Review Article

Community Development through Polytechnics with Focus on Rural Areas

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Abstract

    The main objective of this research paper is to acknowledge the significance of polytechnics in promoting community development. When this area is researched upon, major emphasis is put upon rural communities. In India, there have been establishment of polytechnics in urban and rural communities. These are facilitating augmentation of skills and abilities among individuals, which are utilized to enhance ones livelihood opportunities. It is necessary to encourage rural individuals towards acquisition of education, so they are able to render an indispensable contribution in promoting well-being of their families and communities. Polytechnics can lead to promotion of retail marketing network to support the rural artisans and small farmers by developing or organizing small co-operatives among them. The polytechnics contribute in identifying their interaction with the institutions, laboratories and research and development organizations to accelerate the pace of the application of technologies in rural communities. The main concepts that have been taken into account in this research paper include, resources for development of polytechnics, activities under the scheme of community development through polytechnics, factors highlighting role of polytechnics in community development, and implementation mechanism.

Keywords: Activities; Community Development; Mechanism; Polytechnics; Programs; Resources; Technologies

India is vast country with the population of approximately 115 crores. In six lakhs villages, more than 75 percent of the population resides. There are differences among individuals on the basis of number of factors. These factors include, caste, creed, race, religion, gender, age, ethnicity, educational qualifications, occupations and socio-economic background. Through acquisition of adult education, individuals are able to generate awareness in terms of various aspects, which are necessary to promote the development of communities. When the individuals are well-educated and possess the needed resources, they are able to make use of their educational qualifications and competencies to bring about developments. The individuals, residing in both rural and urban communities, take pleasure in the benefits of technologies. In India, there are more than 1419 polytechnics and equivalent technical institutions, which exhibit the potential to provide skills training to millions of individuals. Therefore, polytechnics are being made use of to promote community development [1].

In India, there are more than 3200 polytechnics and technical institutions, which exhibit the potential for making provision of skills training to millions of youth through their own facilities [2]. Polytechnics render a significant contribution in honing the skills of the individuals through their own facilities and by establishing extension centres in collaboration with ITI, KVKs, vocational institutes and non-government organizations (NGOs). These polytechnics can render useful and meaningful services in the adoption of appropriate technologies. Technical and support services are provided to the individuals, belonging to deprived, marginalized and socio-economically backward sections of the society. Polytechnics can therefore, render a crucial assistance in the community devel-

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opment work. This can be accomplished by partly utilization of resources and partly through mobilization of resources that are available in the higher technological institutions. The involvement of polytechnics in implementing the scheme of community development is to take place within the period of time. The individuals, involved need to conduct research and put into practice innovative strategies and approaches [1].

Resources for development of polytechnics

The development of polytechnics is taking place with the intention of imparting technical knowledge and to create the opportunities for employment and self-employment [3]. The resources that are required for the development of polytechnics have been stated as follows: [1].

1. Polytechnics are equipped with physical facilities in the form of buildings, lecture halls, laboratories, workshops, hostels and so forth. These can be used as knowledge and skill centres for rural community and slum dwellers.

2. Polytechnics have qualified and trained faculty members, who can scientifically monitor, formulate and implement community oriented programs and projects. Particularly, where the adoption of appropriate technology is involved.

3. Polytechnics have technicians and craftsmen, whose services can be utilized to some extent for imparting skill training and adoption of appropriate technologies.

4. Students of polytechnics could be of great assistance and support in making meaningful contributions to communities and development of rural areas.

The rural individuals need assistance in the marketing of rural produce and products. The exhibitions, gram shree mela, kisan mela can be organized to popularise the produce and products of agricultural labourers and farmers. Apart from agriculture and farming practices, the rural individuals are engaged in the production of handicrafts and artworks, food items and so forth. In other words, they are craftsmen, artisans, potters, weavers etc. It is vital for them to be aware of the marketing strategies, which are necessary to market their products. Sale of organic foods, herbal products and medicines are increasing at the rapid rate in the world market. Therefore, polytechnics can facilitate such retail marketing network to support the rural artisans and small farmers by evolving or organizing small co-operatives in them. The polytechnics should identify their interaction with the institutions, laboratories and research and development organizations to accelerate the pace of the application of technologies in rural communities. They should have close co-ordination with the industries, which would make provision of additional technical support and employment opportunities, for the individuals trained under the scheme [4].

