

Need to improve the education and training systems in paper industry

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S U M M A R Y

The Pulp and Paper Industry has a long record of existence and presently considered to be an important and major industry of the country. Keeping in view the anticipated growth of the industry to fulfil the requirement of paper and paper-boards and also newsprint for the country, sincere efforts are needed to improve overall working efficiency of the industry by taking up modernization and renovation schemes, establishing new mills, upgrading technologies in existing mills following modern maintenance techniques, etc. For attaining higher benefits of all these efforts, proper education and training of personnel associated or going to be associated with the industry have to be done in well defined and systematic manner.

This paper deals with the present status of education and training systems in paper industry in the country. The various areas where improvements are required to be done in these systems are highlighted. It has been emphasized that there is need for concerted efforts by educational institutions, industry, students, employees, government and other agencies associated to this industry for evolution and adoption of improved education and training systems. This would ultimately lead to the healthy growth of the paper industry.

The Pulp and Paper Industry in India has a long record of existence and with significant growth industry has taken an important place in the industrial structure of the country. The Present total installed capacity of the Indian Paper Industry is about 2.9 million tonnes with nearly 300 paper mills of which more than 80% mills are in small sector and the present capacity utilization in about 60%. By 2000 A.D. It is expected that demand would rise to 3.2 million tonnes of paper and paperboard and about 1.0 million tonnes of newsprint. Keeping this in view inspite of its achievement in past, paper industry has challenging task ahead for fulfilling the requirement of growing population with increasing literacy and industrial development.

On one hand paper industry has such a task ahead while on the other hand industry has been showing declining trends in capacity utilization and also in overall growth. The various factors such as capital intensive nature of the industry, lack of adequate and substantial supply of fibrous raw-material, shortage of coal, power

& water, slow development of technology, obsolete plant and equipment, inadequate investment for renovation & modernization and out-dated maintenance management system etc. are responsible. Hence, these factors are to be given proper attention but at the same time proper utilization of material and money greatly depends on quality of manpower engaged. It is a fact, though not recognised by all, that investments in new plant/modernization do not pay so much dividend as investment in proper education and training of personnel employed in, or those shall be employed by the present industry.

The fast changes which are underway in the industry will have great impact on education and training systems. A few of these changes are mentioned below:

— Increasing and fast changes in technology.

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- Continuous move by industry to achieve high efficiency.
- Changing industrial environment i.e. emergence of competitive market.
- Changes in the industrial concepts—fast growth of small paper mills.
- Increasing demand of persons with ability to work in team rather than working with their own technical knowledge.

The present paper deals with general status of education and training being followed in the paper industry of the country. Keeping in view the fast changing situations in paper industry due to various reasons emphasis has been given in the paper to improve the education and training system.

EDUCATION :

Education is a method of assimilating the existing knowledge, experience and capability to come out with

newer ideas by the recipient. It may be mentioned that the education given to technical/engineering personnel requires special attention at the time of planning as they are required to deliver the result as quick as possible. The education in the area of pulp and paper technology not only requires similar attention but keeping in view of fast development, need of the country, status of the industry etc. special efforts are needed to meet the requirements.

It has been reported in the area of pulp and paper technology regular class-room teaching and training started at Forest Research Institute, at Dehra Dun around 1956-'57. Later, Institute of Paper Technology was established at Saharanpur exclusively for teaching and training in paper field in 1964. Since then both organizations are engaged in these purposes. In recent past a few more institutes and colleges have started courses in the area of pulp and paper technology and the details of main institutes are given below :-

Sl. No.	Name of the Institute/College	Recognition given by	Minimum qualification for the admission	Duration of the course	Degree awarded
1.	Institute of Paper Technology, Saharanpur (U.P.)	Roorkee University, Roorkee.	a) +2 Science b) B. Sc.	4 years 2 years	Degree University Diploma
2.	B. N. Degree College, Dandeli (Karnataka)	Karnataka University, Dharwad.	+2 Science	3½ years	B.A.Sc. (P & P)
3.	Seshasayee Institute of Technology, Trichy (Tamil Nadu)	Board of Technical Education, Tamil Nadu.	Matriculation	3½ years	Diploma
4.	L.I.T., Nagpur (Maharashtra)	Nagpur University, Nagpur	B. Sc.	3 years	B.Sc. (Tech.) Cellulose Tech.
5.	Seth J.P. Institute of Tech., Yamunanagar, (Haryana).	State Council for Technical Education, Haryana	X Class	3½ years	Diploma in Pulp and Paper Tech.

It may also be noted that some courses in cellulose chemistry/ technology are also being run in some of the University/ Institutes at different levels other than mentioned above.

Though, number of institutes are now engaged in imparting education in the area of Pulp and Paper technology but this being highly specialised professional field and interdisciplinary in nature, it requires better infrastructure than presently available with most of the institutes. It may also be noted here that most of the institutes are functioning independently without having formal coordination with each other. High caliber talented staff is very much required which becomes very difficult for these institutes to employ and retain as they are lured away by the industry.

