Changing Times Demand Change*

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Abstract

A country has to grapple with problems inherited from the past, issues that it needs to address in the present and those that are important to shape the future. In the developing world, as in India, the accumulated burden of the past is a major hindrance in the shaping of the future. This burden is visible in indicators such as poverty, illiteracy or lack of education, or malnutrition, or lack of infrastructure. But the thoughts and systems that we inherit can be an unseen burden that constantly creates bottlenecks. The phrase 'thinking outside the box' is used very often, but when it comes to actual implementation, we are slaves to our past which pushes us back inside the box. The word 'past' used to refer to centuries at one time. Now, with rapidly changing communication technologies, often five years seems to be a long time ago. In India too, the pace of change has quickened perceptibly, whether we like it or not. There was a time when the Indian mind was used to status quo. Today, there is impatience for change of one kind or another, and in one direction or another. How can we address challenges of education in this quick-paced change? What kind of systems do we need to ensure that we are not trapped in the burden of the past?

Shri Kapil Sibal, Hon'ble Minister for Human Resource Development, declared that inclusion, expansion and excellence were going to be the principles of his ministry direction in addressing the problems of education in India. Broadly speaking, the tasks are early childhood education, elementary education, secondary education, vocational skilling, college education, research and knowledge development. Total number of children and people to be covered in this is roughly 65 crore, or two-thirds of India's population, including the 20 crore adult illiterates, about 12 crore children in the

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0-6 age category, 20 crore children in the elementary school age group, about 6 crore in the 14-16 age group, and another 6 crore in the 16-20 age group. Out of these, at least half fall in the category of under-privileged, who need active help.

While the numbers are massive and larger than most countries in the world, let us understand that we have also created an equally massive system over the years to meet the challenge. *Aanganwadis* in every habitation, primary school within one km of every habitation, and an upper primary school within two kms of most habitations. There are institutions created to support all this work till cluster level. But, we have a major problem in being able to impart quality learning at all levels. Also, there are big access gaps in secondary education, vocational education and tertiary education.

There too, we have structures such as open schools, boards of examination, school departments, colleges, open universities, universities, and so on.

So, is it a question of simply expanding these services and improving them?

Let me suggest that, perhaps, all these old structures will not serve the needs of the future, and we need to create something new. There is a need to dismantle old structures and create new mechanisms. Perhaps not immediately, but we must start looking for solutions so that we do not say after five years that we must live with the structures we have. The relatively open territory of vocational skilling has been opened up to completely new initiatives that have taken a departure from the former 'ITI only' approach. We are learning in this field and these learnings should become applicable in other sectors too.

I share some stray thoughts here. I recently met a young man who has started helping farmers understand best agricultural practices by watching videos of what other farmers in the nearby area are doing, and discussing the lessons. This work does not use textbooks, but it spreads knowledge. It does not use highly educated university professors. Expert farmers share their knowledge with others, giving rise to more experimentation and learning. Here there are no film institute graduates to make the videos. A small video camera is used by local youths who have a two-month on-the-job training. The videos are shown in villages on a small handheld projector, which is the size of a cell phone. The farmers are learning from one another. A new structure is evolving for learning because the formal structures have failed or have not reached them. The project operated by young Rikin Gandhi started as a pilot project in Karnataka, and has spread to over 400 villages in eight states in a short span of three years.

There are about five crore young people in our country who want to complete secondary school certification, since without it they cannot access higher levels of learning. They cannot get secondary education because there is no access to a school. Why should they wait for a school to be opened in the vicinity? Do they need to go to a day school? There is

a National Open School and it can certainly be promoted. However, most young people who have been deprived of secondary school certification would like to have what they consider a proper certification that the market respects at least to some extent. Perhaps, the government should start a programme to assist these large number of youth who are deprived or are certain to be deprived for lack of secondary schools. Like what was done in Madhya Pradesh to start primary schools, why not let these students identify a teacher who will be paid on a per student basis, as the student clears assessments in stages of say, three months. This mechanism of payment upon passing the course has already been introduced in the vocational training sphere. Why wait to build schools and train teachers when we know that we need a huge workforce and urgently? We know that there is a large number of young people engaged in tutoring children. Many of them can become knowledge providers. I am deliberately avoiding the noun 'teacher'. Is this not possible? Or, is it just not acceptable to the establishment including education experts?

