

## Higher education in a catatonic state?

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Outcomes research is a major effort in medical practice to match the treatment with disease. Education is one area that could eminently do with outcomes research. However, even the most rudimentary considerations do not seem to have percolated to the level of teachers in universities, since research in higher education and educational psychology are virtually non-existent, and hence this note is more as a plea. The university establishments are as confused as the Government in mixing up mass education with mass higher education!

Long ago, Ashley Cooper commented about orthopaedic patients that 'the inside of bones is not filled with red marrow but black ingratitude', since the outcome often was unsatisfactory, especially in those days, in the way the bones set. Many teachers, particularly the contributory teachers in teaching programmes, are often driven to similar despair. How true is it that there exists a segment of students that cannot be taught? Surprisingly little information is available in higher education.

Part of the reason for our ignorance stems from the fact that to declare a student as a non-learner is politically incorrect and tremendously so. In any public meeting or policy meeting, the powers that be must wax eloquent with mindless mix of metaphors . . . about bright young minds, bubbling with enthusiasm, who are sponges that absorb knowledge and reflect creative minds and spirits; they being the future of India (or whatever). Some of them even believe in this. Privately, when I talk with the faculty around, it appears that not more than 10–15% of the students we have, should really have entered the university portals<sup>1</sup>. I know of departments where the faculty speak enthusiastically about one bright student that actually studied there 3–4 years ago. There are also occasional teachers (and scientists) who are confident about how gifted they are in motivating students, as opposed to the rest (of the faculty).

The question is not so much as to whether we have non-learning students, but rather . . . to define and discover what constitutes a non-learner and to define whether the phenomenon of non-learning

is endemic, epidemic or pandemic. The origin, evolution and manifestation of a non-learner should occupy the centre stage in modern educational scene for a scientific reason. If these represent the bulk of teaching targets, what can be done to improve the lot . . . not just the students, but more importantly, of teachers and institutions? The purpose of science is to explain to the most common and not the most rare.

### Is statistics useful?

There is a common illusion among teachers that if the syllabus is delivered, it results in marks in a Gaussian manner . . . some good, some not bad, the rest tailenders. In reality, it depends on the nature of the test, which the teacher continuously adjusts in search of this Gaussian curve. Typically, tougher the expectations, more skewed with a tail to the right is the response. A populist ranking may give a somewhat normal looking distribution. It is more a normalization rather than being normal in any sense of the word. If all universities were to get five-star rating from NAAC, it represents yet another distribution that speaks for itself.

The marks of biotechnology students, analysed over a decade, were published earlier in this journal<sup>2</sup>. The current observations reflect the concerns since then. Marks, like poverty/riches, do not simply indicate numbers. These also summarize effectively various attitudes.

### Evolution of a non-learner

Non-learners appear to be a carefully sculpted product of a caring community. He/she is, as often as not, a product of care and not of neglect. At every stage as the child falters, caring elders carefully give support to sustain the errors so as not to spoil the psychology of the youngster.

I had the occasion to observe first hand and analyse gradual deterioration of student quality over the last several years in biotechnology<sup>2</sup>. In the initial days nearly every student passed the CSIR–UGC exam. More than 50% students could handle the entire syllabus as we had hoped.

Then the scene crashed. The IT bandwagon removed most aspirants. The BT bandwagon that followed led to proliferation of programmes from the original six universities to over 2–3 dozen. The best students we had were those with physics and chemistry background. Now most come with a biology background, some now even with a biotechnology background. The consequences to the quality of the teaching programme are terrible. Table 1 summarizes some of the observations over the years, all which could be handled when a major subgroup had high rankers, as opposed to the current situation where majority are low rankers.

### Non-learners. Is the process autocatalytic?

The greatest fear is not about a particular mind that failed. The fear is about the collective failure that stops the society in its tracks. If the non-learners become teachers, as many have, the process accelerates and there is no way to tell where the bottom line is.

It is a general suspicion that we have already reached this by completing more than one cycle. More and more students tell us about the total desolation that grips the classroom, where mediocrity rules. What is not clear is whether it is a level-off or a dive. Is the phenomenon specific to colleges or are the schools also affected? It appears that the saving grace for schools is that the teachers have some training in a pedagogic process called a B Ed. College and university teachers mostly have no formal training even in routine matters<sup>3</sup>. We are shocked to find instances where the departments have forbidden students' requests to do additional practicals on the basis that these are not in the syllabus!

It was often stated that the purpose of university teaching is to provide college teachers<sup>1</sup>. It was equally often stated that one may not be a good researcher, but one may be a good teacher. The sum total of the apologia is that we have universities filled with unattested 'good' training teachers, who have no way to be 'learners' and can only be 'good' teachers.

**Table 1.** Some attitudinal differences in students

Parameter	High rank*	Low rank**
Comprehension in physical and abstract ideas	Reasonable	Strictly avoided
Commitment to programme	Acceptable	Marginal to absent
Assignments	Interested? Not critical, but will perform.	Disinterested. Not critical but others may do and we can copy
Absenteeism	Low	High
General reading	Acceptable to low	Very low
Choice of optional subjects	Primarily by marks; a few choose based on interest	Primarily by scores possible
Attitudes to marks	Very important	Very important, but without effort
Class conduct	Can be enthused	Refractory
M Sc as a degree	Necessary, but not important	Necessary, but not important at all
Social practices		
Invigilation in exams	Not usually required	Required
Copying	Not generally accepted	Acceptable > 80%
Listening to seniors and peer pressure	Low	Very high
Socializing	Important	Important

\*80–85% at least in 10 + 2 level; \*\* 65% or below.

How can you be a good teacher unless you are also a good learner? How can you be good learner unless you have ever been exposed to a good research department? It is extremely easy to trace how and why our education is top down . . . we teach and we do not learn, and our research is only 'me too', since we cannot formulate a problem.

The symptoms are all there. If, year after year, not one doctoral dissertation requires standard deviation to be calculated or *t* test performed in a biology department, wherein lies the remedy?

### Does a foreign model exist?

It is convenient if we have successful foreign models, since we simply cannot afford wastage of national money on any 'new' idea that has no guarantee of prior success abroad!

The American system has made most of its universities import students if necessary to have continuing programmes; the campuses have compulsory research and students are all exposed to working departments. A distinction is made between authentic and second-hand teaching and experiences. Above all, there are usually internal review processes with some honesty.

### What do we do?

When education was made a concurrent subject between the State and the centre, the distinction was not made between higher education and mass education<sup>1,4</sup>. Is it time we make this distinction? Should there be an education cadre? Should we leave it in the hands of amateurs and 'entrepreneurs with business models'?

If the level of students is low, then the only teaching that makes sense is that in which the students do things themselves. However, this calls for greater involvement from the teachers. The 'non-learner' trap is such that the teachers cannot relate to the students' minds and the students also see no point in such an attempt. It is time we find a way out.

1. Sitaramam, V., *Curr. Sci.*, 1995, **69**, 89–94.
2. Sitaramam, V., *Curr. Sci.*, 1998, **75**, 647–652.
3. Sitaramam, V., *Curr. Sci.*, 2000, **79**, 19–21.
4. Sitaramam, V., *Curr. Sci.*, 1995, **68**, 779–782.

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