoting literacy among the illiterates, who number over 100 million. The final section focuses on the Monitoring and Evaluation Practise under the National Literacy Mission. The entire publication reflects the personal experiences of the authors, who are mostly Administrators, in the implementation of innovative practices that form part of the literacy learning campaign process.

The first section features, in a nutshell, the articles on TLC and other modes of the basic literacy programme, covering the initiatives of the District Magistrates/Collectors in implementing the programme, in different regions of India. It highlights the great efforts of TLC, as recollected by DMs/Collectors, in promoting higher enrolment, as part of a people's movement having its own sanctity with features like transparency, public accountability and reliability, as manifest in the functioning of Zilla Sakshartha Samiti's (ZSS). This section

publishes the intense efforts of TLC in such district, which despite of facing a difficult life owing to poverty and Naxalite violence, have recorded to diminish the rates of neo-literates, providing the successful individuals with the opportunity of employment. Group approaches were also adopted in pursuit of a similar agenda in places where area-based approaches was in vogue. TLC has, indeed, reached out to the underprivileged pastoral nomadic tribal group in its efforts to remove illiteracy.

Section II shows the District innovations in accessing literacy and continuing education by community involvement and household surveys to identify their learning interests on which certain programmes were designed. Such effort enlarges the desire of the rural population to be stakeholders rather than mere spectators as portrayed in this section. The initiatives taken to introduce literacy among communities, which remained outside the pale of development, is also detailed in this section. The articles of this section also contribute in the conceptualisation of WG CE as people's programme. It describes the planning used for sensitizing and orienting the community for prioritizing the development agendas. The section also contains the preparation and implementation of short-duration TLC-like projects while simultaneously indicating the better exposure that the learners have received.

The present section (Section III) details the innovations in literacy and CE programmes and about States conceptualising CE scheme as a people's programme that is jointly implemented by government and people in partnership. It contains articles viewing the innovative techniques adopted to implement the literacy mission in different states. A feature highlighted herein is that the State adopted approaches according to the profile and need of the target group. Mention has been made of keeping records of book reading by tribals as well as people with low literacy. This was something that was unimaginable at the initial stage. The section also deals with enlisting the involvement of political and government leadership from state to village level. In addition to these, the section is dedicated to the involvement of ZSS in the success of the Accelerated Female Literacy Programme in different states.

The fourth section projects the initiatives of JSS in three articles. It describes the scheme as well as its work. The initiatives of one JSS considered are in accordance with the needs of the local market and demands of industry for the youth, neo-literates and those with low levels of education belonging to the slums and re-settlement colonies. Another JSS initiative extends opportunities in market linkages and marketing the products of JSS trainees. The article also publishes the involvement of JSS in multi-faceted agendas of a collaborative nature that has been regarded as its central facet by the author. The section explores how JSS, through its adoption of new avenues and economy trades, have upgraded the skills of the underprivileged sections and enhanced their capacity for better productive output.

The particular section, through its two articles, describes the role of State Resource Centres in the areas of Health Education and Campaign against Female Foeticide. The article surveys the efforts of SRCs on health aspects that are relevant and specific to the state's specific context. SRC's initiative is also focused on campaign against female foeticide while integrating it with the Post Literacy and Continuing Education programme in the State. The article also publishes SRC's initiative in modelling the dalits to become activists and powerful advocates of social reform. The author here is optimistic about the future involvement of SRC in improving the fields of Literacy and Health and, in the process, pointing towards a better quality of life of the people.

Literacy learning is supplemented with the use of computers along with other methods of communication. The present section (Other Initiatives: Role of ICT for Literacy) provides an overview of SRC's initiatives and ICT-based functioning literacy based programmes tried out in different states and in different languages. It showcases the role of ICT in imparting adult education in India. The author considers ICT to be the most efficient tool which has restricted the marginalised and unreached population to remain out of the march of progress.