I am not saying that we do not need proper schools. But, is a 'school' needed to pass the secondary school certification examination?

We have passed a law for free and compulsory education that now prevents government-run or aided schools from charging any kind of fees. Suppose, if parents feel that they should contribute what they can to the school, would that be against the law? Do we want free and compulsory education? Or, do we want compulsorily free education. True, no child should be deprived of schooling and discriminated against if his parents cannot or do not pay fees. But why should people not be encouraged to pay in cash or kind even if not as a regular payment? Most people in India are of the opinion that services given free lose their value and quality. This also includes the poor. In fact, even a token contribution is more empowering to the parent than many other measures. Our surveys indicate that large number of parents who send their children to government schools also send their children for private tuitions. Is this not an obvious contradiction?

There is a huge difference between something being given free and something being freely available. The government is 'giving' free education in schools. But, it is available in a structured fashion within structures and not freely available. What about learning that is freely available in the society outside the school? A person can choose what he wants and possibly according to his convenience. It is not what is prescribed by the structures and may not be free of cost, but it could be more useful. We need to be aware that times are moving from the era of education being given free to it becoming freely available as the number of educated people in the society is increasing, and modern technology is making practically free access to knowledge possible.

I want to suggest that the structures of education we have created, or transplanted, from other societies have become ineffective. On the

other hand, there is a new energy in India, and there is a great demand for education. People are finding their own ways to learn and move forward. The government and those with resources should create and support more open mechanisms for learning rather than extending old structures, especially beyond the elementary stage of learning, so that the structures do not become a hindrance. The Knowledge Commission has already suggested setting up libraries. But the idea has not found serious support. Why? Creating good public libraries is one important step in making knowledge freely available.

My organisation, *Pratham*, is working on adult literacy pilots at some NREGA projects. We recognised that although a large majority of the workers, especially women, at these sites in Rajasthan are illiterate, there are also a large number of young men and women who are educated up to high school or secondary school. Some are even college students. So, we have made computer trainers out of the educated NREGA workers, who teach computer to the secondary school educated workers, who, in turn, teach five adult illiterates each in their village. We find that the literacy acquisition rate is very good with over 40 per cent of women having learned to read reasonably well in about three months. Besides, everyone involved in the project is learning something new. What if this learning time was compensated at the normal NREGA rates as a part of the programme? This is not allowed in the scheme. Why not use NREGA as an opportunity to train people in maintaining the public properties in their villages? Why not skill them in construction and handling machines rather than giving them just unskilled manual work? We extended a scheme that was created in Maharashtra during 1973-75, thanks to an extended statewide famine and a strong movement to demand work. So much has changed since then, but many of the people who were young then, and worked on famine relief works breaking stones and digging ditches are still doing the same work even in their old age in some parts of the state.

I am aware that many will not agree with me. My intention is to challenge your imagination today. Einstein is quoted as saying, "We cannot solve problems by using the same kind of thinking we used when we created them." Of course, we can argue with Einstein.

Are You a Slave?

There is a simple quotation from Dr Babasaheb Ambedkar that has intrigued me for many years. The English translation of the Marathi quote goes something like this: "Make a slave aware of his slavery and he will rise in rebellion." Simple enough?

In my training programmes in the nineties with a group of adult literacy workers and some neoliterate women in Mumbai, I began asking the young activists a simple follow up question. Does a slave not know that he is a slave? I mean, he does know that someone owns him or he is bonded to, and not a man of free will. Does he not? The answer from the audience, as I am

sure from some of the readers would be, yes. The slave does know that he is a slave and someone is his owner.

