Chapter - I

INTRODUCTION
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The progress and development of a nation depends on the effective utilisation of its human and material resources through industrialization. The use of human resources for industrialization demands its education in science and training in technical skills. This is required to understand technology and adopt it in producing things of greater value. Thus industry opens up possibility of greater fulfillment of individual needs and economic growth of the country. According to Science and Policy Resolution (1958): India's enormous manpower resource can only become an asset in the modern world, when it gets trained and educated. Thus technical education and training enables persons to acquire knowledge, skills and attitudes needed for industrialization of the country.

Indian industry is competing with the multinationals for selling their product in the international market. They are procuring latest technologies and improving productivity of the manpower. The requirement of type, number and quality of manpower is also changing. A high level of upgradation of knowledge and skill of manpower is required for making Indian industry competitive in the world market. Manpower having current knowledge and skills is to be developed through technical education system of the country at all levels. Technical education system should take care of capacity expansion,
efficiency improvement and quality improvement for meeting future needs.

Technical education system through a network of technical institutions of various levels i.e. Institutes of Technology, Engineering Colleges, Polytechnics, Industrial Training Institutes and non formal system, has played significant role in providing one of the largest reservoir of technically trained manpower. The product of this system includes scientists, engineers, technologists, supervisors, foremen, skilled workers etc.

Teachers play a key role in the education and training of technical manpower in the various institutions. Their effectiveness in performance is crucial in developing desired competencies relating to knowledge, skills and attitudes in students of these institutions. Teachers' behaviour and poor performance are reflected in their not taking classes, not preparing proper lessons and poor results of students. A proper understanding of psychology of teachers behaviour, performance, effectiveness and motivation is required for identifying the true cause of this problem and increasing the possibility of solving this.
POLYTECHNIC EDUCATION AND ROLE OF TEACHERS

The history of polytechnic education in India can be traced back to over 150 years. Polytechnic diploma holders have contributed significantly to the industrialization efforts of the country.

The polytechnic system prepares technicians for industry, service and social sector. Polytechnics in the country offer various types of courses in the field of engineering and technology, other occupational based courses, architecture, art, and pharmacy etc. for producing technical manpower for socio-economic development of the country. The polytechnic courses, identified on the basis of present and future demand of manpower, are implemented in such a way that the product of these possess desired professional, learning to learn, and social skills. The students coming out from these institutions find employment in organised and unorganised sectors of employment and form the backbone of the world of work. They find employment in all the functional areas. However, the most important job functions include: production, quality control, installation, maintenance, servicing, marketing etc. (AICTE, 1995)

Mission and Goals of Polytechnic

The document on "Towards Excellence in Polytechnic Education Perspectives for the year 2000 and Beyond" submitted by
TTTI Chandigarh to Planning Commission in April, 1993 gives the following mission and goals of Polytechnic Education:

(i) Train quality technicians and technician engineers consistent with the changing requirement of different sectors of economy. (ii) Provide both pre-service and continuing education programmes for training and re-training of technician and technician engineers (iii) Provide support to the industry by way of throwing open the facilities and expertise of the institutes through training, undertaking specific projects, testing services etc., making industry an equal partner in all activities of training and re-training and management of Polytechnic Education System. (iv) Provide service to community and society through non-formal education including transfer of technology, technology application and for promoting entrepreneurial culture (v) Provide equal training opportunities to all sectors of the population irrespective of geographical location, sex, social and ethnic background and physical handicap (vi) Undertake research and introduce innovations in the field of engineering field/shop practices towards improving quality and productivity in industry (vii) Remain committed to on-going quality improvement and to building excellence.

Over the years, polytechnics have grown both in number and size and have spread in every part of the country. The annual intake of these institutions, employing nearly 25,000 teachers and
infrastructure facilities of about Rs.3000 crores, is around 100,000. These institutions are assigned with several objectives, such as training quality technicians for present and future requirement of different sectors of economy, providing service to community and society through non-formal education including transfer of technology, undertaking research and innovation in technology etc. In polytechnics, physical, human, information and financial resources are to be effectively utilised for achieving these objectives. Of these four resources, human resource is most critical. It is incumbent upon the human resource to utilize financial and information resources optimally for producing quality technicians. It is the effort and performance of human resource; educational administrators, teachers, supporting staff and others, that result in the success and effectiveness of a polytechnic. Teachers are directly involved in instruction. They play an important role in ensuring excellence during instruction process and producing quality technicians for meeting present and future requirements.

Teacher also acts as a role model for students. They pick up their aptitude, attitudes and work habits in addition to acquiring knowledge and skills for effective performance in their career. Thus the right performance of a teacher is very essential for preparing right type of student technicians.
Role of Polytechnic Teachers

Teachers, to a large extent, affect the performance of polytechnics. They perform various functions such as teaching, instructional material development, curriculum development, supervising industrial training, consultancy and research (AICTE, 1999). Polytechnics have a staff structure comprising of Principal, Heads of Department, Senior Lecturers, Lecturers and Instructors.

