

## FUTURISATION OF INDIAN EDUCATION

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### Abstract

*Globalisation the latest trend in trade, industry, communication, business even of education has brought new structural changes in view of international standards and competition. In view of the ensuring changes in the future, we will have to orient ourselves and new demands of it, and of course it is Education which is the only means for preparing people for the future. It can help to develop future oriented attitudes, values, skills and a vision. Now let us see what type of education would be more suitable for the future keeping into consideration the present condition & emerging challenges in India.*

**Key Words:** *Futurisation, Globalisation, Indian Education*

*"If you are planning for a year grow rice; if you are planning for ten years grow trees and if you are planning for hundred years invest in education and grow educational institutions."*

- A famous Chinese saying

A glance into the annals of human history reveals the fact that the primitive and pastoral man has changed himself to an electronic man through different stages. It has been possible only due to inquisitive instinct and quest to overcome out-moded and obsolete institutions, ideals, beliefs and things. Had there been no changes we would have been leading a life of moribund in society of pre-historic age.

Every society has its characteristic attitude towards past, present & future. In the stagnant societies, the past crept forward into the present and repeated it self in the future. In such a society, the most convenient way to prepare a child was to foster the skills of the past because these were the skills he would need in the future. Thus, father handed down to son all sorts of practical techniques/skills for future. In such a society, knowledge was transmitted not by specialists in the schools, but through the family, religious institutions. The learner and the teachers were dispersed throughout the entire community. The curriculum of the past was the focus.

In the second phase, the machine age smashed the practices of the past and required a new kind of man which demanded new skills and new techniques. Faced with conditions that had never existed before, man had to understand the present. Thus, the focus of education, itself began to shift away from the past and through the present towards the future.

### **A Glance into the present status and future projections of Indian Education:**

Generally we think that, today, there has been huge expansion in the field of education. But our perceptions will be wrong if we compare the expansion with other countries and also percentage of enrolment in education in comparison to the population of our country.

Development Parameters	India Present	UMI reference for India
Male Adult literacy rate (%)	68%	96%
Female adult literacy rate	44%	94%
Total literacy rate	65%	95%

Secondary school enrolment ratio	60%	69%
Public Expenditure on Education as GNP	3.2%	4.9%
Teacher-Pupil Ratio	1:42	1:20

Source: Based on world Development Indicators, 2001, The World Bank.

**UMI:** - Upper middle income countries (i.e. Argentina, Chile, Mexico, South Africa etc.)

Full development of India's enormous human potential will require a shift in national priorities, to commit a greater portion of the country's financial resources to the education sector. India currently invests 3.2 – 4.4 percent of GNP on education. This compares unfavourably with the UMI reference level of 4.9 percent, especially with countries such as South Africa, which invests 7.9 percent of GNP on education. A near doubling of investments in education is the soundest policy for quadrupling the country's GDP per capita.

#### **Future Education Scenario:**

		1980 (Actual)	1999-2000	2020 (Business as usual)	2020 Best case scenario
Primary Enrolment	(1-5)	80%	89%	100%	100%
Elementary Enrolment	(1-8)	77%	79%	85%	100%
Secondary Enrolment	(9-12)	30%	58%	75%	100%
Dropout Rate	(1-5)	54%	40%	20%	0%
Dropout Rate	(1-8)	73%	54%	35%	0%

Source: Garry Jacobs "Vision 2020: Towards a knowledge society"

India's education system has expanded exponentially over the past 5 decades, but its current achievements are grossly inadequate for the nation to realise its potential greatness. The net enrolment rate in secondary school is around 58-60%. These compare with the 69% secondary enrolment for the UMI reference level. The dropout rate was 40% at the primary and 54% at the upper primary level in 1999-2000. These high dropout rates from both primary & secondary schools, combined with low enrolment rates at the higher levels deprive Tens of millions of children of their full rights as citizens. Out of approximately 200 million children in the age group 6- 14 years, only 120 million are in schools and net attendance in the primary level is only 66% of the enrolment. Further, less than 7% of the children ever pass the 10<sup>th</sup> standard public examination.

