

FACTORS CONTRIBUTING TO THE UNEMPLOYMENT OF DIPLOMA HOLDERS IN CIVIL ENGINEERING - A STUDY

- Dr. L. N. MITTAL
- P. K. SINGLA
- S. K. GUPTA

SYNOPSIS

Diploma course in civil engineering is being offered by majority of polytechnics in the country. Considerable amount of unemployment is being experienced in the diploma holders graduating in this course. It is indeed a strange dichotomy that in a country like India, where more than 60 percent of plan budget go to construction industry directly or indirectly, diploma holders in civil engineering still face such an unemployment. This paper highlights the finding of a study conducted to ascertain the factors contributing to the unemployment of such diploma holders and make recommendations/suggestions for enhanced employability of diploma holders in this field.

(1) INTRODUCTION

Majority of the polytechnics in the country are offering diploma programme in civil engineering. A document of All India Council for Technical Education (AICTE) (1995) indicates that out of the total number of 988 institutions offering various full time or part time diploma programmes in engineering and technology, 563 (57 percent) are offering course in civil engineering. AICTE has further indicated that out of the total intake of 1,52,251 students for various engineering and technology di-

ploma courses in the country, the intake of civil engineering diploma course alone is of the order of 27,491 (18 percent). The Institute of Applied Manpower Research (IAMR) (1994) has indicated that by the year 1992, 14,526 diploma holders in civil engineering were unemployed and this number has been increasing year by year. The data collected by IAMR from nine states of the country (Bihar, West Bengal, Uttar Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Andhra Pradesh, Assam and Kerala) shows that the percentage of

• Prof. and Head, •• Assistant Professor ••• Senior Lecturer,

civil engineering diploma holders absorbed in gainful activities within two years of completion of courses, on an average, have been decreasing from 69.89 percent in 1982, 64 percent in 1983, 59.14 percent in 1984 and the present status is very critical. In a recent document circulated by Directorate of Technical Education, Punjab it has been indicated that it takes around four years for diploma holders in civil engineering to find some gainful employment. The IAMR has cautioned against any expansion of conventional fields of training in technician education like civil engineering diploma course.

It is indeed a strange dichotomy that in a country like India where more than 60 percent of plan budget goes to construction activities/industry, directly or indirectly and diploma holders in civil engineering face such an unemployment scenario. According to the latest information available in eighth five year plan (1992-97) much of the country's development work, specially in rural and sub urban areas, is still pending, awaiting urgent attention. As per the plan document, 31 million units of shelter are required to be constructed; 3000 hard-core problem villages remain in the category of 'No source' and 1.5 lakh 'partially covered' villages having safe drinking water supply level less than 40 liters per capita per day within a walking distance of 1.6 kilometers or an elevation difference of 100 meters; out of 5,67,000 village in the country only 2,61,000 (46 percent) have all weather or fair weather road connectivity; 76.8 million hectare area is under irrigation out of potential 107 million hectare area

which can be irrigated if water resources are fully exploited/managed. It has also been experienced that we construct good buildings but in the course of time, they require continuous repair and maintenance. A realization is thus growing and picking up momentum, particularly in urban sector for keeping the building and other structures in perfect condition. These and many more potentials exist where civil engineering diploma holders can get wage/self employment.

It is of great relevance to all those concerned with the technician education system or involved in planning, organising, directing, implementing, controlling, managing at diploma level programmes that these programmes are effective and efficient for better employability of the students coming out of diploma level institutions. The concern is not only to maintain the quality of product of polytechnic programmes but also to strive for bringing improvements in the programmes so as to make them relevant to the world of work in the context of changing needs of technical manpower in terms of professional, individual and social needs as well as changes occurring in communication technology, organised body of knowledge and skills and the fields of pedagogy and andragogy. It has also been observed that over the years there have been a decline in job opportunities in public sector. Unemployment amongst diploma holders in civil engineering has been a concern to the authors. It was considered essential to obtain view point of some experienced professionals and teachers in the field of civil engi-

neering with a view to identify factors contributing to the unemployment of diploma holders in this field. Hence this study.

2. OBJECTIVES OF STUDY

The major objectives of the study were :

- (i) To explore the causes of unemployment of diploma holders in civil engineering as perceived by experienced professionals/teachers in the field of civil engineering.
- (ii) To obtain perceptions about the possible avenues of employment for diploma holders in civil engineering.
- (iii) To recommend/suggest ways and means for enhancing employability of diploma holders in civil engineering based on (i) and (ii).

