

The cost of instruction, the value of education

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‘A cynic is a man who knows the price of everything but the value of nothing.’

– Oscar Wilde

‘Receive my instruction, and not silver; and knowledge rather than choice gold.’

– Proverbs 8:10, *King James Bible*

‘For wisdom is better than rubies; and all the things that may be desired are not to be compared to it.’

– Proverbs 8:11, *King James Bible*

‘I wisdom dwell with prudence, and find out knowledge of witty inventions.’

– Proverbs 8:12, *King James Bible*

Cost, price, worth, value – we all know that these have similar but distinct connotations. Oscar Wilde dismissed as a cynic, anyone who could estimate the price but not the value. The global financial meltdown has been wrought by several clever people who thought they knew how to make these distinctions.

The same is true of instruction, training, education, knowledge, wisdom, etc. We tend to confuse these issues. Nearly 3000 years ago, Solomon knew that instruction, knowledge and wisdom could not be compared to silver, gold or rubies, and in this way, set up the hierarchy as well as the thermodynamic equations, i.e. it is easier to convert knowledge to gold than gold to knowledge. Yet we have not learnt from such teachers. Thus, India has a large number of engineering teaching shops that give instruction to prepare young people for the IT mill (about 500,000 IT professionals a year), but few to create new knowledge or wisdom, or witty inventions in these areas (about 50 Ph Ds in IT a year).

At a meeting convened in Kochi many years ago on the use of modern technologies in distance education, I compiled the following laundry list of costs associated with various levels of education and training (Table 1). Most of these figures

are snatched out of my memory and I am willing to be corrected on their accuracy.

Harvard spends 7000 times what IGNOU does to train/educate a pupil at university level. While IGNOU actually prices itself to cover costs, in the case of Harvard, my guess is that the price is only a third or less of the figure shown in Table 1. My brief experience at the Cochin University of Science and Technology (CUSAT) taught me that if it had a budget allocation of Rs 150 crores a year (at current prices) for 60 years instead of Rs 30 crores a year, it could have given the IITs a run for their money.

India does a poor job of educating its masses. Only about 10% of those in the age group 18–23 make it to college. There are countries which manage 80–90%. The Knowledge Commission projects that to raise the Gross Enrolment Ratio from 10% to 15%, we will need about 1500 universities, instead of the 450 or so we have now. The nation does not seem to have the will to make these commitments.

Let us get back to the thermodynamic insights first put forward by Solomon. India does an even poorer job of converting gold to knowledge. On a per capita basis, its output of papers (knowledge) or patents (witty inventions) is abysmal. It is as poor as its track record in the Human Development Index, or its FIFA ranking. Its current FIFA ranking of 149 (11 March 2009 – <http://www.fifa.com/associations/association=ind/ranking/gender=m/index.html>) is lower than that of Suriname (131 on 11 March 2009). Suriname has a population of less than half a million and its male population of football playing age (roughly 80,000 between 15 and 40) can probably be packed into a large stadium. It is also worthwhile remembering that the largest ethnic group in Suriname is classified as ‘Hindustani’, or known locally as ‘East Indians’, their ancestors having emigrated from northern India in the latter part of the 19th century (*CIA Factbook*). This

can only mean that the billion East Indians who remained behind in India have not made a sincere effort in any of these areas, education, research or sport.

My stint at a job in the academic sector (CUSAT) was an eye-opener, making me consider things I would not have otherwise done. I found, for example, that India is the biggest buyer of gold in the world, nearly Rs 88,000 crores of the yellow metal in a year at that time (circa 2009). With this, we could have educated 410 million people a year through IGNOU, or built 88 IITs a year, or 880 medical colleges or 3000 engineering colleges in a year. Alternatively, if judiciously spent on academic research, we could have published between 80,000 and 160,000 *SCI* papers in a year, making us the second largest scientific super-power in the world, after the US and ahead of China.

At whatever cost or price, we value gold much more than we value education. And that has told on the quality of our life.

‘The rich are different from you and me.’

– F. Scott Fitzgerald

‘Yes, they have more money.’

– Ernest Hemingway

In a discussion comparing the conditions for doing science in India and in the United States¹, the assertion is made that ‘there is an excellent reason why students from around the world head to USA to do science’. But the reason is not therein explicitly stated. The answer is neatly summed up by the exchange between Scott Fitzgerald and Hemingway quoted above. No country in the history of civilization has followed Solomon’s advice of converting gold to knowledge more assiduously than the US. The number of full-time equivalent researchers (FTE) in the US is estimated to be about ten times that in India. Indeed, it is feared that the number of Indians counted amongst the US FTEs is larger than that remaining behind in India. An intended, or unintended, the consequence of this has been that the US has become the most powerful country in the world.

1. Ramaswami, M., *Curr. Sci.*, 2009, **96**, 639–640.

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Table 1. Costs associated with education training

Harvard education – budget of US\$ 6b for 20,000 students: Rs 150 lakhs/student/year
NRI studying abroad: Rs 20 lakhs/student/year
IIT education: Rs 3 lakhs/student/year
CUSAT education – budget of Rs 30 crores for 6000 students: Rs 0.5 lakhs/student/year
UGC Arts and Science college education: Rs 0.12 lakhs/student/year
IGNOU distance education – Rs 450 crores for 2.1 million students: Rs 0.021 lakhs/student/year