Apart from addressing the needs of a large illiterate population, something has to be done for the school dropouts, otherwise by the year 2016 there will be approximately 500 million people in the country with less than 5 years of schooling and another 300 million that will not have completed high school. In other words, about 2/3 of the population will lack the minimum level of education needed to keep pace with and take advantage of the social change occurring within the country and world wide.

An enormous increase in the number of teachers will also be required to achieve the alternative scenario, i.e. eliminating primary school dropouts and reducing the teacher-pupil ratio from the present high level of 1:42 down to around 1:20 which is the UMI reference level. Together, this will require an additional 3 million primary school teachers, more than twice the number currently employed. Similar increases will be required at middle and secondary school levels. The training of such large number of teachers will require the establishment of additional teacher's training colleges and much larger budget allocation for teacher's salaries.

**Impact of Literacy on Alleviation of Hunger and Poverty in India**

Literacy Level	%age of Population			
	Mal Nourished		Below Poverty Level	
	Rural	Urban	Rural	Urban
Zero	36	28	43	55
Below primary level	31	25	29	42
Above primary level	26	18	20	33
Graduate & Technical	14	8	7	4

Source: - Panjab Singh "Vision 2020: Agriculture Policy"

The illiterate people, whether urban or rural, are the most poor and malnourished. In urban areas the impact of literacy on poverty is the highest. Education, even above primary level is extremely effective in reducing both poverty and hunger. Graduate and technical education is, of course, the most important instrument for reducing both poverty & hunger. Therefore the education policy of the country must be geared to remove as soon as possible, as nearly 50% of our people are still illiterate. Free education up to 10<sup>th</sup> standard coupled with midday meal will go a long way in reducing both poverty and hunger and will thus help to build a strong India.

**Higher Education:**

At present there are more than 247 universities & 98 deemed to be universities, more than 16000 colleges, 97 lakh students and 4.5 lakh teachers in India in comparison to 18 universities, 500 colleges, 2.28 lakh students and about 25 thousand teachers in 1947. This shows that massive expansion of higher education has taken place after Independence. However, it is not completely true.

Although, enrolment of 97 lakh students appears to be huge but it accounts only far less than 1% of total population of India. In other words, more than 99% population is still away from higher education. Therefore, in future, efforts are need to be made to provide the access to higher education to as many people as possible.

Before moving further, let's take a glimpse of population wise universities of different countries:-

**No. of Universities in some leading countries:**

Sr. No.	Country	Population (crores)	Universities
1	Japan	12.7	684
2.	USA	27.6	2364
3.	UK	5.98	104 (231 auto institutes)
4.	Germany	8.2	330
5.	India	100	247 + 98 deemed to be universities

Japan for its 12.7 crore people has 684 universities. Where as USA with 27.6 crore populations have 2364 university. However as mentioned above for 100 crore Indians, only 345 university are there. These facts are indicative of the acute shortage of universities in India. To come close to Japan & USA roughly 6000-9000 universities are required to be established in India. It took nearly 60 yrs to establish 300 universities. Can we add atleast another 300 universities in next 14 years? seems to be quite impossible!

The youths between the age group of 17-26 years are also large in numbers and this age group is expected to be enrolled in higher education. It is a matter of great concern that most of them (about 93%) are out of higher education system and have no access to higher education. In countries like Canada, USA & Australia the student's enrolment of the same corresponding age group is between 80% - 88%. We are even behind Thailand, Brazil and Indonesia where enrolment in higher education is 19%, 12% and 11% respectively. The main objective of the UGC is to raise enrolment from present 6% to 10% where as National knowledge commission suggests to 15%. In this context it is pertinent to

mention that the enrolment in higher education of at least 20% is imperative for economic progress of any country. Therefore, the first and foremost task for India is to expand its higher education and cover as many, the eligible age group of young Indians, as possible in future.

### **Major Challenges for India**

*The education system in India is plagued by following maladies such as:*

1. Mass education without emphasising on quality.
2. Remained conventional due to rigidity in the system.
3. No genuine efforts have been made ever the years to induce changes into the system based on societal needs & market demands.
4. The role of education has been defined in the narrow perspective of imparting factual knowledge and holders of higher degrees & diplomas are only considered as educated person.
5. Education has largely remained ineffective in the event of erosion of moral values of our society.
6. Education has failed to produce integrated personalities.
7. There is growing tendency among the educated youths to disassociate from the mainstream.
8. Education system has not been able to reciprocate either to the needs or to the problems of society.