Then there was another follow up question. Well, in that case, what does Dr Ambedkar mean by 'make him aware of his slavery'. Should we sit down with him and tell him that he is a slave? But, he knows, he is a slave. Does he not? At this point I would start talking to the neoliterate women about their day. They said they woke up early to fetch water. Then they got busy preparing to cook. The children had to be readied for school. Eventually, the husband woke up and he had to be given his tea and *nashta*. "Your husband does not help you?", I would ask. The answer came quickly, "How can he? He is a man, after all." At this time, with a small pause, the class would burst out laughing and applauding.

The fact is that a slave does not know he is a slave. He has accepted a belief system based on what he has experienced, heard and seen. A different life possible is not something that occurs to the slave. Making the slave aware of his slavery, I think, means making him see that life can be different. Every social reformer and political revolutionary essentially showed us that a different life was possible, which the relevant society had not even thought of.

Once you agree that a slave does not *know* he is a slave. I must ask, are you a slave? If your answer is an emphatic 'No!', I shall ask you to think again. After all, a slave does not know he is a slave. I think it is important for us to acknowledge that we are bound by our own existence and often do not see beyond it. We know through history how man changed his perception of the earth from flat to a sphere. Now we are asking ourselves questions about the shape and size of the universe, and will not take one fixed notion as yet. Humanity, although not necessarily large numbers of human beings, has learned that we need to rise above the day-to-day perceptions to understand reality, so that we can act upon it. Some call it thinking outside the box.

A Box Called 'School'

We know it is neither easy nor common to think outside the box. The young ones can easily do so because they are not burdened with experience, which is another name for bias. As we get older and more experienced, we get more biased and our minds get blocked to new possibilities. Also, it is important to realise that there is not just one box to think out of. A person may think out of box in one context and yet in another he may be comfortable with his existence inside another. Our mind seems to be split into various boxes relating to our various experiences. Great thinkers, scientists, revolutionaries and reformers have been guilty of being conservative in one aspect of their life while breaking barriers in another. We may think outside one box and feel good, but we may be still inside another box. So, in thinking about the nature of things or in changing reality, it is important to consider various points of view, the evidence in support of each, and arrive at working hypotheses that help us to act. When studying nature, since

the basic reality remains the same, the study is relatively simpler, and allows building upon old hypotheses or theories, unless some new facts come to light that demand abandoning of old theories in favour of new. This has happened a few times over the last half of the last millennium. But when studying a society or nature's interface with a society, one has to be mindful of the changing social contexts, which create new facts quite frequently, and it is necessary to act on these facts for which we may have to create new hypotheses. When this context is changing rapidly, as in today's India, it is even more important to be sensitive to changing realities. Relying on existing models, theories and ideas can be ineffective, wasteful and sometimes even counterproductive.

An educationist in the United States, now in his late eighties, observed some years ago in a conversation that our world has changed so much over the recent centuries, but the basic model of what a school should be has not undergone a change. This is a simple yet fascinating observation. There have been different ways of transferring knowledge from one generation to the next over millennia, but the current model of a school where several children are taught by one teacher in a classroom, where they meet daily, has not changed fundamentally since it came into being about three hundred years ago. The scalable, replicable mass nature of the school model, its economics and the simple logistical convenience it offers for knowledge transfer is still what allows it to continue without change.

Such a school was once seen as a necessity and a need. Today, it is a habit and habits are difficult to change. Once upon a time, when there were no schools, what did the children do all day? While the school is a place where children are taught, it also keeps children engaged away from home, and away from streets, in safety. It is a place where children socialise in relatively large groups. They learn to negotiate with peers. It gives free time to parents, especially mothers. A school is believed to help keep children largely out of trouble, and disciplining — even regimenting them so that they submit to the general norms of the society while contributing to it.