Job responsibility of polytechnic teacher comprise academic, administrative and extension work.

According to Manual of Evaluation Procedure for Accreditation, faculty of Polytechnic is involved in various activities such as class room instruction, laboratory instruction, conduct of examination and evaluation work, research work, guiding project work, laboratory development, curriculum planning, development of instructional resource materials, consultancy, continuing education programmes, participation in the work of Professional Societies, interaction with industry and management of students' extra Curricular activities (AICTE 1995)

Thus, a polytechnic teacher has to perform multiple functions in the role of a teacher. This role has become more critical because of the
resource crunch faced by the institutions in view of the decline in budgetary grant from the government and other funding agencies.

According to Awale (1995), "The job of an engineering teacher is multifarious" to guide and inspire the students, to enrich self-discipline, to foster the area of specialisation by keeping abreast of the latest technologies and changing trends and ultimately to provide services and expertise to the industry and community for finding solution to real life problems.

The personal character, self respect, quest for gaining knowledge and transferring the same to the students, awareness of industrial needs, urge for doing research and zeal for institution building are most important characteristics of an engineering teacher. It is the engineering teacher who is an orchestrator of the various functions and activities of technical education process and its delivery and thus form the most significant link between the technical education system and the world of industry, economic development, business and other occupational areas.

An engineering teacher is an engineer first and then a teacher. To be effective in this role, he has to maintain a fine balance between his technical competence and teaching capabilities. In
assessing the overall competence of the faculty of an institution the following factors are taken into account:

- Academic attainment
- Professional experience
- Publication in Professional Journals
- Involvement in the programmes of Professional societies relevant to the programmes offered by the institution
- Involvement in research at national and international levels
- Innovation in teaching methodology and development of laboratories
- Interaction with Industry
- Student counseling and management of student activity and hostels.

Thus, to a considerable extent, the success and effectiveness of a Polytechnic depends on efficient and effective performance of teacher. The role of teachers in polytechnic has always remained central and pivotal. He has also to adapt himself to societal, technological and media changes in addition to becoming efficient and effective for achieving desired outcomes of instruction.

Changing role of teachers

The Report on Performance Appraisal System for Teachers of Technical and Management Institutions (1988) gives an idea of changed role of technical teachers. In the past the major role of teachers of most technical institutions was related mainly to
instruction. The curricula in operation and technologies were comparatively static. Curriculum development and staff development activities were rather infrequent. The problems of administration of institutions were comparatively less complex. Research and development as well as innovations were considered as a prerogative of a selected few institutions and individuals. In comparison with the above picture, the current scenario is one of the continuously changing curricula, rapidly changing technologies, a variety of programmes in different forms and models, rapidly changing industry, students coming from diverse target groups, environments and social background with varying expectations.

Teachers of today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, teachers need to innovate and conduct research for their own self renewal, keep abreast with changes in technology, develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in industry (to keep themselves uptodate). Another role relates to the shouldering of administrative responsibilities in cooperation with other teachers, heads of departments and head of institutions. The need for each teacher to perform such multiple roles has been recognised in the
National Policy on Education (1986) not only from the point of view of encouraging performance of individual teachers but also for promoting the quality of programmes and institutions as a whole.

ROLE EFFICACY OF POLYTECHNIC TEACHERS

An individual working in an organisation has to do certain activities and show performance. The combination of these is role (Pareek 1987). In simple terms roles are combinations of behaviours and activities that are undertaken by an individual in a given situation. An individual has to play many roles. Each role is associated with some expectations. The source of these expectations is overwhelmingly a product of the particular community and society in which the individual lives and work. The effectiveness of an organisation, to a great extent, is dependent on the performance of human resources working for it. They occupy various positions and play their role for meeting expectations of other concerned members in organisation and themselves. Katz and Kahn (1966), suggested that an organisation can be defined as a system of roles and the concept of role is central to the understanding of individual's integration in the system. Pareek (1974) pointed out that it is through the role that the individual interacts with and get integrated with the system.
According to Pareek (1987), role can be defined as a position one occupies in a social system as defined by the function he/she performs in response to the expectation of significant members of the social system and his/her own expectation from that position or office. Thus, role is an important dimension in understanding an organisation and planning its effectiveness. It is through the role that individual get linked with any system of which he is member.

