TRAINING NEEDS IN DEVELOPING COUNTRIES-AN INDIAN EXPERIENCE

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[A reprint from the proceedings of The International Conference on "Management Masters" held at Goldcoast, Queansland, Australia in June 1995, Punblished by NCVER, Australia.]

- Editor

1.0 INTRODUCTION

It is interesting to observe that a more appropriate word "Human Development" is not normally used against market launched word "Human Resource Development". The bone of contention is that resource always belongs to somebody or some organization and that it is always meant for exploitation for its transformation and use. Thus, the moot question is that to whom does "Human Resource of a Country" belong ? Because, under the New Economic World System (NEWS) no country in the world today is that isolated, and that indeed is a news ! Thus, while the word HD stands for the development of the quality of life of the people of a country, HRD refers to much more market-force oriented interests. It is also true that active forces of the market are highly non-uniform in the developed, developing and under developed countries : a classification which clearly depends on the quality of productive life of the people of a country. According to Ishikawa, the quality of life depends upon the six factors viz., knowledge, skill, attitude, environment, organizational resource and society of a country. All of these are also factors of the productive power or productivity of the country. The productivity again depends upon the notions of a finite environment or an infinite environment of a country vis-a-vis of the world. We may add with Ishikawa that 'want of life' is also a predominating factor in determining the quality of life of the people of a country. By lowering the 'want of life' higher quality of life is achievable, as it can be seen happening in many developing countries today. It may also be pointed out that a well defined, well balanced want of life of the people of a developing country will bring a check on otherwise spurting market needs and market forces.

Thus, to differentiate between the words developed, developing and under developed countries, one may try to analyses the parameters like (i) industrial growth, (ii) energy consumption, (iii) agro-system, (iv) economy and fiscal policies, (v) educational and training programmes, (vi) health care, (vii) socio-political system, (viii) religion, (ix) caste/cult system, (x) affiliation to different power blocks of the world etc., of the concerned country. Undoubtedly educational and training programme under-

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taken by a country has a pivotal role in such a classification. While it is easy to identify a developed country, identification of developing countries is a much more complex task as these are of many variations and shades. Table below presents a typical example in question. [Source : Eastern Economic Review]

Table - 1 :
Developing Countries

Country	KWH per Capita	KWH per $100 GDP
Singapore	5929	31.21
Hongkong	5326	29.40
South Korea	2896	39.12
Thailand	996	47.09
China	586	226.45
India	282	85.45

All the countries mentioned above are accepted world over as developing countries but the visibility of their development, savings rate of their economy, population and population growth rate etc., are quite different. However, even allowing these differences, inefficiency in its productive process, at least for India, is quite evident as indicated by the high rate of energy consumption of power per unit of the gross domestic product compared to the region. Thus, inadequacy of the technical manpower of a country is also a strong indicator parameter of the differences between developed, developing and under developed countries. Fig. 1 depicts a pictorial representation of technical manpower variations of developed, developing and under developed countries. [Anand and Sharma 1994].