When investing resources for the development of polytechnics, it needs to be ensured that development of human resources should take place in an appropriate manner. When development of human resources is to be taken into consideration, it needs to be ensured that they possess the necessary skills and abilities, which are essential to enhance not only their livelihoods opportunities, but also community development. Therefore, development of human resources is regarded as one of important factors. The purpose of skills development is to create skilled and knowledge-based human resources. In rural areas, one of the major factors that have led to insufficiencies and shortages is increase in the rate of illiteracy and lack of awareness on the part of the individuals. Therefore, it is vital to ensure that they recognize the significance of education and generate information in terms of advancements taking place [2].

When the individuals are making use of polytechnics, they are required to generate awareness in terms of various aspects, which may facilitate the utilization of resources in an effective manner. For instance, it is essential for the individuals to take care of their health. Research has indicated that individuals belonging to rural and tribal communities depend on the natural environmental conditions. In the case of illnesses and health problems, they obtain herbs and medicinal plants from the forests. But when community development takes place through polytechnics, the individuals are able to augment their knowledge in terms of modern, scientific and innovative methods. The individuals, belonging to all age groups, categories and backgrounds, need to take care of their health and they are making visits to hospitals and health care centres. The rural individuals even make visits to urban areas to obtain medical and health care treatment. Apart from health care facilities, the rural individuals are generating awareness and are making use of digital technologies to promote better livelihoods opportunities.

Activities under the scheme of community development through polytechnics

The major activities that are put into operation under the scheme of community development through polytechnics have been stated as follows: [1].

Need assessment survey

The identified polytechnics should conduct the needs assessment survey of the area, selected for activities. Such surveys should lead to determination of the felt needs and identification of the methods and strategies, which would render an effective contribution in generating productive outcomes. Participatory rural appraisal and rapid rural appraisal exercises can be conducted to understand the socio-economic and ecological condition of the individuals and the area to develop micro-plan for the villages that have been selected. The institutions should also make judicial use of comprehensive statistics that have been already available from Directorate of Economic and Statistics, Census office functioning in each state and Union Territory, credit plans of the banks and studies conducted by NGOs.

On the basis of the outcomes of the surveys, the identified polytechnics should prepare a detailed time bound annual operation plan that have been indicating the objectives, targets to be accomplished in measurable terms, resource needs, implementation processes, complete time schedule for each activity to attain the set of objectives and monitoring and evaluation mechanisms. The micro-plan needs to be formulated to identify the responsibilities and functions of all government and non-government agencies and the grass-root agencies as village co-operatives, self-help groups and so forth. The participation of the individuals in these cases is considered necessary. Through active participation in these areas, they will render a significant contribution in the development of the communities.

Skills development training programs

The skills development training programs are the ones that would render an efficient contribution towards enhancing the skills and abilities of the individuals that would enable them to be productive and sustain their living conditions better. The primary objective of skills development programs would create a skilled and knowledgeable-based manpower by empowering the individuals technically, so they can earn better livelihoods. The skills development training programs should be well-designed through graded exercises, taking into consideration the market requirements for various trades. These training programs are non-formal modular courses of three to six months duration. These are depending on the local needs and commensurate with the available local resources with proper structures. In this manner, it has the desired flexibility to pave the way for self-paced open learning mode.

Depending upon the local circumstances, in some cases, multi-skill training may be offered to make self-employment viable for the rural economy. In some of the trades, advanced skills development courses for three to six months duration may be designed and offered in accordance to the needs and requirements of the trainees. When the curriculum and instructional systems are formulated, it needs to be ensured, they contain all the content that would be beneficial to the learners. These programs focus upon certain aspects, basic skills knowledge and attitudes for wage and self-employment, imparting entrepreneurial skills, making provision of skills up-gradation programs in their own fields, adoption of appropriate technologies for enhancing employment opportunities, identifying and conducting skills training programs for women and the individuals, belonging to Scheduled Castes, Scheduled Tribes and Other Backward Classes, marginalized, poverty-stricken, deprived and individuals, belonging to economically weaker sections of the society. In addition, special training programs need to be conducted on health, hygiene, sanitation, and mechanization of sanitary services and skills programs pertaining to liberty and reintegration.

