Education: Empowering Minds Selectively?

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Abstract

" ...Education is not filling the mind with a lot of facts perfecting the instrument and gaining complete mastery of own mind is the ideal of education.." Swami Vivekananda, is the guiding idealogy of one of the largest education boards in India (CBSE). Half a century post independence it's time we assess how our education system meets the idealogy. The study looks into the significance of cognitive/intellective factors in comparison with non-cognitive/ non-intellective factors as determinants of academic achievement. Especially for the intense competitive scene at Pre-University (Science stream), suggesting measures to empower students to compete and survive the aftermath successfully.

Keywords: *Academic achievement, Non-cognitive or non-intellective factors, Adolescence.*

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Introduction

Determinants of Academic Achievement

Our (mainstream) education system narrowly defines and focuses on the intelligence that enables students to score better in examination. Thus understood intelligence is next considered to function in isolation of the rest of human faculties and is often expected to seamlessly translate into performance, thus ensuring success. If you are a high scorer its must be because you are very intelligent, if you are a low scorer then the case is otherwise.

Role of Intelligence

Terman & Oden (1947) at Stanford University began a (still-running)longitudinal study of mentally gifted individuals referred to as termites, which highlighted that the presence of other than intellective factors or what have been termed as noncognitive factors like perseverance, self confidence and integration with goal as determining of success than just their mental abilities. The study draws support from Howe. 1999. 'Genius explained', that "... the most inherent of differences may be one of temperament rather than of intellect as such" to account for the variation in success among individuals with equal IQ s. Highlighting qualities like perseverance and deep synchronization with a long term goal that enables the individual toward 'engaging in deliberate practise' for several years preceding the attainment of the goal.

The interest in demystifying the predictors of individual success is not restricted to the field of psychology and education alone. Economists also delve into the same question though guided by a different objective. They are interested in the answer of what ensures or at the least considerably increases the chances of an individual's socioeconomic success thus making them salient and stable contributors toward the general economic system.

Heckman etal 2007, 2008 in their multidisciplinary research collaboration with economists and psychologists accept the role of cognitive ability as an important determinant of socioeconomic success. Extending the same line of thought they also highlight the importance of what they term as ' socioemotional ' skills like

attention, motivation and self confidence. Which according to the researchers contribute to individual performance in the society and also in cognitive skills oriented tests like cognitive achievement tests and formal educational examinations.

The Role of non-intellective factors

This is not to say that IQ is not important for academic success but IQ alone is not sufficient for academic achievement. This point of view was proposed by Wechsler who incidentally also developed the much popular assessment tools for measuring Intelligence in children and adults. Wechsler spoke about the importance of 'intellective' elements and 'non-intellective' elements which referred to three groups of factors – affective, personal and social. He states that ".....in addition to intellective there are also definite non-intellective factors that determine intelligent behavior. .....we cannot expect to measure total intelligence until our tests also include some measures of the non-intellective factors....".

Wechsler strongly supports the idea of non-intellective or noncognitive factors playing a role in translation of (intelligence) ability into performance and also casts doubt on the validity of the measures that claim to assess intelligence in isolation.

While the cognitive abilities are, usually stashed and measured for under the dominant factor 'g' (Heckman 2001). A similar attempt was made by Dweck et al 2011, who proposed to sum up the plethora of factors that fall under this category of non-cognitive or non-intellective factors in the construct termed as 'academic tenacity'. Academic tenacity decides the emotional stamina of an individual to deal and not (easily) succumb to the stress associated with academic performance, empowering the individual to perform at their optimal.

Research efforts have repeatedly showcased that academic achievement is not a seamless translation of intelligence or cognitive abilities of a student. Ergo it is necessary to unearth and empower students with the 'non-intellective' factors that mediate as well as moderate the translation of ability into achievement.

The Determining effect of Academics

Adolescence

As they are sensitive periods of physical health where susceptibility to illness increases, one of the sensitive periods in academic life which are considered to be the turning points in student life are the Grade 10 and Grade 12 examinations. Both these examinations take place in the context of another developmental milestone – adolescence.

Adolescence as a developmental period is often referred to as a time of 'storm and stress', increased rates of suicide, accidental deaths and affective disorders occurring in this phase are often attributed to intense and frequent negative affect experienced during this time (Casey et al 2007).