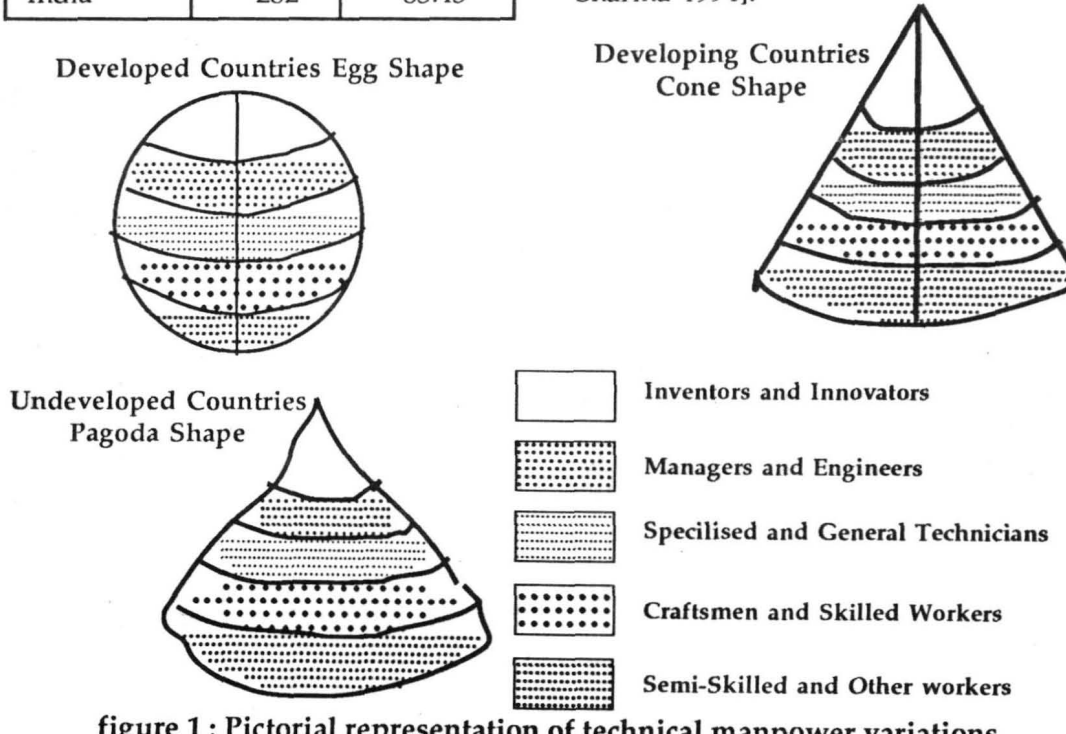

figure 1 : Pictorial representation of technical manpower variations

From the above figure, it is evident that quite an imbalance in the proportion of (i) Inventors and Innovators, (ii) Managers and Engineers, (iii) Specialised and General Technicians, (iv) Craftsmen and Skilled Workers (v) Semi-Skilled and other workers exist in the developed, developing and under developed countries. Despite exponential growth in the communication system world over, these imbalances are growing further and further.

2.0 HUMAN DEVELOPMENT : NEED FOR TRANSFORMATION IN THE LIGHT OF GLOBALIZATION

In the recent past, a number of developing countries in the ASEAN region opened up their protective economy to promote global trade in a highly competitive, quality and reliability conscious international environment. The economic restructuring envisages the abolition of protectionism and control permit procedure, introduction of free market economy, encouraging foreign investments, access to private industries to the core sectors hitherto monopolized by the public sector, gradual abolition of subsidies at all levels of economy. This was rightly foreshadowed by Toffler (1982) through his writings "A new civilization is emerging in our lives, and blind men everywhere are trying to suppress it. This new civilization brings with it new family styles; changed ways of working, loving and living; a new economy; new political conflicts; and beyond all this an altered consciousness as well". This is the consciousness of globalization [Maulik, 1995]

To cope with the multi-faceted implications of economic and industrial restructuring, a variety of human resource possessing diverse capabilities would be needed to ensure the application and integration of emerging technology in the transformation of human capabilities. It is established that emerging technologies will have to be acquired, utilized, diffused, adopted, improved and also developed. For this to happen, it is important that following appropriate capabilities have to be developed [Planning Commission Document, 1993].

- Adoptive Capability :
  This operative capability involves production know-how, production management, production engineering, trouble shooting and maintenance.
- Adaptive Capability :
  This relates to the technical ability to modify existing production process or product design so that the process is better adapted to local factors and the product reflects local market preferences.
- Acquisitive Capability :
  This is the technical capability to acquire technologies which depends on the ability to search for asses and to transfer technologies. Abilities for construction of plants, installation and commissioning and management are also included under this category.
- Innovative Capability :
  This is the strategic ability to anticipate future demands and to develop new designs, processes and technologies, research and

development being the central focal point here.

The capabilities such as above are needed to be available in top, middle supervising and operative levels of manpower involved in the management of industry and shown in Fig. 2 [Anand and Sharma, 1994].