In case the objectives and detailed description of the role or the expectations of performance/behaviour from the position are not well defined or available, it is likely to lead to role ambiguity and role conflict. This may give rise to confusion and poor efforts by human resources, which will result in low efficiency and low effectiveness. In such cases (absence of clarity of expectations as well as of perceptions) performance of the individuals and of the organisation is most often at a very low ebb. It may lead to discontentment, stagnation among the employees and further affects the morale and interpersonal relations in the organisation. It will also lead to stressful experience by the individual. If it is allowed to continue for a long time and too much, it may result in burn out and alienation of the person. It is termed as organisational role stress. Many times these stressful experiences due to interpersonal conflict lead to health problems(disease) in the role occupant. The organisational role stress
affects individual's performance and health and organisation. Thus, it will be possible to enhance the performance of an individual and reduce role stress by role interventions such as designing and redesigning of roles of the individuals in the organisation.

The report on Performance Appraisal systems for teachers for Technical and Management Institutions (1988) has also laid down emphasis on providing opportunity to teachers to do their best in work and have proper attitude towards their work as important factors affecting the performance of teachers. A good match between competence (area of strength of individuals) and the opportunities available for performance is a factor which significantly contribute to the performance of an individual. A mismatch could adversely effect their performance.

**Role Efficacy - Concept**

A person's performance in an organisation depends on his own potential effectiveness as a person, his technical competence, his managerial experience etc. as well as the way the role which he performs in the organisation is designed. It is the integration of the two (the person and the role) that ensures the persons effectiveness in organisation. Unless the person has the requisite knowledge, technical competence and the managerial skills required for the role, he can
not be effective. But equally important is how the role which he occupies in the organisation is designed. If the role does not allow him to use his competence, and if he constantly feels frustrated in the role, his effectiveness is likely to be low. Thus, quality of performance and its effectiveness for a person will depend on the clarity of expectations of performance in the role assigned to him by significant ‘others’ and his own expectations from this role. (Pareek, 1987).

In addition to clarity in defining roles, a proper integration of the person and role is required for effective performance by individual in an organisation. It comes about when the role is able to fulfill the need of the individual, and when the individual is able to contribute to the evolution of the role. The more persons move from role taking (responding to the expectations by various other persons) to role making (taking initiative in designing the role more creatively in a way that the various expectations from others as well as of the role occupant are integrated), the more the role is likely to be effective. Effectiveness of a person in a role in an organisation, therefore, may depend on his own potential effectiveness, the potential effectiveness of the role and the organisational climate. The potential effectiveness can be called efficacy. Personal efficacy would mean the potential effectiveness of an individual in personal and interpersonal situations. Role efficacy would mean the potential
effectiveness of an individual occupying a particular role in an organisation. Role efficacy can be seen as the psychological factor underlying role effectiveness. In short, role efficacy is the potential effectiveness of a role (to what extent an individual is able to change is role for meeting his own and higher up expectations (Pareek 1987).

In addition to competence one needs positive attitude and willingness to work for performing well. The attitude towards work although pertains to individual is affected by external factors like institutional climate, assignment to prestigious projects, reward system, development activities etc. It affects motivation level of teachers and his attitude towards work.

Thus, role efficacy of person playing a particular role in an organisation is dependent on his personal characteristics and organisational dimensions. High role efficacy of an individual may lead to higher effectiveness of individual and organisation. There is need to make efforts for understanding and creating personal and organisational factors facilitating effective performance by teacher in polytechnics through intervention related to role efficacy.
Present Status

It has been experienced and observed that there is hardly any study on the effectiveness and role efficacy of polytechnic teachers and factors that influence them.

The earlier concept of effectiveness of teacher was that it is dependent on the individual's capability. A Bandura did pioneer work in studying the field of Self Efficacy. According to Bandura (1977), “Self efficacy is the people's judgement of their capabilities to organise and execute course of action required to attain designated types of performance. It plays a significant role in determining the choices, people make, the efforts they will expand, how long they will persevere in the face of challenge and the degree of anxiety or confidence they will bring to task at hand. Bandura (1977) says, an individual's actual performance will be predicted by his/her feeling of competence or expectations of personal effectiveness. It was later on realised that role efficacy also has great effect on the performance of individual in addition to his or her self efficacy.

The concept of Role Efficacy has been pioneered by Pareek (1974, 1980 a, 1980 b, 1986, 1987 and 1993). Following him, a number of researchers have tried to find out relationship of role efficacy with personal and organisational variables and method of changing
organisational roles for enhancing it. Das (1984) found role efficacy having moderating impact on purposeful job behaviour and independent variables, such as organisational climate and role stress. Increased work related tension was found to have overall negative relationship with role efficacy. Vohra, (1990) in his study on polytechnic teachers found significant differences in the role performed by them and role perceived by higher ups. He also found that this leads to a lot of role conflict and poor performance of teachers.