The present section is spaced for conveying the monitoring and evaluation practices under the National Literacy Mission. With regard to evaluation, the article also carries the recommendations of different expert groups for ensuring transparency and social accountability of its programmes as well as scientific and reliable picture of implementation and outcome of the programmes. The article highlights the emergence of external evaluation at the national level as per the recommendation of Expert Group. It focuses on the procedure of evaluation as well as the supplementary initiatives provided to the evaluating agencies for facilitating their better performance.

The present edited volume is a combination of remarkably inspiring efforts and mentionable outcomes of the innovative practises with regard to the Indian Literacy initiative, spread across the maximum number of districts or States and institutions funded by the NLM like State Resource Centres and Jan Shikshan Sansthans.The volume enlightens the issues by conveying the experiences and achievements of the authors in the process of enhancing literacy learning. This book is essential for policy-planners at the national and state levels and literacy leadership and organisers at the district level and below. Moreover it attains a new milestone in terms of knowledge and interest among practitioners and scholars as well.

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NAGARAJU, Gundemeda (2014): ***Education and Hegemony: Social Construction of Knowledge in India in the Era of Globalization***, Cambridge Scholars Publishing, UK, ISBN: 978-1-4438-5970-7 (Hard cover), Pages: 192, Price: not mentioned

Yayathi is a character in Indian mythology. He demanded youth from his youngest son, Puru, to overcome his aging. A large number of middle class Indian parents are successors of Yayathi as they educate their children to get a job in an overseas nation, so that their declining economic productivity can be compensated. Additional income can help the aged to prevent insecurity to a great extent and, thereby, at least, abstain from a feeling of early aging! The overseas nations, to which youth is exported, include USA, Europe and Middle East nations. Due to strict emigration policies of these nations during the 1950s, opportunities were accessible for only aristocrats and highly meritorious in the society.

The modification of emigration laws in USA in 1965 paved the way for a large number of Indian professionals to migrate to USA. Most of them visited for higher studies, research and looking for better life opportunities. It would not be an exaggeration to say that onset of IT

revolution in USA during 1980's was mainly propped up by the migrated population, in which Indian professionals played a pivotal role. This was true in the case of some of the European countries also. Consequently, the demand for IT professionals in India scaled up tremendously. The technical skills and ability to use English for communication by the educated workforce in India were of added advantage to Indian youths in the global market. Due to the fast-growing IT sector, companies were forced to absorb any kind of engineering graduates as they could be trained in accordance with the needs. Outsourcing of IT - related jobs give added impetus to the demand for IT professionals in India. Thus, an engineering degree has become decisive for both migration as well as for obtaining a coveted IT job in India.

It may not be a coincidence that structural reforms of the government of India were implemented in 1991. These structural reforms were characterised by economic Liberalisation, Privatisation and Globalisation (LPG) and, of course, it spilled over to other related sectors, including education. Structural reforms lifted many hurdles for the foreign investors to invest in India. As a result, there was a boom in the IT sector, with outsourcing reaching its pinnacle.

IT industry in India logged exponential growth during the 1990s. IT professionals enjoyed high pay and lucrative life. Indian parents and youths had an obsession for the IT profession and industry. Attracting maximum investment in the IT sector has been projected as a great achievement by rulers. Several States like Andhra Pradesh, Karnataka, Tamil Nadu etc, vied with each other for promoting IT investments in them. Realising that availability of human resource is an important aspect of investment; the state governments liberalized their policies for starting new engineering colleges in the private sector. Thus, the shift in demand from Conventional courses to engineering courses has a palpable connection with the growth of IT industry abroad and structural reforms in India. This is the context wherein Nagaraju Gundumeda attempts to conceptualize IT education in India in the backdrop of globalization.