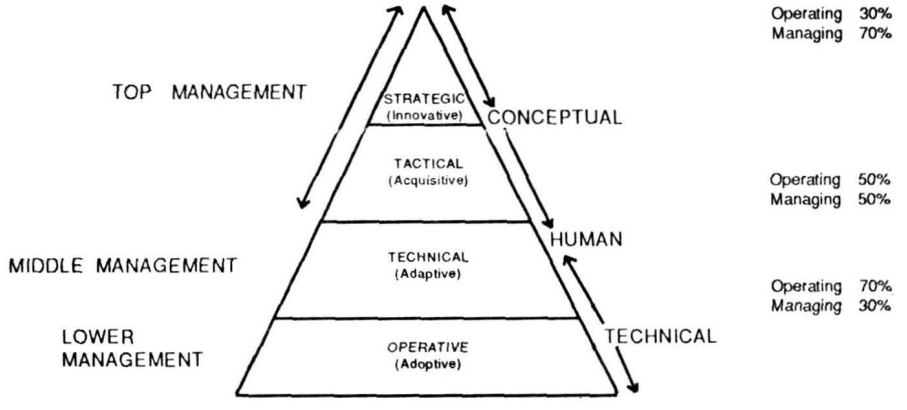

Fig. 2 : Technical and Managerial Manpower cone

Industrial restructuring on the technological dimensions would entail substantial changes in the proportion of different categories of personnel within technical manpower spectrum and the anticipated changes in the technology dimensions would require higher, broadly educated workforce with higher generic skill related to new/emerging technologies. Specific technologies of relevance would need to be identified from time to time.

A precise assessment of needs would be possible only after proper identification of skills to be developed for the human development. This will enable successful restructuring of industry and accomplishment of the socio-economic objectives of the country. Data on manpower structure and profiles could be gathered for conventional technologies for which industries of repute already exist in the country. But the models for needs-assessment in relation to emerging technologies have to be different, even necessitating data collection and interaction with successful ventures in developed countries. However, broad features of the skill spectrum in a dynamic developing industrial sector, are :

- as the industrial base widens so does the requirement for skill base
- there is an increase in the proportion of knowledge workers and the higher order generic skills required by them
- flexible, multiple broad skill is a requirement for permitting easier adjustment to changing job requirement

- learning to learn skill becomes key skill both for the individuals and at the firm levels.

3.0 TRAINING NEEDS : INDIAN OVERVIEW

Socio-economic Background :

In order to boost up industries and improve productivity, India, like many other developing countries, has adopted the policy of globalization. The new policy is expected to create a congenial environment which will lead to setting up of new industries both by foreign and domestic investors. It has been assumed that the open market policy will also compel the existing Indian industries to take steps to modernise their plants and improve productivity so that they can survive in the competitive market. The new industries and modernization of existing industries will invariably use new technology based on micro-electronics and will need technical and vocational personnel with new skill and competence.

During the last few decades of five year plans since independence, developmental programmes have been undertaken in various sectors viz.,

- Agriculture
- Mining
- Power
- Machine tools
- Communication
- Process Industries
- Steel
- Transport
- Coal
- Infrastructure
- Education etc.

In the education sector, though facilities have largely been enlarged, the educational programmes have not been planned in conformity with the occupational structure and manpower needs. As such, the system has produced and is still producing relatively large number of educated urban youth with knowledge and skill base incompatible with the changing industrial needs.

In the rural area, the whole spectrum of education, both formal and non-formal, wear a dismal look. Heavy rate of drop-outs even at the primary level compounded with loss of family vocation due to poor economic conditions have caused large-scale migration from the villages to the urban area.

A need based community development vocational training programme in different trades and crafts for these villagers would enable them to acquire gainful employment specially in the service sector. Thus, there is a need to train personnel to cater to the needs of both organized and unorganized sectors.

3.1 TRAINING NEEDS FOR THE ORGANIZED SECTOR

In India, which is now a member of the new economic world system, major investments are taking place in the state-of-the-art technology of micro-electronics, computer materials informatics, telemetics, robotics, CAD/CAM, communication, office management, home management etc., both by Indian and by foreign companies.