### **The Futuristic Perspective**

There are three aspects to a Futuristic perspective: First, what the future is likely to look like; Secondly, what changes are demanded of the education system in order not merely to survive but thrive in the changed and changing environment and Thirdly, the chances of such necessary changes taking place, either reactively or pro-actively, under Indian conditions.

### **The New Global Environment**

First let us look at the emerging scenario in the external environment. According to expert observers, the external global scenario has the following features:

- Both the rate & the magnitude of Social & Economic changes taking place are bewildering & will continue to be so.
- Information technology has shrunk both time & distance as well as abolished geographical borders making the world virtually a '**global village**'.
- People, Capital & technology will move across national borders not only quickly but unexpectedly.
- Economic competition within and between countries will continue not only to increase but intensify.
- Consumer tastes will not only change fast but become more demanding.
- Jobs, even organisations, can no longer be assumed to be permanent.
- Being one step ahead of others will be crucial for individuals, organisation & even countries.
- Jobs adding competitive value to organisations will alone be permanent & high-paid; routine jobs will either be automated or be few & low-paid.
- Changing content of jobs & frequent downsizing in organisations would necessitate frequent retraining & lifelong learning of new skills.
- Conventional educational institutions will not be the only sources of education or recruitment of candidates for jobs.

- Educational services will become freely tradable across national borders with Indian institutions having foreign campuses and foreign institutions having Indian campuses.
- Other things being equal, student from 'branded' institutions will have an edge over those from non-descript ones.
- Government will cease to be the main, or even a major, employer.

#### **Criteria of Education for future:**

While the "curriculum on paper" looks perfect, the problem arises when it gets translated into "Curriculum in action". Lack of proper approach to teaching learning, inadequate preparation of teachers and his capacity to deploy learning materials and lack of valid & reliable assessment techniques contribute in a big way to the misery of education.

In the technological systems of tomorrow – fast, adjustable & self regulating machines will deal with flow of information. Machines will increasingly perform the routine tasks; men will do the intellectual and creative tasks. Machines & men both, will scattered across the globe linked together by amazingly sensitive communications not only through internet or e-mail but also like e-through or e-feelings.

For education the lesson is clear. Here the prior objective must be to increase individual's capacity & capability towards:-

**(a)** Speed to do things faster. **(b)** Economy of time, money & effort. **(c)** Effective communication skills. **(d)** Formulation of futuristic policies. **(e)** Problem Solving. **(f)** Risk taking **(g)** Confidence to undertake innovatives. **(h)** Adaptation & adjustment to continual change.

#### **Future Goals of Education**

What will be future goals of education, and how do we prepare students for the future? "If education were a simple matter of teaching the 3 R's, the future might be different. We don't even have a clear idea of what education is supposed to accomplish. Education is supposed to prepare an individual for life, but we don't have a clear model of how it does that. With rapid change, we do not even know what life to prepare for." It can be said that change is so fast, that it is very difficult to fix goals of education in advance.

It is something of a solace to note that the global community appears to have finally accepted the Indian view point and the UNESCO international commission on Education for the 21<sup>st</sup> century named as "Learning : The treasure within" declared that, education throughout life is based on 4 pillars i.e. Learning to know as 'Gyanyog', Learning to do as 'Karmyog', Learning to live together as 'Sahyog' and learning to be as 'Atmasakshatkar', i.e. self-realisation, which is the ultimate goal of human life." It is interesting to note that while the two pillars are associated with I.Q. and comes under cognitive and psychomotor domains respectively; third one is concerned with E.Q. and comes under affective domain. The forth filler involves S.Q. and needs an additional domain "Spiritual domain" to be included in the taxonomy of educational objectives. Hence it is imperative that future course content of all educational programmes shall have to include the study of these various types of intelligence. These programmes should open themselves to the new findings and should pay attention towards the indigenous ideas, thoughts & findings. This will pave the path to develop an education system which will be rooted in culture and committed to progress.