It may be mentioned that industry requires following groups of technical manpower from the institutes :

- 1) personnel who are to be associated with operation of plant — Operator level.
- 2) Personnel who are to be associated with supervision and the operation of the plant —Supervisor level.
- 3) Personnel who are to be associated with coordination and Production at the plant —Managerial level.
- 4) Personnel who are to be associated with teaching, R & D. , training, designing, consultancy, etc. , — Managerial level (Developmental Jobs).

Areas for improvement :

Keeping in view the requirement of the paper industry in the changing environment, education system requires to be improved upon in the following different areas to fulfil the need of the industry :

- 1) Similar to other areas, the technology is changing very fast in different spheres of overall process of Pulp and papermaking. And it has become imperative that these developmental work are to be taught to the students for which there is constant need to update the courses/syllabus. However, this may be kept in the mind that we should not too much deviate from existing requirement of the industry of the country.
- 2) A close watch may also be kept while framing syllabus on the emerging/changing environment of industry in the country. For example, in last fifteen

years the industry has registered tremendous growth in small paper mills. These mills have different system, approach and requirement than the big paper mills.

They have to sometimes function under limitations and constraints of technical as well as other types. Since these mills have become a significant part of industry, necessary steps are required to impart education, in such a way that candidates coming out from the institutes meet their requirement also.

3. In order to understand the requirement of the industry and faculty in various institutes is very much required. In this connection, following suggestions may be carefully considered :

- (i) Association of mill personnel at the time of formulating syllabus,
- (ii) Regular and extensive training of teaching staff at small as well as big paper mills.
- (iii) Arranging workshops and seminars on different topics at Institute in coordination with the mills.
- (iv) Faculty members may also be given opportunity regularly to update their knowledge by visiting other places in case facilities eg: library, instruments, equipments, etc., are not available at the Institute where they are working.

4. Students should also be given planned and systematic training in the mills during the courses.
5. The courses may be designed caterwise keeping in view the requirements of the Industry as mentioned earlier. This would not only meet actual requirement of the industry, but also clear the mind of the student regarding the future job and prospects.
6. Institutes should arrange short-term courses regularly for personnel of the industry to update their knowledge. The short-term courses may also be arranged for the personnel from non processing departments of the mills to give them systematic knowledge of pulp and papermaking technology.
7. Running of correspondence course may be also useful for those who cannot afford to personally attend the courses arranged by institutes.

8. Participation in seminars and conferences in pulp and papermaking technology by faculty members of the institutes would be also very effective to improve overall standard of education.
9. Possibility of use of modern techniques like audio visual etc. are to be also explored for greater impact on students and a liaison with techniques and methods of teaching being developed abroad will be useful.
10. There is a strong need of having formal coordination of institute/colleges—associated in teaching pulp and paper technology to rationalise their courses and also help each other in imparting better education to the students.
11. Scope for further studies by the students in right direction should also be open and accordingly provisions should be made for achieving higher qualifications.
12. It may also be mentioned that institutes should review regularly the employment potential for their students and accordingly corrective steps may be taken and placement cells will be useful.
13. It is also quite surprising to note that no good technical literature is indigenously available which is based on technical requirement and experiences of Indian paper industry. Efforts are needed by both mill technical Personnel and faculty members of the institutes to come forward to take this challenging job on priority basis.

TRAINING :

The training is basically continuing education to impart knowledge to accomplish change in behaviour, to provide skills or retrain in existing area to improve individual's capability to discharge responsibilities assigned to him by the organization. Training is basically a vehicle of communication between various entities of the industry. And although it is hard to find a manager who does not feel that training is necessary but it is still harder to find a manager who considers it his responsibility. This sums up the status of training in the pulp and paper industry.

Training, as an important function, in India, is presently limited to a few organizations in paper

industry which have forward looking managements. However, in many of these cases also training basically means training the fresh recruits. Most of the time management is not sure of the utility of training but is having this function so as to be with the Joneses, and as a result the thrust and direction to the training is lacking. Consequently the area does not receive proper appreciation from top management making the task of the person heading it more difficult. It does not mean that nobody is serious about training but definitely such people are miniscule. The end result is that training as system is limited to very few enlightened organizations.

Some of these forward looking integrated paper mills have developed organized systems to train their employees in tune with their requirements and developing people at all levels has become a regular process with them. All freshers undergo an orientation about organization and in depth hand-on training in their respective slots over a period of normally one/two years. Employees at various levels are imparted training to solve identified problems whose solutions lie in training eg: acquiring newer skills such as instruments, controls/tests, fittings etc., increasing belongingness, communication skills, technology change/upgradation etc.

In tune with time and because of critical phase through which paper industry passes periodically, the training in productivity and quality consciousness has become quite essential.