Clearly, the school has many benefits beyond its role of educating children. This helps in maintaining the habit, generation after generation.

We are slaves to this model of schools, and cannot think of another that can take its place. In fact, we think of one school being better than another, but we still need it to be a 'school'. In the West, conscientious objectors to the system of education have created home-schooling models. In many countries such as Australia, where providing access to sparsely populated hamlets or even individual homes separated by long distances is a problem, distance education models are in place, where parents or neighbours play a central role. These are seen as exceptions. But could they hold the elements of future education facilities?

The possibilities created by information and communication technology are unique to this century

and millennium as never before in the history of mankind. Policy-makers in most countries, including India, have recognised this. The result is that everyone wants to put computers and other related equipment in schools. But, there is no evidence that any of the policy-makers or the business interests, have stopped to think of the true revolutionary potential of the new and still evolving technology, in reforming the whole sector of education. There is enough happenings in the society that points at what is possible. But, there is no challenging the basic school model. If resources allow, we would like to put modern technology in an old model, and expect it to perform better. The idea of student-centred teaching has been taking roots but the central theme is that children learn in the classroom a curriculum and a syllabus that is decided somewhere far away from the school. It is widely acknowledged outside the policy and in academic debates that children learn a lot more outside the classroom these days, than inside the classroom. In fact there is so much they need to learn today that a linear, graded, syllabus-controlled approach to teaching may be a waste of time already.

Notice that we have started talking of reducing the burden of studies, which usually means reduce the pages of textbook to be learned and make examinations easy or simply abolish them. The amount of knowledge available has increased a thousand fold today. The need for higher level skills is more than ever today. Should we cut down the amount to be studied early on? Should we dilute the standards of certification? Or, should we create processes of learning that are more efficient? Should we stop testing? Or create testing that is less stressful and yet more useful? Perhaps not every individual needs to study everything at school? Clearly, a child should be enabled early in his life to access knowledge and learn anything as and when possible, and as and when required. The idea of a learning society has been talked about for quite some time. Today, as never before, it is possible to create mechanisms for learning that go beyond childhood and youth.

There is no doubt that every child has a right to education. But, let us ask ourselves if that means the child should be compelled to go to a place called school for a certain number of hours to learn what is prescribed from only a specific person, or group of persons the society recognises as teachers? I believe open education, which is an alternative system today, should and will become the norm of tomorrow.

Technology Revolution Leads to Change in Structures

I cannot claim a great deal of knowledge of history or economics, but it seems to me that we need to understand the period of the Industrial Revolution, in order to guide ourselves as we undergo change similar in nature, but in a completely different era.

The Industrial Revolution created tools that forced the individual and the fragmented local processes into integrated socialised processes. The composite factories broke down

the total process of manufacture of goods into pieces, and re-integrated it under one roof for commodity production. The scattered villages where the artisans lived depleted or disappeared in favour of larger and complex industrial centres. The railways, the composite factories, and the assembly lines are representatives of the Industrial Revolution in many ways. While it democratised certain societies and revolutionised their production, the political and economic history of domination, exploitation and colonisation continued. It became stronger until a whole wave of freedom movements, social reform movements and socialist revolutions started challenging domination at all levels around the world. It is easy to criticise the failed revolutions, but their historical role in pushing the cause of greater freedom for mankind just cannot be ignored. It is a historical fact that mighty empires were defeated around the world.

Until the Industrial Revolution, knowledge transfer was largely individualised, decentralised, local and scattered just like the production process. Yet, knowledge of powerful economic tools beginning in ancient times with fire, animal husbandry, the plow, fibres, metals and alloys, weapons, fuels and currency transferred from society to society separated by thousands of miles. Knowledge that disappeared in one declining society suddenly appeared in another after centuries and flourished.