The report also said that, each individual has the hidden talents like: -

**(a)** Memory & reasoning power **(b)** Imagination **(c)** Physical ability **(d)** Aesthetic sense **(e)** Aptitude to communicate. Therefore, what needs to be done is to restructure the educational process to draw out these talents in every child.

#### **Curriculum of the future**

At present, the relevance of curriculum is being questioned at all fora. If the content of studies not related to life of the learner then it is a sheet waste of human energy.

In fact, the present curriculum and its division into watertight compartment is not based on any thought out conception of contemporary human needs. It is based on inertia and a class of academic guides without giving much thought to vibrant and radical thoughts.

The curriculum should be modernised. It should help in achieving the aims of modernised education i.e. education for the future which should be broad based & pupil centred.

The curriculum of tomorrow therefore, must include not only an extremely wide range of courses but also a strong emphasis on future relevant behavioural skills, competences and specific attitudes. It would be: -

- a) **Broad based & pupil centred:** It should include the totality of experiences that a pupil receives at school, whether in classroom, library, laboratory, and workshop or in playground. It should consist of much more than the subject matter. It should revolve around the pupil, because the pupil is the central factor in the curriculum. There should be scope for specialisation.
- b) **Community centred:** It should take into account the local requirements. It should be totally related to the changing needs of the community. It should make full use of resources of the community.
- c) **Social & Scientific Outlook:** Vocational, industrial & technical courses should be included in the curriculum, so that it must benefit the society in the long term. There should be balance between Atom & Ahimsa.
- d) **Integrated Curriculum:** Units of teaching should be correlated with the life & environment of pupils rather than with narrow bits of information.
- e) **Proper Harmony:** There should be proper harmony between formal & informal education, liberal & vocational education and individual & social aims of education.
- f) **Vocationalisation of education:** Mere intellectual & spiritual training won't do. A hungry man cannot achieve any thing great & good in his life. Agraracy & Technocracy should be included with Literacy & Numeracy.
- g) **Work Experience:** To make the curriculum productive oriented, work-experience should also be introduced as an integral part of all education-general/vocational. There should be more emphasis on manual work. Participation in productive work in the school, in the workshop, in the farm, in the factory/industry should be encouraged.
- h) **Study of foreign languages:** It is important to encourage the study of important foreign languages on a more extensive scale for a variety of academic and practical purposes.

A T.V. based curriculum can help slow learners to supplement class room teaching, fast learners to learn at much faster rates than the rest of the class, dropouts to acquire knowledge they missed out in school, and adults to expand their level of education without returning to school.

### **Methods of Learning**

Media are going to play a crucial role in supporting the learning system. Besides the use of projecting devices, such as, overhead projectors, Tape, slide, programmes & video tapes, multimedia supported interactive video, internet & computers utilising intelligent tutorial system via expert system and artificial intelligence will be of common occurrence in next two decades. The libraries which are now stocked with books & journals will be mechanised through high speed networking and optical scanners facilitating information retrieval and search at a phenomenal speed.

### **Methods of Teaching**

Methods of teaching are to be based on individual differences, learning by doing and principle of freedom. Following methods like-computerised instructions & Internet, project, Heuristic, Experimental methods, Lecture cum demonstration, seminar, and Tutorial use of hardware in teaching technology i.e. teaching machine, video tapes, films & computers etc. can be used widely.

### Re-current Education

Career begins after one shot of education at the school & then colleges. The re-training and re-education is largely unknown. Scholars have termed it as education- career linear relationship. The future will witness a spiralling pattern of education and job and career. After a couple of years of education, people will enter into jobs, re-enter education to upgrade their skills, go back to their jobs and so on & so forth. Due to nature of changes in the science & technology of production processes, as well as in service management, the requirement of upgradation of skills would be faster than it is today. The conventional educational system would find it difficult to cope with the demands of the recurrent education. It would necessitate greater use of flexible, relevant and up-to-date open & distance education.

A.	Education	Career
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B.	Education	Career	Education	Career
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Education	Career
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- A. Education – Career linearity in 20<sup>th</sup> century.  
 B. Education – Career – recurrent spirality in future.