A recent sample study made by Prof. Mittal [1994] reveals that the technician profile would undergo a major shift towards knowledge worker with higher order skills such as,

- cognitive ability
- practical problem-solving abilities
- generic and learning-to-learn skills
- application of information technol ogy and
- managerial capabilities.

The prospective job potential of a technician would likely to be in the area of

- shop floor supervision and man agement
- repair and maintenance
- quality control
- design and drawing
- marketing, sales, personnel and administration
- planning
- research and development.

Keeping this in view, a massive input is being provided under the aegis of the World Bank assisted project for strengthening technician education in India in the three major areas of

- Capacity expansion
- Quality improvement and
- Efficiency improvement.

The project encompasses 19 states with a total outlay of US$ 744 million with a time frame from 1990 to 1998.

It is being envisaged by all concerned that special efforts are needed to upgrade the occupational and professional competencies of the polytechnic faculty, especially in the emerging technological areas through short-term modular courses on a continuing basis. Also, these courses should be credit based and linked to the career development. To achieve this, staff appraisal system should be made obligatory and an integral part of the institutional goal.

The following centres/cells should be set-up in all technical institutions to meet the challenge of global competition

- Curriculum Development cell
- Learning Resources Utilization and/or Development cell
- Staff Development cell
- Industry Institute Interaction cell
- Continuing Education cell
- Management Information cell.

3.2 Training needs for the unorganized sector

While the above restructuring in technical institutions will certainly improve the quality of products and the efficiency of these institutions, no tangible results will accrue unless the socio-economic condition of 75% of 90 million Indian population is improved.

To improve their lot, the buying power of these agro-based rural population must be improved. Technical education and consequent training patterns have significant roles to play in this regard. The technical education system must give major thrust in the unorganized sector both in the rural and semi-urban areas.

To accomplish this objective, skill-based modular programmes, in collaboration with Community Polytechnics, National Open Schooling, National Literacy Mission Panchayats and NGOs may be developed. Intensive short-term training programmes of duration for 6-9 months for the rural and semi-rural

unemployed youth may significantly enhance the employability of these youths in such vocational areas as

- Repair/servicing of auto-vehicles, auto-cycles etc.
- Repair/servicing of entertainment electronics equipment
- Dress making
- Servicing/repair of reprographic equipment
- House wiring
- Photography/video-graphy
- Repair and maintenance of pump sets, electric motors etc.
- Shoe-making and repairing
- Plumbing

Indian Education programmes have so far been planned and organized rather in an indifferent way. In general, emphasis has been on broad based education rather than on specific vocation. It is high time that the education system should be vocationalised to improve productivity and employability. Action has already been initiated by the Govt. of India in this regard through constituting synergy groups comprising academicians, senior officials and industrial leaders to look into the revamping of the system of general education with emphasis on vocational education. [The Statesman, Calcutta, June 17, 1995]. It is agreed by all that there is absolutely no justification for continuing the existing unproductive system of education. Further, training should be arranged for various vocations not only in the organized sector but also in the unorganized sector, both in rural and urban areas. While organizing training programmes for the rural youth, the socio-economic background of the rural areas must be taken into account.

4.0 PROBLEMS AND ISSUES

A little introspection would show that in the Developing countries, the problems prevailing in the system of education and training of their technical manpower are [Maulik, 1993; Maulik and Ray, 1995]

(i) inadequate skill structure of the workforce as compared to the needs of the productive sector

(ii) mis-match and mis-utilization of available human resources

(iii) prevailing education system which emphasizes knowing rather than application of quality and relevance

(iv) absence of conscious effort enhancing practical skill

(v) shortage of adequately trained teachers

(vi) non-recognition of the need of retraining and continuing education

(vii) high cost for retraining and restructuring process

(viii) obsolescence and short-term inelasticity of skilled resources

(ix) failure to assess precise needs due to lack of poor infrastructure of Information Technology

(x) failure of proper identification of the product vis-a-vis client

(xi) lack of quality consciousness

(xii) poor want of life leading to less entrepreneurial quality.