Personal attributes and job demographics were found to have impact on role efficacy (Sayeed 1985). Role efficacy was found to be reducer of role stress (Pestonjee 1992). Conducive work environment was found to make leadership work which ultimately influenced role efficacy of organisational members and productivity of organisation (Sayeed 1992).

Role efficacy was found to prevent rail accidents caused by motormen of Central and Western Railways (Pandey 1992). It was also found to bring about a positive change in performance, interpersonal relations and overall job-behaviour of supervisors (Pandey 1994).

Bray (1988), studied role efficacy within interdependent short teams. Role efficacy was conceptualised as a form of efficacy beliefs that reflects the confidence of individuals performing specialised
interdependent role functions within groups. Role efficacy was found an independent belief and distinct from group perception of collective efficacy. The study revealed that role efficacy was moderated by the amount of direct experience gained by players differing in starting status. It was found that role efficacy has relationship with perceived role performance effectiveness.

Jayashree and Sadri (1999), in their study of role efficacy among executives in Calicut found self perception in respect of role efficacy among the executives of great help in improving their performance in new industrial environment. Pethe and Chaudhri (2000) in their study found out the relationship between the effectiveness of performing the role (role efficacy), self belief (self efficacy) and learned helplessness. Some of the dimensions of role efficacy showed significant relationship with learned helplessness in the organisation and occupational self efficacy.

A little has been done in research based understanding of organisational role, its correlates and predictors of effectiveness. Also there is a lack of clarity on the components of organisational role of teacher, factors affecting it and strategy for improvement.

The present study, entitled “A Study of Role Efficacy of Polytechnic Teachers - Its Relationship with Personal and
Organisational Characteristics”, seeks to identify the correlates of Role Efficacy and examine their relative contribution towards the prediction of the Role Efficacy of polytechnic teachers. Role Efficacy will be studied in relation to Personality, Motivation in Role, Motivational Climate, Quality of Working Life, Organizational Role Stress and Occupational Stress,

Importance of Study

According to report of Performance Appraisal System for teachers of Technical and Management Institute (1988), Role of Teacher is widely recognized as crucial to the effective implementation of any educational programmes. This is all the more so with technical and management education of today and of the future due to changing, economic social, industrial and technological scenario and the consequent changes in programmes to meet the current and projected needs of industry user systems. The contribution towards quality and excellence of any amount of Physical, Technical and Economic resources available in institutions will be limited by the level of competence and commitment of the teachers implementing the programmes. On the other hand, the ingenuity and innovativeness of the dedicated teacher can to a great extent overcome the deficiency in Physical resources and other handicaps.
In polytechnics, teachers play a key role in managing the learning process of students. Their effectiveness in performance is crucial in developing desired knowledge, skills and attitudes in students. The present product of polytechnic is found lacking by industry for not possessing desired knowledge, skills and attitudes required for playing the role of a technician. Many reasons for this are attributable to teachers e.g. lack of competence of teachers in the subject matter and teaching skills; absence of challenge, newness and variety in their job; surfeit administrative and less of academic work, overloading due to shortage of teachers; lack of incentives for good performance; absence of system for providing proper orientation to them related to their duties, responsibilities and expected behaviour, power and authority, autonomy and career prospects and lack of aptitude for teaching.

Teachers’ behaviour and poor performance is one of the major reasons for dismal conditions in polytechnics. Sometimes, teachers, inspite of their desired personal and interpersonal characteristics, competence and experience and appropriate organisational climate demonstrate poor performance at polytechnics. This is reflected in their not taking classes, not preparing proper lessons and poor results of students.
It is probably due to their not putting their best in teaching as they have low work commitment and work motivation. This is reflected many a times in situations like absenteeism from duty without notice, strikes, poor pass percentage of students, poor quality of instruction, a general feeling of alienation, dissatisfaction from job and health problems due to stress among teachers. A proper understanding of teachers' performance and motivation is essential for identifying the true cause of problems and increasing the chances of solving these.

The traditional approaches to solve this problem have been either to "discipline" teachers through punishment or to motivate them through incentives or changing job (job enrichment Programmes). These approaches have limitations.

Organisational roles provide a potential for the integration of teachers with their jobs leading to achievement of organisational/polytechnic goals and fulfillment of personal needs. Determining Role Efficacy (Potential of teachers role to be effective) of teachers determination may help in taking steps for its improvement, leading to their better performance and effectiveness.

Considering the importance of polytechnics in terms of number of technician trained, large investment made in infrastructure
and equipment, unemployment of pass out students from polytechnics, a large turnover of teachers, there is need of understanding the role efficacy of polytechnic teachers and find out ways of enhancing it.

It looks quite important to study, analyze and understand the role efficacy of polytechnic teachers if one is interested in enhancing the quality of their work, efficiency, effectiveness, motivation and satisfaction.