Dissemination and application of appropriate technologies

A large number of technologies have been developed by various research institutions and laboratories in the form of appropriate technologies. But the benefits of these technologies have not been able to reach the rural population. The individuals, belonging to rural communities are still not well-equipped with usage of technologies and possess either low or no literacy skills. These individuals also encounter certain barriers in the adoption of modern technologies and how to make use of them to enrich their lives and enhance productivity. It is vital for the individuals, belonging to rural communities to generate awareness in terms of usage of technologies. The tasks of dissemination and application of appropriate technologies have not been undertaken in a planned manner. It is within this framework that identified polytechnics need to render a significant contribution in the implementation of these tasks.

It is vital to collect the details of appropriate technologies from various agencies and organizations that are engaged in research and development of suitable technologies through various means. It is necessary to generate awareness among rural individuals to make use of these technologies to enrich their livelihoods opportunities. The rural individuals are primarily engaged in agriculture

and farming practices, so they are well-equipped with technologies that are necessary to carry out ones tasks and activities in a well-organized manner. The development of modern, scientific and innovative methods are considered crucial in transferring and sustaining technologies. The areas of rural water supply, sanitation, shelter, habitat, communication, transportation, agriculture, agro-based food technology, non-conventional sources of energy for rural areas, construction and service sector and so forth are the ones, which require improvements in technologies. Furthermore, the introduction of modern gadgets and machinery will be used to generate employment opportunities in rural communities. When improvements will be made in these areas through making use of modern technologies, then individuals as well as the communities will be able to progress.

Technical and support services

In India, when putting emphasis upon community development through polytechnics, focus is put upon rural communities. Rural communities are the ones that need to be developed and individuals residing in these communities need to be made literate and well-quipped with modern, scientific and innovative methods. Technical and support services need to be made available in rural communities. Large number of equipment are being used in the farm and non-farm sector. Large number of individuals are residing in rural communities and practicing agriculture and farming. In order to enhance productivity and profitability, it is vital for them to bring about improvements in the methods. Technologies need to be made use of in agriculture and farming sectors. Research has indicated that agricultural labourers and farmers are well aware of the fact that with advancements taking place, they need to make use of modern and innovative methods in the production processes.

In rural communities, there have been establishment of training centres, which are providing adequate training to the individuals in terms of utilization of modern, scientific and innovative methods in the agricultural sector. For promoting sustained working, it is essential to make provision of proper repair and maintenance services. The identified polytechnics should make provision of help to the rural individuals by implementing certain tasks. These are, minor repairs of equipment through the extension centres and also at site; service centres are established to serve cluster of villages; promotion of service centres and repair shops are set up by the vil-

lagers themselves; technical service camps need to be established in villages at regular intervals and extending consultancy services at the village levels needs to be implemented through trained manpower.

Awareness programs

Creating awareness among the rural individuals is regarded as one of the important aspects in terms of bringing about technological advancements and contemporary issues of importance. Assimilation and dissemination of information in terms of rural development is another important activity. The Information, Education and Communication (IEC) renders a significant contribution in bringing about changes in the attitudes of the rural individuals for adoption of better technologies and living conditions. For this purpose, communication media, such as, leaflets, brochures, filmstrips and audio-visual aids needs to be made use of to generate awareness. In addition, television and radio are regarded as common aspects to generate awareness as well as promoting recreation. Dissemination of information to end-users and others may be made through the use of media. The modern as well as folk media should be used for generating awareness among the masses.

The other aspects that have been made use of to generate information are, organization of exhibitions at the village extension centres; organizing youth clubs, mahila mandals, farm's clubs and so forth; special exhibitions, community workshops, group discussions, seminars and so forth; using mass media, such as, video films, films, radio and television networks; technical camps, demonstration camps, mobile exhibitions; hoardings, posters and display boards with advertisements are established at appropriate public places and releasing of advertisements takes place on a regular basis. These aspects have rendered a significant contribution in bringing about enhancements in the livelihoods opportunities of the rural individuals and communities.

Factors highlighting role of polytechnics in community development

The major factors, which highlight the role of polytechnics in community development have been stated as follows: [5].

Establishment of extension centres

There have been establishment of extension centres in making provision of adequate knowledge and information to the individu-

als, who are residing in rural communities. Polytechnics have been established in five to ten village centres in the nodal villages, where services can be provided to a cluster of 10 to 20 villages. These centres prove to be extensions of the polytechnics and make provision of skills training, repair and maintenance work, common faculty for the group enterprises, information sharing and hiring of technical services for the polytechnics. NGOs, professional experts, village agencies, such as, panchayats, and panchayat samitis and educational institutions are also included in the establishment of extension centres.