The mis-match may happen in various ways viz.,

(a) between the need demand of emerging technology and failure of reassessment and preparation of the adequately skilled workers

(b) between the facilities and abilities available for making effective use in the production centre/R&D institution and

(c) between the supply generated by educational infrastructure and demand generated by the industry as well as other employers of technically qualified persons.

Apart from the above, Transfer of Technology between Developing countries are not prevailing [Araoz, 1980] with right earnest. Due to the globalization of economy, presence of multi-nationals in any country is inevitable and consequent competitiveness is cut throat. However, the call of J. L. Farrands, Secretary, Department of Science and Environment, Canberra, given as back as in 1980, in collaborating amongst the Developing countries in the training for

- development of appropriate rural technology
- development of alternative energy sources
- development of lowcost housing
- use of agricultural by-products and wastes

However, a lot of concerted and cooperative studies are required to determine the necessary direction.

In a highly informative article, Dr. A. R. Stephenson [1980] coined a word "Techno-cult Shock". This is still true today. The scenario in the computer sector today alone is a sufficient example. His second important conclusion that in the most of the Developing countries, the thrust areas are shifting from the Agricultural/Industrial production sector to service sector again proved to be a correct one. Newzeland itself may be cited as an example in this direction. Indian experience is almost the same.

5.0 CONCLUSIONS

In almost all Developing countries, the multi-spectral social forces, interest of the pressing business groups, interested political lobbyists create a situation where protected economy sets in resulting in licence-permit-raj, strong bureaucracy and inefficiency. On the other hand, with quality and efficiency as the objective and motive force, market economy flourishes and breaks all artificial barriers but, if unchecked, creates tension amongst the different strata of the society leading sometimes to a precarious and harmful situation. The thrust of "technological excitement" overpasses the "social pull". It goes without saying, therefore, that proper education and well thought training are the strongest tool to bring a balance between the two opposing forces for the human development of our small planet "the earth". The earth is becoming small not only due to explosion in communication, transport and informatics but also due to increased consciousness of the finiteness of encompassing environment. It is clear that any increased activity for enhancing productivity in any part of the world will cost the surrounding environment. If these are not replenished as best as possible by planned

approach, it will affect all at the end. Thus, the determination of the felt-need areas of training, classification, training programmes for making knowledge and creative workers, prioritasion, resource allocation and determination of the agencies for the successful transfer of technology is a subject of high degree research. Such determination should be considered in the light of socio-political scenario with geographical specificity. It may be pointed out that felt-need areas of a Developing country are indeed a fuzzy one, because the parameters of a Developing country are themselves fuzzy. Hard data are absolutely necessary for making an indepth introspection in this regard. Collaboration between Developing countries as well as international involvement for exchanging experience, knowledge, ideas etc., needs to be stressed.

There are several areas in skills development which would benefit from regional and international cooperation, such as

- sharing of experiences and training of key persons in policy formulation, planning and development of education and training strategies
- training of relevant persons in skills of technology assessment, acquisition and transfer
- developing infrastructure for teacher-training, manpower planning, educational research, curriculum and learning resources development
- exposing teachers, planners, managers, technical personnel to various innovations and practices
- above all, networking of education and training institutions of different countries for sharing their complementary strength and for better serving the skill-needs of sunrise technologies.

Policy formation in this regard in an arena of an International Conference such as the present one, will be mostly wanted.

Acknowledgment : The author records his acknowledgment and deep regards for Dr. B. Sen, Ex-Director, B. E. College (Deemed University) for stimulating discussions and exchange of thoughts in the initial stage of writing this article. The final outcome, however, is a product of a series of brain-storming sessions with his colleagues Prof. D. Ray, Prof. S. Majumdar and Dr. S. Ray at TTTI, Calcutta, for which the author takes the opportunity of gratefully acknowledging their contributions.

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