NEW ACADEMIC STRUCTURES

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INTRODUCTION :

Any Technology consists of : 1) an apparatus -- the device of technical performance, 2) the technique --which consists of the human activities characterised by rational step-by-step approach, and 3) the organisation - the social arrangements of technical form.

Technology is changing fast every moment. This dynamism is reflected through the economic front where the relationship between the consumer and the producer has also been changing over the time.

With the explosion of information in all fields of human endeavour, what is needed is "the compression of knowledge" which calls for a thoughtful integration of different disciplines. This process can be compared to a process in Thermodynamics namely the irreversible supersonic flow through a convergent - divergent nozzle. The first phase is a convergent process involving integration of different disciplines resulting in a high-potential technology, followed by a divergent expansion resulting in a differentiation of new set of functions which can be integrated at some later stage. This latter phase of differentiation makes the horizon broad resulting in or leading to permeation of Technology in all walks of our human endeavour and opening new vistas of technological advancement for future integration. This is the process of "Integral Technology"

Any new technology like space systems, artificial intelligence, genetic engineering, etc. involves differentiation - a step of analysing a given system for proper assimilation of knowledge into a specialised set of functions which can be integrated at some later stage.

It is very much true that this process of interration - differentiation of Intergral Technology should pass the tests - ecological, social economic and strategic so that our human society can usher in a just, social and economic order leading to a better quality of life and an ecological balance all over the world.

The important question now is who is to bring about intergration of technologies, this "Compression of Knowledge" and the differentiation in the second phase. The answer to this question to my mind, lies in the restructuring of our educational institutions of higher learning backed by a suitable enlightened governmental policy.

We find that in all the technologically advanced countries, it is a sound educational system that is at the root of all the technological advancement. This system also includes the basic and applied research in the field of scientific knowledge which ultimately leads to innovation of new technologies and their subsequent intergration. The institutions of higher learning and the universities in these countries like the USA, the UK, Germany and Japan have been playing a very effective and vital role in technological advancement, enabling these countries to keep abreast of others and to enjoy the benefits of leadership in these technological areas. Hence, if India is to enter the 21st century as an equal partner with others not

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simply as a consumer but also as a producer, it is imperative that it first evolves a sound educational system which can serve as a tool for performing the functions of an Integral Technology.

This brings us to the "State of the Art" in the field of Education in our country, its strengths and weaknesses and the need to reshape it. It is outside the scope of this paper to delve deep into this vast field of education and analyse its problems and suggest remedies for its malaise. The Radhakrishnan Commission and the Kothari Commission have made detailed in-depth studies and have made certain recommendations.

However, it is a matter of regret that Education has received very low priority in our successive 5-year plans. It is only in the 6th plan the allocation was 2.7 % (Rs. 2976 crores) and 3.5 % in the 7th plan (Rs. 6382 crores) whereas the needed inputs are several times greater. Sooner our policy makers realise the importance of a sound educational system, better it will be for the country to launch into the 21st century.

The Present Scenario :

Education has expanded manifold since the time of our independance. Efforts have, no doubt, been made to take the education to the vast multitudes of our population living mostly in our villages and small towns. We literally need an army of primary school teachers (1 to 2 m) to teach in our primary schools. Most of these schools are ill-equipped. They do not have school buildings, black boards, furniture, trained teachers and so on. The problem of primary education alone is stupendous, but it is of great importance since a sound primary education is the foundation for the secondary and higher education. Further, more than merely imparting knowledge in the three 'R's, inculcaltion of high ideals and values of life like honesty, sincerity, hardwork & love for the country is of utmost importance at this stage.

The problem of Primary Education is going to be further aggravated with the new drive for literacy in the country. The National Policy on Education of 1986 lays great emphasis on equality of educational opportunities for all. With complusory primary education and the growth of literacy percentage beyond the present 52%, the demand for more primary schools and other educational institutions is bound to grow. We will have to cope up with the problems of both the quantity and quality of education at all levels - primary, secondary and higher education. There are any number of serious and compelling problems at all levels of education. It is not the purpose of this paper to discuss them here. However, since higher education is closely linked with Integral Technology, a mention of some of the problems being faced by higher education in the country may be relevant here. Some of them are - 1. Lack of infrastructural facilities, 2. Curriculum development, 3. Teacher training, 4. Teacher motivation and accountability, 5. Countinuing Education, 6, Student indiscipline, 7. Examination reforms, and 8. Administrative Reforms. Each one of these is of stupendous and complex nature by itself.

However, it is gratifying to note that our higher educational system especially the Undergraduate system which was static for a long time before independence has made considerable headway in the above areas, although much more needs to be done. For example, the UGC identifies colleges and gives munificient grants for improving the infrastructural facilities like laboratories, libraries etc. Considerable changes in curriculum in various faculties have taken place to update them in keeping with the advances in Science and Technology. Facilities for teacher training like studying for M.Phil., Ph.D. and other post - graduate

courses are being offered for the teachers. Countinuing education programmes like short term courses, refresher courses, seminars summer and winter schools are being arranged for the benefit of the teachers.

However, our examination system and the administrative system have remained inadequate and ineffective to check the deteriorating standards in education, inspite of all the above- mentioned facilities. Our educational system is still examination-oriented and not knowledge-oriented because of various economic and social factors like lack of opportunities, unemployment etc. Even the problem of student indiscipline can be traced to some of these factors.