It is apparent that establishment of extension centres require the building, infrastructure, technologies, equipment and other materials. These are provided by the local individuals and authorities as full of cost to the polytechnics. These extension centres are required to get transferred from time to time from one area to another, depending upon the needs and priorities of the rural individuals. In some rural communities, the problems, such as, poverty, illiteracy, unemployment are more severe as compared to other areas. Therefore, the extension centres need to be transferred from one region to another, depending upon the needs and priorities of the rural individuals.

Financial norms

Financial resources are regarded to be of utmost significance in the implementation of any tasks or functions. When there have to be establishment of training centres or organizations that make provision of assistance and support to the individuals and have the major objective of promoting their well-being, they too have to take into consideration financial resources. To implement the scheme of community development through polytechnic (CDTP), each polytechnic is provided with both recurring and non-recurring grants by the Ministry of Human Resource Development, Government of India. The human resources, who are employed in this field, need to ensure that financial resources are planned in an appropriate manner.

In some cases, the financial resources that are available are not sufficient. In such cases, it is vital to make effective use of them. When the individuals possess certain skills and abilities to make use of financial resources, they are able to utilize them appropriately towards the development of communities and areas, particularly the ones, which are experiencing deficiencies. Hence, to make

efficient use of financial resources, it is necessary to conduct analysis of areas, which need to be improved. In conducting analysis, modern and innovative methods are being made use of. Therefore, the individuals need to possess adequate knowledge and information in terms of these methods.

Monitoring

Monitoring is one of the important aspects, which need to be taken into account. The main objective of this factor is to ensure that the methods that are implemented, prove to be beneficial to the individuals. When measures are formulated for promoting development, when approaches are put into operation, they need to be beneficial to the individuals, hence, through this aspect, one is able to find out, whether this proves to be advantageous in generating the desired outcomes. When monitoring takes place, it is vital for the individuals to make use of appropriate methods and approaches. These are dependent upon the problems of the individuals and communities.

In promoting development of the communities, it is vital to take into consideration number of aspects. These include, alleviation of problems such as, poverty, illiteracy, unemployment and homelessness; establishing educational institutions, schools and training centres to enable the individuals to recognise the significance of education; promoting usage of technologies and modern, scientific and innovative methods in the agricultural sector and other areas; generating awareness among individuals in terms of health care and medical, labour market factors and so forth. In addition, the other aspects, which need to be taken into consideration to enrich ones living are, management of household responsibilities, effective socialization, and participating in social, political, economic, religious and cultural activities. When measures are put into operation to promote these aspects, they are to be monitored in an effectual manner. Monitoring helps in identification of limitations and bringing about improvements. The scheme of Community Development through Polytechnics (CDTP) is implemented by polytechnics and is being monitored by the centre of sustainable development at the National Institute of Technical Teachers and Research Chennai.

Institution of advisory and executive committee

The constitution of the advisory and executive committee is regarded to be rendering a significant contribution in the effective implementation of the scheme. In order to put this scheme into

operation in an appropriate manner, it is vital for the individuals to possess the essential skills and abilities. Apart from skills and abilities, it is vital for the individuals to possess leadership skills. The possession of leadership skills is crucial for the successful implementation of tasks and activities and generation of desired outcomes. It is the job of the leaders to provide appropriate guidance and direction to the individuals. When they make provision of appropriate guidance, the individuals are able to carry out their tasks and activities satisfactorily.

The advisory and executive committee is constituted by the including representatives from the various departments, institutions, NGOs, banks, village panchayats, KVICs, women's organizations and so forth. When any information is to be obtained, these organizations render a significant contribution. Decision making processes are regarded as an integral part of the lives of the individuals. When the individuals are putting into operation various tasks, they need to make decisions. The executive committee is an internal implementing and decision making organization, constituted at the polytechnic level.

Collaboration and linkages with other agencies

One cannot work in seclusion. In particularly the area of community development, when individuals are required to focus upon number of aspects, it is essential to collaborate and form linkages with other agencies. When one collaborates and works in integration with the other agencies, they are able to generate awareness in terms of various factors. The identified polytechnics, while planning their activities, need to ensure that the efforts are complementary and supplementary in nature. The identified polytechnic institutions play the role of the change agent. In this role, they ensure that agencies, organizations, and programs are transformed with the main objective of promoting well-being of the individuals and communities. This is apparent that within the course of time, transformations do need to take place in these aspects. When changes are to be encouraged, it is vital for the agencies to work in collaboration with each other.