The book is an offshoot of a research carried out by Nagaraju Gundameda which focuses on examining the relationship between social background and access to IT education. There is a very specific attempt on the part of the author to look into the growing demand for engineering courses in India and its inter-linkages with the national and global economies. The study also makes an indepth examination of the manner in which Andhra Pradesh, one of the prominent competitors in promoting IT Industry in India, fetishized IT education and its impact on the marginalized sections of society in that state. It is quite interesting to note that the author draws resources from the Marxist tradition to explore the crossroads of state and national policies in shaping education in the context of LPG. In addition to the Marxist view of the issues, the author undertakes an empirical study on the accessibility of IT education for the different social groups in Andhra.

In order to answer the question of accessibility to IT education of students belonging to different caste backgrounds, social classes, places of origin, gender and educational and professional backgrounds, the author conducted a survey, with the sample comprising 240 students pursuing IT courses. The data for the qualitative study is collected from government reports on the growth and development of IT industry in Andhra Pradesh, in depth personal interviews with the students to assess their personal profile and attitude towards IT education as well as focus group interviews to collect data on how students

collectively perceive their prospects in IT education. The students' experiences with their training staff and peer group during the course also were explored during the interviews.

The book is divided into five chapters. The first chapter mainly presents a theoretical framework in which the study is dovetailed. This chapter provides insights into the impacts of LPG on the social system and its spillover effects on education, in general, and IT education, in particular. For this purpose, the author uses a plethora of authentic studies conducted in the field to substantiate his arguments in a very systematic way.

The chapter two examines the linkage between the political economy of LPG, on the one hand, and the domestication of LPG in India with special reference to Andhra Pradesh, on the other. The regional imbalance, palpable in the access to IT education in India, is exposed through this chapter. The case is no different in Andhra Pradesh. The chapter lays the question of equity wide open in IT education, wherein a large segment of the rural youth population is denied the opportunity to access education from far-off lucrative urban cities.

Chapter three presents an alarming situation in the IT education with the help of the findings of the empirical study. It reveals that caste background, social class, socio- economic background and social capital play an important role in accessing IT education. IT education is positively skewed to two groups, one is urban middle class and the other is upper caste students. The study exposes the distressing situation of IT education in terms of its poor accommodation for those belonging to the Scheduled Castes and Scheduled Tribes. The findings are daunting and necessitate immediate attention of social scientists and policy-makers.

Chapter four shows the relationship between the forms of capital and patterns of access to IT education by examining the nature of relationship between the social background variables selected for the study and the degree of access to IT education. This chapter gives a systemic analysis by blending the empirical results of the study with the theoretical framework of forms of capital and access to educational opportunities. Chapter five gives a brief summary along with conclusions drawn from the study. The chapter includes recommendations and implications not elaborated and detailed though.

While going through the book, there is a possibility of questions being raised on the methodology (both quantitative and qualitative) applied for collection and analysis of data. Precise definitions about variables used for the empirical study would have enhanced the clarity of the book. The title of the book indicates an explicit connection between Education and Hegemony. While the book categorically shows how certain groups are deprived of IT education, it would have been desirable if more space had been earmarked for exploring how IT education explicitly establishes power structure and hegemony in the process, by drawing from thinkers like Gramsci, Althuser, Lazer, Freire and Frankfort. Beyond all these, it is important to listen to the author on what he is trying to communicate. The concern shared by the author is seminal and deserves the immediate attention of researchers and policy-makers. The book shows the investment of IT education not only in perpetuating inequality but also deepening it. Nagaraju Gundamed's caution must be heeded very urgently by policy-makers.

