

ROLE OF POLYTECHNICS IN COMMUNITY DEVELOPMENT IN JHARKHAND

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ABSTRACT

The community polytechnic programme is a national programme sponsored by the Ministry of Human Resources Development of Government of India to ensure a fair share of benefits of technical education and scientific research for the rural society. Based on the infrastructure, intellectual manpower, experience and capacity of the polytechnics, such institutions were entrusted with community polytechnic programme for their active involvement in the process of rural development. These institutions are expected to act as focal points for technology transfer and promotion of local innovativeness in rural areas. In the State of Jharkhand, appropriate technology may be transferred to the rural people for the sustainable growth of that area. Despite its achievement, the rural masses are not being benefited as has been expected. In order to identify the gap, this research study has been undertaken. An attempt has been made to evaluate the role of polytechnics of Jharkhand (India) in community development. The study reveals that various training programmes have benefited a large number of respondents. It is only after proper need assessment, the programmes can be successfully organised in a meaningful way. Technology transfer and technical-support services are the most urgent components to be diffused in rural areas of Jharkhand. Technical-support services, technology transfer, and need assessment are the prime areas of concern of the community polytechnic programme. By making the local villagers more aware of S&T inputs, the impact level can be further improved.

Introduction

The polytechnic, as an institution, is well equipped with physical facilities (lecture rooms, workshop, hostels, and equipments), which could be used for linking centres of knowledge and skills to the rural communities. It has qualified and trained faculties, who can scientifically formulate, implement and monitor rural-oriented programmes and projects especially where transfer of technology is involved. It has a large body of student population, which can be of

tremendous help in making meaningful contribution to rural development.

A large number of technologies have been developed by various research institutions and laboratories but the benefits of these technologies are yet to reach the rural people in a significant way. It is the duty of community polytechnics to transfer these technologies to the rural masses. Many community polytechnics are taking appropriate measures to help villagers to construct low-cost houses, low-cost latrines,

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solar heaters, household water filtration system, etc. Through camps, seminars and on hand works, community polytechnics are educating villagers to undertake petty repair works of tube wells, care and maintenance of agricultural equipments, food preservation, etc. depending on the basis of need analysis of the concerned locality. The technological needs of clusters are not only cluster-specific but also highly dependent on technology transfer through the upgradation of skills and training, which can best be brought about through the 'community polytechnic' mode.

The nature and type of technology would vary from area to area depending on variations in factors like topography, climate, lifestyle of villagers, and levels of skills, and education of the people of that area. In a nutshell, the technologies should be user-friendly, environment-friendly, and cost-effective so as to have easy adaptability and replicability. It is

true to say that India lives in villages. Sustainable rural development promotes the overall development of a developing country. Technology plays a crucial role in sustainable rural industrialisation, and therefore, there is a greater need for science and technology capacity building for this purpose. Various research institutions and laboratories have developed a large number of technologies for rural industrialisation.

Study Area

Jharkhand, which came into existence on 15 November, 2000, is widely acclaimed as a region of the future. The region with an area of 79,677 sq.km. and a population of 27 million (82.2 per cent rural and 17.8 per cent urban) with literacy rate of 54.13 per cent, contains 211 blocks and 32,615 villages. In the State of Jharkhand, there are twelve community polytechnics (Figure 1).

Figure 1 : Location of community polytechnics in Jharkhand



Source : Government of Jharkhand, accessed at www.jharkhand.gov.in

Methodology

A preliminary analysis was made taking into consideration published research articles and reports. This provides an insight into the present practices in the field of technology transfer. Along with the preliminary analysis of literature survey, a pilot study was undertaken through an open-ended questionnaire. To carry out the study, firstly, a set of open-ended questions were prepared for the respondents. Open-ended or free answer questions were prepared to offer complete freedom to the respondents to decide the form, length, and details of the answer, and to know what is striking uppermost in the mind of the respondents. Open-ended questions were framed to elicit responses on technology transfer and technical-support services.