3. METHODOLOGY USED IN THE STUDY

Survey research design was applied for conducting this study. Relevant information was collected through a structured questionnaire. This questionnaire was mailed to experienced 140 professionals and teachers in the field of civil engineering. In total this questionnaire was responded by 55 persons. The data received through questionnaire was analysed and percentage responses against each query were worked out. This was followed by personal interviews with 24 (10 professionals and 14 teachers) respondents to validate the written responses.

4. PERCEIVED FACTORS RESPONSIBLE FOR UNEMPLOYMENT

As mentioned in section 3, the respondents were asked to provide their opinion on perceived factors responsible for unemployment of diploma holders in civil engineering on a five point scale indicating strongly agree, agree, undecided, disagree and strongly disagree. A summary of responses is presented below :

- (i) 75.8 percent of responses (30.3 percent strongly agree and 45.5 percent agree) indicate that there is considerable mismatch between supply and demand of diploma holders in civil engineering. 12.1 percent of responses are not in agreement of above perception.
- (ii) As perceived by 97 percent respondents, majority of diploma holders prefer employment in government /public sector organisations. Further 69.7 percent responses reveal that these diploma holders prefer to seek employment near their homes. 30.3 percent responses do not agree with this perception.
- (iii) 57.6 percent responses (18.2 strongly agree plus 39.4 agree) indicate that positions meant for diploma holders are being occupied by degree holders. 30.3 percent responses do not support this view point.
- (iv) 75.8 percent responses reveal that one of the reasons for unemployment is paucity of financial resources for starting new development projects in civil engineering. 18.2 percent responses do not agree with above contention.

- (v) On the question of deficiency in the competence of diploma holders for employment, 72 percent responses are in undecided category. 18.2 percent responses disagree that competence is the reason of unemployment. 9.8 percent responses strongly agree that lack of competence is one of the factors.
- (vi) 94 percent responses strongly agree that lack of linkage between the polytechnics and the field organisations and lack of guidance and career counselling are also the factors leading to unemployment of diploma holders in civil engineering.
- (vii) 36.4 percent responses strongly agree that diploma holders in civil engineering are not able to start own ventures due to rigid and lengthy procedures for obtaining financial and other support needed for self employment.

5. PERCEIVED EMPLOYMENT OPPORTUNITIES

A summary of percent responses on the perceived employment opportunities is given below :

- (i) 45.5 percent responses reveal that wage employment in government departments and public sector undertaking is perceived as poor. 42.5 percent responses are in the undecided column.
- (ii) 62.4 percent responses reveal that chances of employment in private sector are good to excellent and 30.3 percent responses indicate average and remaining 7.2 percent

as poor.

- (iii) 60 percent responses indicate that good to excellent chances exist for wage employment in service sector for repair and maintenance of buildings. Remaining 40 percent responses indicate below average to poor employment opportunities in this sector.
- (iv) 33 percent responses reveal that these diploma holders have bright chances to be small/sub/service contractors. Remaining show average or below average view point.

6. VALIDATION OF WRITTEN RESPONSES RECEIVED THROUGH QUESTIONNAIRE

As indicated in section 3, interviews were held with selected 24 experienced professionals and teachers out of 55 persons who responded the questionnaire for validating the written responses as indicated in section 4.

Whilst interacting regarding mismatch between demand and supply of diploma holders in civil engineering, majority of professionals and teachers agreed that more number of diploma holders in civil engineering are coming out of the system than required for wage employment; whilst seeking clarification on the written responses, 12.1 percent respondents have shown strong disagreement on the above contention, the professionals and teachers were not very clear regarding supply and demand position. Fairly good percentage of interviewees were of the opinion that plenty of employment opportunities are available in the service sector and

private construction companies but it has been experienced that diploma holders, by and large, prefer employment in government/ public sector undertaking and near to their home towns. This information matches with the written responses. Whilst conducting interviews, it was revealed that unemployment also exist amongst degree holders. As They (Degree holders) are readily available, employers prefer degree holders over diploma holders. As soon as, these degree holders find better employment, they leave the job. In this process, there is always some percentage of positions of diploma holders which are occupied by the degree holders. Hence, the interviewees, more or less agreed with the written responses.