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Asian Development Bank (2014): ***Innovative Asia: Advancing the Knowledge-Based Economy – The Next Policy Agenda,*** Manila: Asian Development Bank, Pages: 86 (paperback) ISBN: 978-92-9254-651-9

Ever since the World Bank's study on *Building Knowledge Economies* (2007, Washington DC), several countries – developing as well as developed – have resolved to transform their respective economies into knowledge-based economies (KBE), or simply knowledge economies, and adopted various strategies in this regard. The Knowledge Economy Index (KEI), prepared by the World Bank, also came quite handy for many in this task. The index includes 12 key indicators grouped under four 'pillars', viz., (i) economic incentive and institutional regime that includes tariff and non-tariff barriers, regulatory quality, and rule of law; (ii) education and skills of population that covers adult literacy rates, gross secondary enrolment rate, and gross tertiary enrolment rate; (iii) innovation and technological adoption system, that takes into account royalty payments and receipts ($ per person), technical journal articles per million people and patents granted to nationals by the US Patent and Trademark Office per million people, and (iv) information and communication technology (ICT) infrastructure, measured in terms of telephones, computers and internet users per thousand people. The present report by the Asian Development Bank gives the knowledge economy index scores and also scores for sub-indexes for a good number of countries in Asia and the Pacific region. According to the overall index, Taipei, Hong Kong, Japan, Singapore and South Korea rank high among the countries of the region, while Myanmar, Bangladesh, Nepal, Cambodia, Lao figure at the bottom. On the whole, the average of the Asia and the Pacific is only 4.39 compared to the OECD average of 8.25. Only Taipei, Hong Kong, Japan and Singapore cross the OECD average.

Among the four, the education and skills pillar may be considered very important. It is necessary to note that quality of higher education institutions, particularly science and research institutions is important. Interestingly, the quality of science and research institutions, the quality of the overall education system and university-industry collaboration in research – all move together. With regard to all the three, countries like Hong Kong and Singapore figure at the top, India, Pakistan and Kazakhstan figure at the other end. Many developing countries in the region have to increase enrolment rates in tertiary education and also rates of access to technical and vocational education and training and skills development; and promote diversified education systems. The country experiences reveal that countries have to invest in science and technology talent development and in establishing world-class universities and centres of excellence in research and development. Japan and Singapore produce large numbers of scientists and engineers. Japan is far ahead of USA in the number of resident patents granted in 2012. Lastly, ICT plays a very important role: there is a strong correlation between GDP per capita and ICT; and also between GDP per capita and network readiness index. Global competitiveness index and ICT development index are also strongly correlated.

The analytical study of the Asian Development Bank draws a few important lessons from advanced countries of the region and outside in transforming the economies into knowledge economies. After all, only those economies succeeded in their efforts when they had committed to a broad based strategy across the KEI pillars and focused their attention with a sense of urgency. As the evidence from Korea suggests, spending on research and development is a crucial measure for improving international competiveness in high-skill

intensive products. South Korea increased its R&D spending from about two per cent of GNP at the turn of century to above 4.5 per cent in 2014. Finland and Japan spend high proportions. Second, greater investment in innovation, education and training, advanced ICT infrastructure and applications and logistics is essential to move up the ladder. Third, governments have to play a strong role in steering and supporting various elements required for development of knowledge-based economies. Fourth, not only the governments but also private sector must commit higher levels of investments for education and training, more specifically in advanced areas of technology. Lastly, two sets of policies are required: one, policies that remove constraints to innovations and entrepreneurship, cumbersome regulations and corruption, and the second, policies that commit investments in KBE-enabling infrastructure, assets and programmes over a clear and predictable medium-to-long term horizon. The rapid technological catch-up achieved by Japan, South Korea, Singapore, and Taipei is indeed impressive.

Based on rich data and also drawing from robust secondary research evidence, the report under review presents a very useful analytical account of the problem, a long array of tables and graphs, and also sketches a few valuable lessons for developing countries in the region. Outlining the possible roadmap, the Asian Development Bank argues for seizing the opportunity by the developing economies for the development of the knowledge-based economy; the countries have to develop strong and solid foundation; at the same time they have to promote an inclusive approach to knowledge-based development of the economies; they have to recognize the dominant role of services in knowledge-based economies; and they have to pursue knowledge-based strategies in creative industries. While these prescriptions are general and common, it is also important to recognize, at the same time, the unique strengths and advantages (and shortcomings as well) of the region and the specific countries in developing country-specific strategy plans.

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