

TECH. EDUCATION - WHO SHOULD CONTROL ?

★ B.M.Naik

SYNOPSIS

World experience tells us, that, now the economic and industrial competitiveness of a nation, depends on scientific and technological capability of engineers entering the work force. With the liberalization and globalization, now industries are increasingly realising that fantastic opportunities are, being opened up for trade and commerce, but to harness the same competent technical manpower is simply not available and on account of which the golden opportunities are being missed. The Ministry of Industry, Government of India, therefore would have to show concern and possibly take on itself from the Ministry of Human Resource Development, the planning and control of technical education for it holds the key to industrial progress. Today, technical education under MHRD is not only poorly funded but it has many structural weaknesses. The research and development is segregated from teaching, on account of which the technical education in India is misdirected. The paper argues for a strategic change in the management of technical education at centre and state levels. It ought to be delinked from Ministry of Human Resource Development and connected to the Ministry of Industry, like the Agriculture education and Medical education connected to the Ministry of Agriculture and Ministry of Health, respectively.

INTRODUCTION

Why agriculture education and agriculture research in India are not funded by education ministry, but by agriculture ministry ? Is it because the agriculture ministry which is responsible for increasing food production considers it necessary to maintain a balance in funding for both the agriculture production and agriculture education ? It is said that maintaining this balance between the two would have been difficult, if the agriculture education was funded through the education ministry. Not only that this would have led to the lack of fit resulting into misdirection and irrelevance in education, and research rendering the total investment in agriculture sector less productive. The strategy of funding agriculture universities by agriculture

ministry has worked well and helped to raise food production from 50 M.T. to 200 M.T. Had the Government not done this, India would have certainly experienced shortage of food and people starved.

Secondly, the Medical education and Medical research in India, are conducted in Medical colleges and in hospitals attached to them. A professor who teaches, also does research with students involvement, in research hospital attached to college. As a result, the research is applied to teaching and hence teaching is upto date, and relevant to needs. This is possible mainly because of proper coordination between teaching, research and hospital services which are under the administrative control of one and only one agency, namely, the Ministry of Health.

The goals and targets before health

ministry are also the goals before education and research. The common goal binds them together to behave as one team. This is one of the main reasons why Medical Education is under Health Ministry and not under Education Ministry.

With the same logic, now if the nation is keen on increasing the industrial production, and harnessing new technologies to raise the industrial competitiveness to greater heights, it will have to provide matching funds for engineering education and research, which constitutes a vital infrastructure for industry. Now, increasing industrial output is not possible by the efforts of industry alone, but necessarily needs supplementary efforts by academicians and research scientists. This is so especially because of the increased influence of new knowledge and new technology on industrial production. It is firmly believed that only these nations which successfully make a fusion of efforts of industry and institutes in the cause of education, research and training are likely to win in the world economy. Others, regardless of their richness in raw materials, are less likely to succeed.

Grant of matching funds to engineering education/research institutes alone is not enough. Identification of most relevant projects for research, and using the findings in designing job oriented diversified courses and conducting them in an effective way is yet another vital aspect which can not be properly taken care of, unless the engineering education is directly funded and supervised by the ministry of industry. The ministry of education is found to have segregated the institutes from industry, weakening both, and therefore removing this middle man agency, is necessary.

Industrial competitiveness, and quality of engineering education, these two things are interdependant. One can not exist and can not prosper without the aid of other.

Industry ministry, therefore, in its own interest, like agriculture ministry, should choose to supervise and provide funds to institutes of engineering education. A holistic approach in budgeting for education/research and developing industrial plans and programmes is the pressing need of time.

The Government of India have constituted by the act of parliament, the All India Council of Technical Education, a statutory body to plan and regulate the technical education. It is a welcome step. But to make it functional, it is suggested that it should be made accountable to the ministry of industry and not the Ministry of Human Resource Development.

WHAT IS GOING WRONG :

In the absence of which, following undesirable and avoidable things are happening. Presently, the funds allocated to education and research are far too few vis-a-vis industrial production. As a result, it is seen that the best of brains taking admission to engineering courses due to illequipped colleges are not allowed to grow to the level, they are capable of. They remain dwarf and industries are supplied with less qualified people, who have less of capability by world standards in scientific and technological fields. No wonder, if the capacity utilization of capital projects remains low, they become sick, and investment made in them is not paid back. The projects become a liability instead of becoming an asset. It is said, reduced investment of of Rupee one on engineering education renders investment of Rs. One thousand in industry idle. This is a very big invisible loss which Indian economy is incurring due to poor funding and misdirection of engineering education.