The process of education too became more organised into systems over a period of time. The changes mirrored all other changes that were happening in the society. With systematisation came standardisation. Variety and diversity lost out to uniform education because the new model was clearly more suitable to educate the masses to be able to participate in the changing economic and social life. The education system also carried the mass-production stamp of the era.

Before the printing press, transfer of knowledge and ideas required transportation of people from one place to another, or at least a person to person contact. The press not only made mass transfer of knowledge possible, but it also limited the requirement of knowledge seekers moving from one place to another for the first time. It also made access to knowledge possible for anyone who could afford and read books. Later, public libraries were created in large numbers to open doors of knowledge further. Knowledge could now be available at a person's doorstep, but availability of those who can deliver knowledge effectively was limiting. The new era created a need for a professional teacher and the need for teacher training. A specialist was born for school education. Interestingly, for tertiary education, a similar need for training how to teach was apparently never felt.

Until the technology to make paper and print affordably was created, the true potential of printing was not realised. New printing abilities made literacy and education on large scale possible in Europe, and growing literacy helped printing more books. Libraries, learning societies and other forms supportive of learning arose

outside schools and universities. This, in turn, along with widespread need for skilled and knowledgeable people, led to transformation of Europe from illiterate to educated societies over a century.

The role played by supporting structures cannot be ignored in India where we seem to concentrate on opening schools and appointing teachers. It is said that it takes a whole village to educate a child. But, the school shuts out all the village resources which can help. Teachers and textbooks make education. Why should we not systematically have village artisans, farmers, poets, musicians come to school as guest teachers for a payment? It will cause less than a monthly salary of one teacher.

Children working alongside their parents in farms had been going on for ages. But, some of the new industries used this old tradition for inhuman exploitation of children. For a long period, this was also justified as apprenticeship. *Zari* sweatshop owners in India, and possibly other urban child labour users, routinely use the term *hunar sikhana and shagirdi* to justify child labour. Many middle-class homes feel good that they bring an underprivileged child from the village to look after their own children, or to do odd jobs while they attend night schools or nothing at all. Of course, the children of upper and middle classes are not subjected to this. The European society too had dual norms for the poor and the rich. It took almost a century to create a new social norm of keeping all children away from exploitative labour. The example of Sunday schools shows that initially the need to educate the children of the poor was felt by philanthropists, but they continued working during the week. Later, as setting up of regular schools became possible, the idea of banning child labour grew and became universally acceptable. In fact, children working for wages gradually became socially unacceptable. A whole new concept of the child and childhood took shape.

Creation and evolution of schools happened along with the changes in the society but not without conscious intervention of social and political thinkers all over Europe. The social movements for education developed the thinking about education that shaped policies.

We need to recognise that social movements are necessary to improve education.

In Indian history too we find that every social reformer and political thinker promoted widespread education. In fact, under Gandhiji's leadership, people dedicated to the education of the masses started schools in whatever way they could during freedom movement. Many of these contributed to the development of education sector in a big way in post-independence India.

However, as governments took charge of school education, it became bureaucratised. This is true not only in India but almost in every country including the developed ones. Central controls became dominant over the core of education that has to do with the individual interaction of the

educator and the learner. Today, there are attempts being made to bring constructivist pedagogy in our schools. But, if the model itself is that of mass production with central controls that undermine the autonomy of the school and the teacher, how can we expect it to become sensitive to the creative aspects of education? On the other hand, given that there is a shortage of trained teachers capable of being good and responsible educators, the tendency of not giving freedom and autonomy seems justified.

It seems to me that there is recognition that decentralised autonomous schools that allow creative freedom to teachers are necessary for good education. At the same time we are slaves to the habit of centralisation. The justification of centralisation and controlling is that if the schools are not controlled, many things can go wrong. It is a justification that cannot be ignored.

The habit of concentration and centralisation was born in a period when there were few educated people. Education must necessarily need greater democratisation and decentralisation of power.

This is why reform is necessary. Simply expanding the system and then attempting to improve it will not do. Vested interests are not always of the exploitative villains. Sometimes, these are interests of old ways of thinking justified by prevailing circumstances.