India has the largest population of adolescents in the world, being home to 243 million individuals aged 10-19 years. This developmental stage accounts for 22.8% of Indian Population and is often considered as the final frontier for any long term behavioural patterns to be nurtured (Kumar. S 2007).

In the state of Karnataka many students after the completion of Grade 10, their first academic milestone either continue in their schools for Grade 11 and 12, if their school follows a syllabus format that includes the two grades. While all of state syllabus following students and those who choose to discontinue for grades 11 and 12 at school, seek admissions to Pre-University colleges. Most of these students who choose to pursue the PUC syllabus (in three broad streams of Science, Commerce and Arts) now transition from their cloistered school atmospheres characterized by high frequency

teacher student interaction, increased parent engagement, highly regulated and supervised environments to expansive, less regulated and not strenuously supervised college atmosphere.

The Pre-University scene in Karnataka

The second academic milestone is more applicable to the students of Science as now their performance at the 12th grade board exams would decide whether they are admissible to elusive 'professional' careers of medicine or engineering.

The popularity of these 'professional' courses can be gauged based on the dime a dozen tutorials which have mushroomed across the city to prepare students for these examinations. What takes the cake is that an admission into, some of these most sought after tutorials themselves require an entrance exam or a high cut off (based on grade 10 scores) or both. Some (postal) tutorials begin classes from as early as 8th or 9th grades, while the majority hold almost daily classes with extra hours on holidays either early morning or late evenings before and after regular college hours. A few of the tutorials are either run or employ former IITians (alumnus of the premier institute of Engineering IIT) as faculty, cashing in on the relevance of their training. The tutorials run classes between 2-4 hours with their own set of scheduled tests and examinations.

The worm's eye view

So a pre-university student in the science stream with combination of Physics, Chemistry, Biology and Mathematics (PCMB), on a daily basis spends 5-6 hrs in college with another 2-4 hours at tutorials and 2-3 hours at home on self study. Which totals up to 9-13 hours of academic work every day.

The time the student is now left with for self, family or friends or anything non-academic is a matter of simple math and common sense. Families (parents) talk with pride and teachers endorse the idea of 'sacrifice' of these two precious years so students can 'enjoy' the rest of their lives. It is a matter of concern whether what is being 'sacrificed' is just time. Also what happens when this 'sacrifice' fails to pay off? The increase in anxiety and depression disorders and suicide attempts during this period can be gauged by the increased media coverage to the matter in the time leading up to the exams and thereafter at the announcing of results.

The bird's eye view

The annual report of the Pre-University board (Karnataka) 2010 reads that the pass percentage of the combined three streams since 2000 has averaged around 46%(66.84 % for Science stream). The pass percentage refers to the number of students who have met the minimal requirement of marks for the examination. Of the six lakh odd students who appear for this exam state wide (across all the three streams of Science, Commerce and Arts) only half of them manage to clear it. To qualify for the various competitive examinations students require an aggregate percentage of 50 for medicine and dental undergraduate courses and 45% for engineering and architecture courses. The report does not mention the number of students who clear this bench mark.

There is no survey or statistics that indicate the average number of competitive examinations a student of II PUC has to face for entrance into a 'professional' course. In the state of Karnataka a science stream student interested in taking up one of the 'professional' courses, appears for two state level entrance examinations to better their chances for admission besides the annual II PU board examination. To this list one can also add National level entrance tests for premiere institutes, entrance exams in other states and private institutions. A medical aspirant attempts 4-5 entrance examinations, while an engineering aspirant attempts 3-4 such examinations across the three levels- national, state and private.

Though the common inference of the above scenario suggests that opportunities to write many entrance examinations would mean many aspiring students realize their dreams. The numbers narrate a different story. Across the country, over 4 lakh students compete for 35,000 undergraduate seats in medicine annually. There are a total of 17 entrance tests for admission to medical colleges in the country, conducted by various bodies including the CBSE, the state governments and some private institutes.

Similarly, over 10 lakh students appear for 150 entrance tests conducted by various state boards and institutions, including the IITs.Though the scenario on the surface looks easier for engineering, the popularity of some branches over others in view of better scope, the questionable status of some of the colleges makes the actual list of favourable seats shorter and every year a sizeable chunk of these seats go vacant.