Detailed questionnaire was developed to examine the variables for performance evaluation of operational activities of the programme. The respondents were asked to rate their satisfaction level in delivery of community polytechnic services on a scale from unsatisfied (1) to most satisfied (5). Questionnaires were framed on Likert Scale requiring respondents to indicate a degree of unsatisfied, less satisfied, satisfied, highly satisfied, and most satisfied for each of the series of variables.

The reliability of the developed questionnaire was tested by deploying the statistical test 'Cronbach's alpha' to the responses received from all respondents selected randomly. The Cronbach's alpha covering the overall responses has come out to be 0.789, which is considered to be a good sign of reliability of the questionnaire for respondents.

This study has been conducted for 12 community polytechnics attached to all government polytechnics of Jharkhand State. The size of sample is 300 beneficiary villagers.

The results of the test identified the weakness and strength of the existing system and provided the insights to remove these weaknesses/problem areas. SPSS-8 statistical package was used for this analysis.

Results and Discussion

The overall objective of the community polytechnic programme is to harness the S & T inputs for removal of miseries of a large number of rural people in India. Earlier experience shows that technologies, which were transferred in rural areas, could not be sustained in the long run due to the failure of follow-up services. In order to make these technologies sustainable, there is a need to provide technical inputs, i.e training for skill development, information dissemination for creating awareness, follow-up of backward and forward linkage services for escorting the transferred technologies, and need assessment for judging the felt-need of rural people (users) of these technologies. The community polytechnic programme provides back-up services to rural people for socio-economic progress.

The variables for back-up services for improvement in the livelihood of people in rural areas are identified through the analysis of 300 beneficiaries. Here the main question was :

"What are the levels of satisfaction on back-up services for improvement in the livelihood of people in a rural area?"

The above main question was divided into five sub-heads, and variables were examined by conducting z-test on the basis of values received through the responses. Based on the responses received from the beneficiaries regarding the level of back-up services provided by the community polytechnic, Table 1 was prepared.

Table 1 : Factors for back-up services for improvement in livelihood of people in rural areas

S.No.	Variable	Mean	Standard deviation	Calculated value of Z	Result
1.	Manpower development (Training)	3.497	0.354	24.317	Satisfactory
2.	Information dissemination (Awareness)	3.643	0.363	30.680	Satisfactory
3.	Technology transfer	1.567	0.462	-53.723	Unsatisfactory
4.	Socio-economic survey (need assessment)	1.873	0.482	-40.498	Unsatisfactory
5.	Technical-support services	1.497	0.471	-55.271	Unsatisfactory

In this case, the mean value of manpower development is 3.497, standard deviation is 0.354, and calculated value of z is 24.317, which is more than z tab at 95 per cent confidence level, i.e. -1.645. It is inferred that rural people are satisfied with the process of Manpower Development provided by the community polytechnic in Jharkhand State. Similarly, in case of information dissemination, the value of mean is 3.643, standard deviation is 0.363, and calculated value of z is 30.680. It implies that the level of awareness through information dissemination factor is found to be satisfactory. In case of need assessment, the value of mean is 1.873, standard deviation is 0.482, and calculated value of z is -40.498. This means that need assessment factor does

not contribute satisfactorily to the rural poor. Further, in the case of study of technical-support services and technology transfer, the mean value ranges from 1.497 to 1.567, standard deviation ranges from 0.462 to 0.471, and calculated value of z ranges from -55.271 to -53.723. It implies that level of technology transfer and technical-support services provided by the programme are not satisfactory, because the responded values of mean and z value are less than critical values of mean and z for the said variables.

The independent variables discussed above are analysed through Friedman Test and ranking of the variables has been done. The result of the Friedman Test is shown in Table 2.