As the American educationist I referred to said, our basic model of schools has not changed, and it is time that it undergoes change to reflect the social and economic transformation that is underway, thanks to the new technology.

The New Technology

Mass production in big manufacturing units and mass transport on rails or in steamships symbolise the Industrial Revolution. I like to think that this was largely the era of centralisation of everything, and mechanisation and socialisation of human activities that were largely individual or were at the most conducted in small units until then. It was also an era of order and organisation. The order helped, but it was in direct conflict with individual freedom and spontaneity. Various authoritarian ideologies and societies arose which openly curbed individual freedom and justified their actions as being good for the society. I think this was also a product and reflection of the change in the economy. This era created democratic nations in place of kingdoms in Europe, but the strength and the hunger for concentrated power and exploitation continued. The tendency to enslave and dominate colonies grew worse in direct conflict with the new nations' internal governance philosophies. By the end of the nineteenth century, a revolt against empires and colonial rules began to brew world over. As the empires fought to share the colonies, the colonies saw revolutions and freedom movements. In early twentieth century the Ford assembly line was born in which the domination of the machine over man was complete, but it was also a great landmark on how to improve productivity of human endeavour so that many more people experience greater freedom.

It seems to me that the model of a school was perfected in keeping with the mass approach and centralisation principles. It spread to the colonies too. It was effective for its purpose.

Automobiles, aeroplanes, telegraph and telephones followed by radio and television created a new world altogether in the post-World War II era. There are good technological reasons, I suppose, why automobiles and aeroplanes could not become commercially viable before the railways. But these developments also represent greater individual freedom, which began to spread. New nations were born out of the former colonies and began to find their feet. For the first time, a major power called the socialist countries stood in opposition to the colonisers. Man's quest of unlimited energy led us to weapons of mass destruction that threatened the destruction of humanity if used. This in a way was the expression of extreme concentration of power and what it can do.

The concentration of power came directly in conflict with humanity and every individual in it.

The post-World War II era gave birth to the era of satellites. Rocketry had been growing for armies. It became applicable in the commercial domain. Since we are meeting in Mysore, it is appropriate to recall that Haider Ali and Tipu Sultan, both rulers of Mysore are credited with the development of solid fuel rocketry, which the British took to England after Tipu's death in 1799, and developed it further. It took us another hundred and fifty years to set up our own rocketry programme.

The idea of using mechanical devices to calculate is over 2,000 years old. Programming machines to compute or to perform pre-determined tasks began in the nineteenth century. But, in the 1970s when personal computers made their appearance and computers got linked with satellites for communication, a total new era began to explode and it is still exploding.

We have seen a single channel black and white television, being replaced by colour television. Now we have direct-to-home devices for a price. Those who control the satellites control the waves and the costs. Although you can have many channels for a price, the content comes in a chronological order. You can flip channels but the programming is decided by the channel owners supposedly based on what viewers like.

The personal computer and now the internet have broken the bottlenecks and linearity of access rules.

The difference between the school and the library is that one provides free but structured and controlled learning while the other provides free access to knowledge that is stored. The computer, and its extension, the internet are nothing but an unlimited library. The possibilities of access to knowledge are only limited by how much content is uploaded on the internet and the speed of your internet connection. Efforts to set a price for the general content have never succeeded. A huge body of knowledge is available for free, and it is growing.

I do not want to go into a long discussion on the virtues of the internet, but it is interesting to note that while the desire to make a profit

out of knowledge is strong, there is another growing tendency to pass on knowledge at no cost. We have already seen two massively rich people, Bill Gates and Warren Buffet, declaring that all their wealth will be given away to not-for-profit work to improve life on earth. They are appealing to others like them to do the same. New models have come up led by Google, where content is available for free but the revenue to Google comes from advertising. In many ways, your newspaper also does the same thing. The token one rupee you pay is not where the profit comes from, it is the advertising.