From the current academic year (2012-13) Karnataka Pre-University would follow the CBSE syllabus instead of the former state syllabus, this change has been done with the objective that the move will empower Pre-University students to better compete at National level competitive exams. So the current year of students are the first batch to face a paradigm shift.

While CSBE has, included the teaching of life skills as a mandatory part of their educational curriculum, to look into and provide for the holistic development of students. Teachers are trained to impart life skills and assess students on a general set of defined life skills considered to be essential for thriving mental health. Life skills education has been included in the curriculum of grade VI from 2003-4 and grade VII since 2004-5 and subsequently in grades IX and X. The objective of the program has been to "empower learners with a sense of self-confidence, ecosensitivity and the ability to discern between the right and the wrong" . The Karnataka state Pre-University board has not paid attention in this direction.

Conclusion: The way ahead

The above scenario has been brought to the purview of the Ministry of Health, Government of India. The Department of Psychiatry NIMHANS Bangalore, in their Operational Guidelines for District Mental Health Program (for the 11th five year plan) mentioned the necessity of including Life skills based education program in the educational curriculum at School level.

The measures suggested can be considered as a move in the right direction. The implementation of, these programs are a beginning of an answer and not a solution to the situation. The response needs to be imbedded in the context of rigorous research.

Rigourous research approach needed

The program subscribes a generic view of life skills, while several studies strongly advocate a more specific analysis of the skills that impact student quality of life. There is no (Quantitative/ large scale) feedback report of these programs that indicate whether firstly the skills targeted were learnt and sustained. Secondly whether, these skills did significantly influence the student's quality of life. Instead implementing rigorous research design to, understand their nature and impact.

Designing Intervention or skill building programs with thus emerging skills, supported by pre and post program assessment would reveal a more accurate influence of the skills in question and more tangible support for the large amount of funds allocated to these programs.

At Pre-University, the document mentions an incidence rate of 15-20% for recognizable mental disorders like depression, anxiety, somatoform disorders, adjustment disorders, personality disorders, alcohol and

drug abuse. The document also suggests that for every diagnosable disorder there are many more suffering from emotional disturbances and sub-clinical symptoms. These symptoms could range from harmless boredom, sadness, irritability, psychosomatic symptoms to potential precarious behaviours of hostility towards others, sever examination fears and suicide attempts to name a few.

The suggested plan of action in the document is to train select teachers in counselling skills and sensitize them to effectively deal with specific issues of adolescence.

While the suggestion of training teachers in counselling skills would definitely improve the quality of relationship between teacher and the student. This would be in addition to the requirements placed on a (already overburdened) teacher, also this places the solution to be dependent on an external (interpersonal) context.

Psychological innoculation

Seligman mentions Jonas Salk suggesting the concept of 'immunizing kids psychologically' so that they can 'fight mental illness better'. Seligman's resultant research attempt in this direction is termed 'learned optimism'. The program developed has garnered support and proposes to successfully cultivate the 'habit' of optimism. The program equips students with skills which are framed on the principles of Cognitive therapies that considers thoughts or habits of thinking as the core of emotions and behaviour (both adaptive and maladaptive) and therefore to change behaviours one needs to change thinking habits. Research focusing on development of such (psychological immunity building) skills would empower the students with essential intrapersonal skills that can now be applied across myriad contexts.

One of the strong impact factors of student life is their academic achievement. As already mentioned many students are performing far below their potential due to factors unrelated to their academic abilities. Educational curriculum needs to along with focusing efforts on intense academic grills that enable students to better their performance and receive a fair chance in the intense competition. Also equip them with nonintellective or noncognitive factors that often moderate if not mediate the translation of their abilities into performance.

Considering the steep eventual competition they are to face where just content knowledge and high-speed processing of information is not all the skills they will require. The ability to deal with peer and adult pressure when choosing career path, the unavoidable disappointment of not always achieving their top choice of career, their ability to understand the diversity of their inherent potentials so they can come up with satisfying alternative career plans and most importantly to help them to discern between quality of life and life style.

Inculcating the training of these skills into regular and as integral part of the educational curriculum will render it holistic in its outlook and reduce the distance between reality and the ideology of educating minds beyond facts.

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