Almost all interviewees were in agreement that due to political and economical considerations, new development projects are not coming up that rapidly as it should. This also hampers employment of fresh diploma holders. Lack of linkage between the polytechnics and field organisations, guidance and career counselling are the other areas on which interviewees were in line with the responses.

Whilst seeking clarifications for starting their own ventures/self employment opportunities, the interviewees, by and large, were of the view that a diploma holder coming out from the polytechnic at the age of 19-20 years is not matured enough to manage the business of his own. Government do provide some incentives like subsidies to technically qualified persons, but due to lack of experience, maturity, entrepreneurial skills and support, diploma

holders do not come forward for starting their own ventures. Moreover, the system of education is also not nurturing the students towards self employment opportunities.

Whilst validating the written responses of avenues of employment, majority of interviewees expressed that employment opportunities in the government/public sector undertakings are dwindling. They further revealed that though wage employment opportunities exist with private construction companies, neither students nor polytechnics are aware of such opportunities due to lack of linkage. Also diploma holders prefer government job due to salary, security and many other benefits.

Whilst validating written responses on self employment as petty/small contractors, majority of interviewees expressed their doubt whether diploma holders at this age are matured enough to take up such challenges. Over 60 percent interviewees expressed that in the time to come self employment avenues in service sector will further brighten.

7. RECOMMENDATIONS

After obtaining written responses, analysis of data and its validation, following recommendations are made:

- (i) There appears considerable mismatch between demand and supply of diploma holders in civil engineering. Keeping this in view, further expansion of this diploma course may not be desirable. Also, there is a need to consider the reduction in the present intake of this diploma course.
- (ii) As highlighted in section 1, there is

considerable scope for upgradation of roads, housing, buildings, water supply and sanitary system. This is particularly so in the case of rural and sub urban areas. Government may involve industry, Non-government organisations and other national and inter-national organisations to come forward to contribute in above areas of construction. This may provide enhanced employment opportunities to these diploma holders.

- (iii) It has been experienced that presently many civil engineering contractors do not have formal technical qualifications. To professionalise construction activity in the country, there is need to consider providing contract licenses to technically qualified personnel only i.e. diploma holders in civil engineering should be preferred as civil engineering contractors.
- (iv) There is considerable scope of employment of diploma holders in civil engineering in service sector like repair and maintenance of building and building services. Marketing of new building materials is another potential area of employment. Polytechnics should provide knowledge and associated skills in the above areas and entrepreneurial support system should provide soft term loans and guidance to such diploma holders.
- (v) Many studies reveal that majority of polytechnics are functioning in isolation from world of work. There is need to establish networking

with selected number of field organisations for effective implementation of diploma course in civil engineering. Involvement of construction industry in providing appropriate professional experiences to the students during course, involvement of professionals in teaching learning process, structured and supervised field visits and field oriented project activity to students are some of the areas of collaboration. Continuous interaction with world of work will bridge the gap, promote better rapport, develop appropriate professional competencies in the students and this may lead to better employment opportunities to diploma holders.

- (vi) In the times to come, wage employment, particularly in the government sector is likely to dwindle. Polytechnics will have to provide guidance and career counseling to the entrants, for promoting undertaking self employment ventures like sub contractorship, undertaking repair and maintenance services and installation of sanitary and water supply systems etc. In addition, students need to be counselled for opting their career in private sector for which polytechnics will have to build necessary linkage with reputed construction companies in the private sector.

REFERENCES

1. AICTE Directory (1995) : Institution approved by all India Council of Technical Education; New Delhi.
2. Planning Commission (1992-97) :

Eighth five Year Plan (Volume II);
Government of India; New Delhi.

3. Mittal L. N. (1992) : Interactive Networking for Polytechnic Industry Interface - A System's Design; BITS, Pilani.
4. TTTI (1994) : Proceeding of National Seminar on Curriculum Development; Chandigarh.
5. IAMR (1994) : Manpower Profile - India (Year Book); New Delhi.

ACKNOWLEDGEMENTS

- We are grateful to Professor (Dr.) M. M. Malhotra, Principal, TTTI, Chandigarh for his guidance and providing academic freedom in the conduct of this study.
- The authors are also grateful to Professor S. Krishnamurthy, R. Subramanian, B. M. Dhir, V. P. Puri and Dr. (Mrs.) P. K. Tulsi for the valuable suggestions in the formulation and validation of questionnaire for this study.

★