There are two major examples of knowledge and content becoming available for free. One through cooperative efforts and one through individual efforts. Wikipedia is the cooperative effort example where someone uploads some content and a host of others add, edit and comment. The readers are also warned that the content is not authenticated but it is available if you want to edit it. There were about 1.2 million contributors to this free encyclopaedia worldwide in September 2010. These are people who have written or edited at least ten times since they joined the cooperative effort. Out of these half are in English language. The Indian language contributors are in Hindi, Tamil, Marathi, Bengali and are under five hundred in a descending order.

Why can we not create our own language Wikipedia? Or, should we finally decide that all knowledge will be and should be available freely only in English. This is an obstacle that we can overcome.

The second and most recent example is the Khan Academy, which is directly related to what possibilities are opened by the internet for learning. A young man called Salman Khan, born in the US in 1977 of Bengali parents from Bangladesh and India, started teaching his cousin over the internet and soon made his lessons available on the internet, on You Tube, free of cost. Today, his Khan Academy, which is a freely available library of lessons in math, science and history, is accessed around the world free of cost. The website says over 13 million lessons have been delivered so far. Now a project to translate the courses in a variety of languages has been undertaken. It is expected that the Khan Academy will keep on growing.

There are some obvious limitations to this access today, but let us not forget that when Rajiv Gandhi spoke of a computer revolution in mid-80s, many laughed at him. Let us not forget that we thought cell phones were expensive ten years ago and today more than 60 per cent Indian households have them. The services provided over cell phone now include short lessons, examinations and so on.

The interesting thing is that this huge body of knowledge is available freely and free of cost. Anyone who has an understanding of basic reading and math can start anywhere and end up wherever his quest takes him. It is copyright to those who want to give it free of cost. That means no one can restrict this knowledge flow by using it for profit or revenues. If you want to give it to others, you must give it free.

Who would have thought that in the middle of a world full of greed and scams this would become possible? But, I learnt from Karl Marx that the world progresses in dialectical ways. Every process has internal contradictions that lead to the end of the old and the birth of the new and although history seems to repeat itself, the motion is not just circular, it is helical as human society goes to higher levels with every turn.

Learning has come a full circle from being individual, diverse, varied and dispersed in small units for a few. It went to a mass and organised model in keeping with the times. Now, in the era of personal freedom, is mass education not possible in individual, diverse, creative and dispersed mode?

Why do we need centrally structured syllabi? Why schools and colleges in their current form? This is not a rhetorical question. It is a serious question.

The question perhaps should be what sort of institutions of learning do we need? It is time to redefine our institutions of education, at least after a child has learned to read and write. The world is going to change. Let us not doubt that. The question is how we are going to change with it.

Let us Imagine

I imagine that about 5-10 per cent educated and skilled people who have occupations other than teaching will decide to set aside time to teach children. Some will do it daily, others weekly; some will find a couple of months a year — and their employers will give them leave — to teach children and youth. Teaching others what we know will become a common social activity. This will provide the key resource for teaching in future. In some countries people are required to do a military duty, in ours it will be considered an important social obligation to teach children. Some youth who are pursuing higher studies will be required to do this voluntary work.

I have seen a government school in Bihar, where educated people of the village take turns to teach the children. This is not as difficult as it sounds.

The school will be more like a library where in one area the tiny tots will play and learn to read, write, estimate, learn about shapes, and build little things with their own hands. They will have a teacher who cares and knows their lives individually. By the time they are eight, they will all learn to read, understand and ask questions. They will have plenty of books with nice pictures all in their mother tongue but they will also learn a bit of English. There will be no standards, and it will all be one continuum and children will leave this continuum after they have learned basics of reading and writing. They will have audio-visual devices on which they can play whatever videos they want but there will be a full time teacher and a local volunteer who will help them make different choices and show them what is available.