In most of the organisations, employees at lower levels are illiterate and so require knowledge inputs. This input is also required at other levels too. The lack of knowledge makes one indecisive and therefore literacy drive and knowledge of fundamentals of pulp and paper technology is a must at all levels.

The organizations are generally making an attempt at training, human resources development and career planning in a rather incohesive manner, indicating that these organizations are serious about them. For improving technical skills some of these organizations have their own workshop where workmen employees are imparted skill training in fitting, electrical, welding, etc., but effectiveness is poor due to non-availability of properly qualified staff.

It has been realised that motivated/educated/developed employees can raise productivity of the existing plant. Employee's supervisory and managerial skills will play a critical role in it. Therefore, in a number of organizations, thrust in training employees is towards improving human relation skills including interpersonal skills, transactional analysis, leadership, communication, etc.

Organizations do depute their people to various seminars and conferences but generally reluctantly. Those who undergo training are selected not necessarily based on the need of individual or organization but may be because they were to be rewarded or may be because they could be spared.

Basically training is being handled in the industry like teaching and therefore presently it depends on lectures as a basic tool and so hardly achieves its aim. Before training is done, factors such as solution to identified problems, background of participants, present level in concerned area, must be thoughtfully gone into to select training methods. Training should be followed by check papers and observations from seniors to judge its effectiveness. To improve retention proper facilities viz. auditorium, communication system, technical aids, design of training system based on participative approach and real life case studies are very critical.

The managements know that training is costly and mostly directionless but are aware that not training is even more costlier. Therefore what is needed to be done is to improve our training systems so as to make them more responsive to our needs and make its contribution in solving identified organisational problems visible.

Areas for improvement :

- (i) The training should be conducted against an identified problem whose solution lies in training eg : training operators in particular instruments or upkeep of their machinery, conducting tests, etc..
- (ii) The training and development should be purposeful and must have a definite direction with strong commitment from top management eg : productivity, quality, increased employees involvement, reduce absentism, new technology, etc..

- (iii) A great deal of care is to be exercised in introducing recruits to the organization and in imparting knowledge and skills to sow the seeds for loyalty, diligence, effectiveness and harmonious industrial culture.
- (iv) The literacy drive and imparting knowledge of the work (pulp and paper process/engineering) in all details are other prime requirements. Audio-visual modules with written commentary and feedback to check retention of knowledge provided should be developed in all seriousness at the earliest. The material developed should be to suit indigenous level of technology and equipments. Government and institutions engaged in teaching pulp and paper technology can lend their support.
- (v) Multi skills will have to receive more and more attention and it won't hurt if a common set of faculty imparts it in situ and is drawn from various Industrial Training Institutes. These are required to improve productivity, reduce down time and increase equipment utilisation.
- (vi) In today's environment, need is to have people who are more flexible and are able to change with situation and therefore emphasis of management education has to be in achieving this and in providing behaviour skills to deal with people in more harmonious manner. This could be achieved better by associating top professional institutes on specific tasks on specialisation basis.
- vii) In pulp and paper industry because of huge quantities of materials being handled manually, heavy fire load and background of people employed, training in first-aid, safety and fire-fighting has become of paramount importance.
- viii) Emphasis is changing from solo working to team working; therefore, suitable workshops will have to be designed to improve team spirit and enhance trust. Again IIM's can help by developing suitable management games and case Studies.
- ix) Communication and data processing systems are changing at pace beyond recognition hence training in computers, photo copying machines, etc. is a must.

- x) Big organizations perhaps can afford training as a separate activity but there is no place for training of personnel from small and medium industries. An institute to cater their requirements will go a long way in improving overall productivity of the industry.

Keeping in view the various areas suggested above for improvement of education and training systems, following points require special attention to achieve the goal :

- 1) It has become quite important that coordination between various institutions imparting education is done by one organization/special committee, so that uniformity and standard of education are maintained. This would also help in effectively utilizing the infrastructure mutually available at different institutes.
- 2) In order to achieve various improvements suggested the institute should have sufficient funds either from internal generation or other funding bodies. This aspect requires further critical examination.
- 3) The industry has to be quite open in its approach for lending helping hand to these institutes and provide proper feed-back to improve overall system.
- 4) Proper literature for education and training should be made available indigenously.
- 5) It is also suggested that from time to time advice from experts viz. education and training consultants is to be sought to make the education and training systems more effective.

- 6) The industry has to take serious note about the various aspects of improvement in training system suggested above for the benefit of employees, industry and overall need of the country.

7. Employees are supposed to take more and more interest in upgrading the knowledge through education and training and should avail to their maximum the various facilities given by management to them.

CONCLUSION :

The paper Industry has become an important industry in overall industrial structure of the country. The proper strategy of education and training of manpower associated with the industry has to be formulated to meet the requirement of the industry. The present system of education and training need improvements in various respects as mentioned above. In order to bring these improvements collective efforts are needed by educational institutions, industry, students, employees and other agencies associated with the industry. The steps taken in this regard would definitely improve overall productivity and growth of the industry.

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