Implementation of allied activities are regarded as indispensable. For this purpose, polytechnic staff members and students, village youth, local NGOs, voluntary organizations, and other Government agencies are needed to be evolved at the implementation of the scheme. The perquisite of having effective collaboration with the other agencies for the all- round development of the area is willingness to information sharing, commitment to the task, credibility, good rapport with individuals and other organizations and good delivery capability and mechanisms. It is vital for the individuals to possess the feelings of thoughtfulness and consideration for carrying out this task successfully and for generating positive outcomes.

Implementation Mechanism

The major stages in the implementation mechanism of polytechnics schemes have been stated as follows: [1].

- **Initiation:** The polytechnics selected for the implementation of the schemes initiate by identifying the team of four to six members. Polytechnics should make concerted efforts to encourage the participation of all Heads of Departments in the implementation of scheme. These faculty members should be trained through short-term courses on aspects of micro-planning, rapport building, selection of the rural projects, technology dissemination and application, organization of non-formal skills training programs and promotion of self-employment.

- **Planning:** In the stage of planning, polytechnics is to identify the rural areas, which are to be served and develop rapport to elicit the participation of the individuals. The planning stage includes, identification of the areas, which needs to be developed. The underdevelopment of regions and lack of facilities, machinery, equipment and infrastructure prove to be disadvantageous and give rise to barriers within the course of sustenance of better livelihoods opportunities. In the implementation of planning function, there are two phases, first is conducting the needs assessment survey and participatory rural appraisal. The exercises, such as, social mapping, resource mapping to identify the target groups, resource base, job potential, potential for science and technology applications, skills training needs and development of micro-plan for the area. Secondly, the annual operation plan needs to be developed to identify the training programs and extension centres. In addition, technologies and adoption mechanisms need to be identified, needs for organizing service camps are identified. Furthermore, strategies for implementation, resource and budget requirements and collaborative strategies are taken into account.

- **Implementation:** In the implementation stage, the major aspects, which need to be taken into account are, popularize the scheme through print and non-print media; organize the resources, such as, human, physical and

financial resources for putting into operation the identified activities; establish village level skills training centres, named as extension services, which would be opened to serve a cluster of 10 to 15 villages nearby and can act as an extension arms of the identified polytechnics; implementation of identified activities making use of available resources; forge connections with the village panchayats, DRDA, KVKs, KVIC, NGOs, voluntary organizations and other developmental agencies working at the local level. Furthermore, the problems need to be identified, particularly the ones, which are proving to be barriers with the course of development of rural communities. It is vital to identify the problems, which need intervention of the outside agencies and non-government organizations. Solutions can be brought about in such problems, when various agencies and organizations work in collaboration with each other. For example, organization of health camp for women and children in collaboration with the Health Department.

Conclusion

When understanding community development through polytechnics, focus is put upon the development of rural communities. The main reason being, more than 70 percent of the population of India resides in rural areas. In rural areas, there are number of aspects, which are in an underdeveloped state as compared to urban areas. There are number of inadequacies and shortages. Some of the important aspects include, system of education, medical and health care facilities, infrastructure, technologies, equipment, roads, transportation facilities, employment opportunities, living conditions of individuals, social, cultural, economic, political and other activities, industries, factories and overall environmental conditions. The role of polytechnics in bringing about community development have been regarded as indispensable. The major activities that are put into operation under the scheme of community development through polytechnics are, need assessment survey, skills development training programs, dissemination and application of appropriate technologies, technical and support services, and awareness programs.

The major factors, which highlight the role of polytechnics in community development are, establishment of extension centres, financial norms, monitoring, institution of Advisory and Executive Committee, and collaboration and linkages with other agencies. The major stages in the implementation mechanism of polytechnics schemes are, initiation, planning and implementation. There are establishment of polytechnic institutions with proper infrastructure, amenities and resources and facilities that are needed

to carry out ones, tasks in a well-organized manner and attain the desired outcomes. The polytechnic institutions have trained and qualified faculty members, technicians and craftsmen, who are making use of technologies and skills to promote advancements. Students are regarded to be supportive in rendering an effectual contribution in bringing about development of rural communities. Through polytechnic institutions, there are number of tasks and activities, which are implemented. These include, organization of workshops, exhibitions, seminars and programs, which generate information among individuals in terms of various aspects, which are needed to augment productivity and profitability and enrich their lives. Therefore, it can be stated that role of polytechnics is acknowledged to a major extent in bringing about development of rural communities.

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