Table 2 : Ranking of independent variables

Variable	Area of concern in descending order of attention
Technical-support service	1
Technology transfer	2
Socio-economic survey	3
Manpower development	4
Information dissemination	5

The sums of the scores given by the beneficiaries are received in the ascending order for five mandated inputs of the

community polytechnic programme. Hence the independent variables (inputs) have been tabulated in the descending order of concern.

These inputs are technical-support services, technology transfer, socio-economic survey, manpower development (training), and information dissemination (awareness). It indicates that technical-support services, technology transfer, and need assessment are the prime areas of concern of the community polytechnic programme.

This survey was conducted for assessing the impact of the community polytechnic programme on beneficiaries. Impact of the programme on villagers responded by

themselves is analysed. The main question for this purpose was :

"What is the impact of services provided by the Community Polytechnic Programme on rural people?"

The above question was examined through z-test on the basis of value of the response received. Based on the responses received regarding the impact of community polytechnic programme on beneficiaries, Table 3 was prepared.

Table 3 : Impact of the community polytechnic programme

S.No.	Variable	Mean	Standard deviation	Calculated value of z	Result
1.	Impact of Community Polytechnic Programme	3.137	0.354	6.703	Satisfactory

In this case, the mean value of impact is 3.137, standard deviation is 0.354, and calculated value of z is 6.703, which is more than the critical value of mean and z at 95 per cent confidence level.

It can be seen from the above result that the impact of the programme, on beneficiaries i.e. socio-economic upgradation of beneficiaries was satisfactory.

Improvement in livelihood in the informal economy is envisaged as the main contribution of the programme, i.e. output (dependent variable) due to the community polytechnic programme. The community polytechnic programme provides a complete package of technical know-how, skill and attitude in five complementary inter-related tasks, i.e. inputs (independent variables) starting from socio-economic survey (need analysis), manpower development (training), appropriate technology transfer, technical-support services (forward-backward back-up) and information dissemination (need awareness) for improvement in the livelihood of the rural masses.

Table 4 presents the correlation matrix computed for examining the nature and magnitude of association between the paired variables.

It has been found that there exists a good correlation (0.589) between manpower development (training) and impact of the community polytechnic programme, as both were given high scores by the beneficiaries. Hence, further manpower development (training) should be provided to beneficiaries by putting more emphasis on the local needs. The correlation coefficient between the information dissemination and impact of the community polytechnic programme on beneficiaries is found to be high (0.607), which is statistically significant. By making the local villagers more aware of S & T inputs, impact level can be further improved.

The correlation coefficient between the manpower development (training) and the information dissemination is found to be 0.530, which is also moderately significant. It indicates that information dissemination has motivated beneficiaries to acquire training in need-based occupation.

Table 4 : Pearson Correlation Matrix of input and output variables

Variables	Impact of community polytechnic	Socio-economic survey	Manpower development	Technology transfer	Technical support service	Information dissemination
Impact of community polytechnic	1.000					
Socio-economic survey	0.123	1.000				
Manpower development	0.589 *	0.023	1.000			
Technology transfer	0.047	0.019	0.078	1.000		
Technical support service	0.067	0.007	0.093	0.067	1.000	
Information dissemination	0.607 *	0.077	0.530 *	0.072	0.050	1.000

* Significant correlation.

Conclusion

From the above findings, it is found that training given to the beneficiaries has yielded good result. Various training programmes have benefited a large number of respondents. As regards information dissemination of various newer programmes and technologies, it was found that people have really been provided information through printed pamphlets, posters, discussions with farmers, and community ladies groups, etc. Need assessment is not satisfactory for organising the programmes to meet the requirement of majority of the people. It is only after proper need assessment, the programmes can be

successfully organised in a meaningful way. Technology transfer and technical-support services are the most urgent components to be diffused in rural areas of Jharkhand.

Further, it can be concluded that technical-support services, technology transfer, and need assessment are the prime areas of concern of the community polytechnic programme. Further, manpower development (training) should be provided to the beneficiaries by putting greater emphasis on the local needs. By making the local villagers more aware of S & T inputs, the impact level can be further improved.

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