### Some aspects of operational strategy for Futurisation of Indian Education

Dr. A.P.J. Abdul Kalam has said “With 300 universities, 13000 colleges, 5 Lakhs teachers and 5, 83000 village it is essential that every university within its 10 KMs have to adopt a village and shoulder the responsibility of providing literacy to 10,000 population annually and each college catering to literacy of 1000 population. We can achieve literacy within next 10 years”.

Some of the operational strategies for Futurisation of Indian Education are mentioned below:

1. Presently the main reason for student’s sense of frustration and lack of motivation leading to campus unrest is their perception that what they learn has no relevance to the real world. This is the reason why campus unrest is relatively rare in good professional colleges like IIT, IIM etc. where students realize that they are being educated for a real world career. Therefore, in future, in every subject taught, efforts should be made to provide a link with the real world.
2. Inviting practising professional to serve on the boards of studies and for lectures on special topics should be an essential part of pedagogy.
3. Another invaluable & highly credible link with the real world, in future, will be for the students to interact with alumni who have done well in their professions and prospective employees.
4. Presently, institutions in India have their own combinations of subjects and students have either to take them or join other institutions if they want a different combinations but in future institutions have to plan for the introduction of modular courses as students are in close touch with the market & seem to have a better idea of what course would benefit them than the parents or even teachers. May be in the time to come, boards of studies will have student’s representatives in them.
5. Responsibility for students learning in our culture rests entirely with the teacher. Often we find students agitating that the teacher has not covered the syllabus & so the examination should be postponed. In future, this responsibility will be shifted towards the students. Developing a motivation for life-long learning & self- learning capacity in students will be the single most objective of educational institutions.

6. In future, illiteracy would mean not inability to read or write but inability to learn, unlearn & relearn.
7. Keeping into consideration the alarming rise in unemployment problem, in future, employability centres will be established by our educational institutions. The centres will collect & maintain updated data about the employment situation outside. Present cross border terrorism will be replaced by cross border education & employment. According to a recent report by Mckinsey, employers felt that 70% of Indian graduate engineers were unemployable. The employability centre will keeps in touch with prospective employers & ascertain their expectations from students in regard to both formal & academic knowledge as well as soft skills & pass this feed back on to the concerned department to build these into the curricula.
8. Economic forum along with N.S.S can help the students in conducting socio-economic survey of villages within few K.M. of the location of the institution which also helps in frequent visits for feedback by the students. This is also as part of kindling the spirit of social responsibility and promoting the work of an educational institution towards social relevance. Hence along with the regular curriculum, Co-curricular activities like NCC/NSS should be made compulsory to inculcate discipline & social responsibility among students.
9. A nature lover's club would facilitate the awareness for conservation of environment, ecological balance. This is particularly relevant in the background of environmental disasters being the greatest threat for the future.
10. Personality development Programmes should be part of emphasising on tolerance, universal brotherhood and co-existence.
11. Yoga should be introduced to combat stress & help maintaining a sound physical & mental health.
12. Sex education should be imparted keeping into consideration alarming rise in AIDS, Sexual Transmitted Diseases (STD) etc.
13. Future will require effective communication skill and those who will possess this power are sure to be successful. Forum for group discussion, literary forum, should help students in cultivating the communication & writing skills. They must also help to sensitise the students to social problems like over population, unemployment, poverty, dowry harassment, female infanticide, corruption etc.
14. Science forum can help students in developing scientific temper and a sense of enquiry into various issues and help promoting innovations.
15. Talents forum help the liberal display of students innate talents in various fields like music, dance, literary, arts, dramatics.
16. Modules on great personalities and their life & work, Indian National Movement & Sacrifices of freedom fighters, great achievers in various fields have to be presented in an effective & impartial manner.

### **Conclusion**

The faster the pace of life, the more rapidly do the future possibilities turn into present realities. "The future", Said John Dewey, "will be a race between education and catastrophe". Which will win is mainly, if not entirely, in the hands of our educators. Because the destiny of India is being shaped in her classrooms.

We have now a super ordinate goal, the one which is common to the existence, survival and flourishing of over 1050 million people living in this sub-continent. There is every reason to be proud of dreaming for a better future and translating it into a reality.

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