Since no educational system can function in isolation from its environs, the problems of corruption, nepotism, favouritism etc. which are so rampant in our present-day society are reflected in our educational system as well. The failure of the examination reforms like the semester system of examination and continuous internal assessment introduced in some disciplines in most of the universities and colleges is there for all to see. Some unprincipled, unethical and highly commercialised private managements enjoying political clout wield very unhealthy but considerable influence in the various bodies of the universities. At the same time we can also see that in the case of good managements effective solutions to many of the above problems can be found. Thus, a good management -- varible and flexible and with a social commitment to give good education - not necessarily free or subsidised, is a very vital function in the process of differentiation-integration transformation. How then can these managements - both private and government, which form one of the important components of Technology be geared to bring about the much needed transformation in our educational scenario ?

The Federal or the affiliating structure :

We have inherited the federal or the affiliating structure of our universities from the British. Although the British themselves have discarded this system long ago and have gone ahead to adopt the unitary structure, we are still clinging on to this outmoded system like leeches and have yet to show courage to discard it for the better one.

A handful of a few thousand British officers controlled the gigantic administrative machinery of this vast country before our independence.

The vast manpower needed to execute the policies of our overseas masters had to be ' native' in character. Macaulay knew that training the local Indians for running the alien British administration would, one day, lead to the clamour for independence, but yet had to bow to the dictates of circumstance. Many educational institutions were started by the British in different parts of the country, but their educational policies and administrative control remained in the hands of the British who headed these institutions. The affiliation of various colleges to one central university was the natural outcome of this policy, resulting in a centralised inflexible authority.

What is distressing to see is that we are still perpetuating this affilliating system by opening more and more of the affiliating type of universities. The Bangalore University has more than 300 colleges affiliated to it ! What kind of control can such a University exercise in the conduct of its affairs, examinations and evaluation ?

The private managements running these affiliated college have taken full advantage of the drawbacks of this system. Many of them are openly indulging in all kinds of malpractices in examinations and

evaluation of answer books by their staff. This is happening because there is no accountability on the part of these managements. It is the University which awards the degrees. These managements want the credibility of a degree of a statutory recognised university for their students, without discharging their own responsibilities on proper lines.

What is needed, therefore, is that these managements/organisations should concentrate on the more important role of developing a proper work culture on their campuses and become centres of excellence for the differentiation-integration transformation which is their rightful role to play. The universities and the Government which funds them, on their part, should concentrate on the more important matters of laying down innovative policies of education and overseeing their implementation rather than wasting their time on conducting the examination and their concommitant policing functions.

To quote from the theme paper of an educationist in Technical Education,- "To be innovative in the Technology front, the management and organisation has therefore to be flexible. The task is to transform a highly mechanistic structure to a more responsive organic enterprise.....by transfer of more power, through responsibility, to lower level of the conventional managements and workforce hierarchy, yet maintainig the organisational intergrity".

How then can such a transformation take place ?

The Unitary Structure :

Such a transformation can be brought about by adopting some of the following steps :

1. The present affiliating system of colleges should be scrapped wholesale, though gradually.
2. The existing universities should be converted into Acceditation Boards though smaller in number -- may be one for each State, for giving accreditation to the aspiring colleges and to oversee the implementation of the national policies on Education.
3. Each educational institution of higher learning should be free to frame its own syllabi, develop its own curriculum, conduct its own examination and award its own degrees, and be self-funding. The government institutions also should be run on the same lines. The concept of complete autonomy is inherent in this system.

This will not only, decentralise the examination and evaluation systems but also bring accountability on the part of the managements running such institutions.

Apprehension may be expressed in some quarters that this may result in indiscriminate awards of all kinds of degrees without any check on the managements. We should not forget that the built- in factor of accountability to the society will work as a deterrant in this case.

1. The discredit for the award of a degree to a to a student who is academically very poor goes to the university at present, instead of the management, because of the nebulous nature of the award of the degree. With autonomy, the management will have to face the criticism of the society. In a very short time the society will come to know the sub-standard degree awarded by unethical and poor managements and will reject their graduates. Either the management will try to improve its performance or will be forced out of the field of education..
2. Since the management will be generating its own funds, it will have to utilise them properly to maintain and

improve the quality of education, instead of syphoning the funds off into other areas, lest it may not obtain, or lose the acceditation of the Board.

3. The management will be free to identify the areas of new and emerging technologies, frame its own syllabi, and appoint its own teachers, conduct its own examination and award its own degrees.

Any malpractice by the management will boomerang on itself by the ultimate rejection of it by the society.

What applies to the educational institutions will also apply to the insitutions of basic and applied research, and a progressive management can very often combine both these activities under one umbrella.

Conclusion :

We find that this kind of a unitary structure has been successfully working in all the developed countries like the USA, the UK, Germany, Japan and others. This system has been able to bring about the "transformation of a mechanistic structure into a more responsive organnic enterprise".

In our country, it is only the I.I.T.s at present which fil into this model. Some states have given autonomy to some well deserving colleges in their respective states. but with the concerned universities retaining the power and control to award the degrees. In Karnataka also the Karnataka State Inter- University Board is constituted to grant autonomy for selected colleges.

Many academicians are bound to utter a word of caution in handing over the destinies of our educational system from the government controlled universities to private managements. If the USSR has realised the futility of rigid control of its social order and is prepared to decentralise power and go in for a market economy, and when our own Indian Government has liberalised its industrial policies and allowed the private sector to play a much bigger role in its national affairs, it is all the more necessary to liberalise our educational system where innovation and transformation of technologies are involved, more so when the unitary system has been successfully time-tested and is in vogue in many leading countries of the world.

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