Also, there is a mismatch between the skills needed by industry and skills supplied by colleges. What is wanted, in industry, is not taught and all that is taught, is not wanted.

So also, what is needed is not researched and what is researched remains unused. As a result, while on one hand many engineers are unemployed, on other hand, engineers of required quality and competency are not available. Most of the institutes except IITs and RECs have become only teaching shops, without any research, and hence education has become irrelevant.

The education ministry which is busy, rightly so, with primary, secondary education is insensitive and cannot cope with the fast changing skilled manpower required in industry. It is found to continue allocating funds to old outdated courses, which lead students nowhere, and for new courses like electronics, computer, energy, space etc. it has no money. It does not and cannot, have proper perspective of engineering education and as a result the golden opportunities in domestic and world markets are being lost.

The education ministry and in turn the universities for obvious reasons, do not, and cannot have realization for the need of various diversified courses and high quality research. Their impact on economy can not be judged by education ministry as best by the Ministry of Industry. The Ministry of Industry, which has been preparing the plans for industrial development stands on better footing in this respect. For example, in computer education, the universities and colleges have been dull to the huge market demand of computer professionals and consequently a large number of private institutes have mushroomed in India, and Department of Electronics although it is not its job, due to incapacity of universities, have to do accreditation of their courses. This deficiency in education system has led to privatization and commercialization of engineering education, with the result that the quality of education has deteriorated, youths exploited. This has adversely affected the Indian Industrial competitiveness. Had the ministry of industry controlled the engineering

education, there was more likelihood of the computer courses being funded, designed and offered, well in time, according to the needs of development plans.

In a seminar held recently in Bombay, a industrialist who is running a petrochemical industry (1500 crores) in Raigad District, said the development plans of technical education are going in another way. Industry is not getting the type of engineers it needs, while engineering graduates coming out from colleges remain unemployed. His industry thought of even starting a college by investing 50 crores, but the education department is not able to put even 5 crores. This is due largely to lack of proper perception on the part of education department.

In this regard, it is also interesting to note views of Professor Trevor Cole of Sydney university, who in a seminar on industry institute interaction, lamented about poor funding to engineering courses in Australia by the ministry of education. He and the vice-chancellor of Cape Town University, in the seminar said we can expand engineering courses and make them better on the condition that the funds for growth of engineering courses should not come through the education ministry but directly to us from the ministry of trade and industry. This shows that the role played by ministry of education in the conduct of engineering courses even in other countries, is ineffective.

HOW CAN IT BE CORRECTED :

It is felt that the industries, their associations, and engineering colleges should have to prevail upon the government, without any loss of time, to bring about the strategic changes and reorganise the funding pattern and bring about restructuring of engineering education. Industry can not remain a silent spectator, as in the past, but should actively contribute to improve quality of engineers.

The academic institutes to industry are,

like an engine to an automobile. The engine gives power to automobile to move forward. So also the academic institutes are legitimately meant to provide driving force to economy. However, the present institutes which are underfed due to lack of strength and misdirection can not drive the overfed bulky industry forward as fast as expected.

The C.S.I.R. laboratories which are funded by the ministry of industry are today diversified from the institutes of engineering education. The infrastructure of CSIR labs is not available to young students and young enthusiastic students are not available to the CSIR labs, cutting down each others effectiveness. This can be avoided, if ministry of industry through CSIR takes over the supervision of the institutes for engineering education.

The present day universities, which are controlling engineering courses, lack the vision to assess the speed and direction of industrial growth. They are too busy in routine old things, and have almost a total disregard to new technologies and opportunities arising therefrom. It is a loose coupling like a belt drive between the Technical Education Institutes and industry, while the present need is of close coupling, like a gear drive.

CONCLUSION :

Both the industry and institutes in India, in this time of dynamic economy and fast

changing technology, fully realise the need and importance of close collaboration with each other. But unfortunately they are segregated, by the ministry of education. As a result, the productivity of both the institute and industry is adversely affected.

If the situation is to be corrected, and New Industrial Policy implemented in letter and spirit, the industry and institutes have to have a common goal and target for which strategic changes in organisation structure would have to be effected forthwith. Industry Ministry will have to show concern for the quality and quantity of engineering education and take it upon itself, and delink it from education ministry. Then it will be able to set the direction of courses right, introduce many more new courses, start technical universities. Without this reorganisation industrial production in India, inspite of liberal Industrial Policy (1993) can not hope to reach to targetted level.

The paper strongly recommends adoption of holistic approach in budgeting for industry and for engineering education and research. It suggests that the "All India Council of Technical Education" be made accountable to the C.S.I.R.

Ministry of Industry, otherwise, it is likely to become dysfunctional.