There are multi-year, multi-grade, multi-level classes today in our schools. All we need is breaking away from the textbooks and grades, and focus on basic reading, writing, thinking, speaking, working with hands, and

understanding of quantities, shapes and patterns. They will learn to use the computer and the internet, with adequate safety measures.

The cost of equipment required will be less than the salary of a teacher within the next five years. But, it will be important to appoint only teachers who know how to do the job, and the volunteers will help.

The children in the 8-12 age groups will be mentored by a group of local volunteer teachers who will show them how things work, and help them work with their hands. They will come for a few hours to the school—a library with multi-media access to junior Khan Academy—like content and the net under the guidance of a learning manager. They will design projects and execute them. They will read books, either on the computers or in hard copies and learn to discuss what they have read.

They will go to educated men and women in their community to learn about poetry, math, science, history or whatever they choose, and supplement their interaction with what they have in the library. Perhaps some will prefer to spend time with the local potter or the carpenter. Remember, educated and skilled people will have volunteered time to teach. They will also be prepared to teach.

There will be sports, athletics and arts clubs which will be mandatory to attend for children. They may choose what they want to learn but teachers of athletics, sports and arts including fine arts and performing arts will be available on a per pupil payment. A village drummer can be a teacher and so can village painters, or a kabaddi player or a wrestler. They will spot talent and recommend them to higher skill trainers.

In urban India today, there are many projects working where educated young people give time to teach children. As the level of education rises, this trend will grow but it needs to be harnessed with viable mechanisms. The society — not the government alone — needs to accept this. There is an upsurge of interest in arts, athletics and sports. The number of people skilled in these is growing.

For children above 12, there will be recognised master educators or master skill trainers who will be licensed to teach children in subjects. Lessons will be available in video and audio archives for children to see. The children will work on subjects or topics of their interest and go in depth in subjects or topics of their choice with the help of these master educators who themselves will be well-versed in the subjects. They may have other jobs, but an accountant could certainly teach history if he gets a master educator qualification to teach history.

Children will be able to appear for any examination any time of the year. Different organisations will offer examinations on different specialised subjects. For example, a Science Society, or a Geography Society can conduct certificate examinations on any topics of science.

Online examinations with broadband facilities are already available. It is possible for a student to sit face to face with the examiner on camera and be interviewed. There

will be no monopoly of a single Board. Schools will not be affiliated to any Boards. A village student will be able to appear for elite examinations if he wishes to. Anyone above 14 will be able to join a tertiary education programme. Background is no barrier.

I recently met a renowned French architect who was a carpenter. In the course of his work he was mentored by an architect. Without going through a university, he is now an established architect who loves to design and make furniture with his own hands.

Some years ago an auto-rickshaw driver who had barely completed 4th Standard joined a computer training centre of *Pratham*. Something clicked inside him and he accelerated to complete his 10th Standard and B.A. through open schooling. Today, he is a supervisor on a project of the municipal corporation, and a distance education student of MSW.

Colleges will be improved socialisation, cultural and sports centres. That is what they are today anyway minus the sports. They will have plenty of taped lectures and demonstrations by expert professors. Students who want to access tertiary education will plan their work, submit their work plan, and apply to appear for various examinations. They will be appointed apprentices in an area connected with their study as they learn.

Professors will give time to meet students in groups and individually to be paid for these consultations. Class attendance will not be compulsory. When a Professor is lecturing, his lectures will be telecast live on the internet and also made available in archives for students to access.

I have let my imagination go. But, obviously it has not gone wild enough because I am a product of my times trying to get outside my box.

The economic aspects of this whole idea cannot be worked out now. I am just relying on the fact that more and more knowledge is becoming freely available free of cost. Of course, funds will be needed. But why let mundane matters come in way of some healthy dreaming? Once these processes are set in motion, if they are useful, the society finds the resources. History gives us enough evidence of this.

It may take a century, it may happen in decades. I believe it will happen.