IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

SCIENCE AND TECHNOLOGY EDUCATION FOR RURAL TRANSFORMATION

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Abstract: Father of our nation Mahatma Gandhi rightly said that, India lives in her villages, at present by the fast movements in urbanization approximately 70% of Indians live in rural areas only and agriculture takes the main source for work, livelihood of the people, also one can easily understand that, the country can't develop without drastic changes in the rural places. Government schemes, programs, policies etc. like Deendayal Upadhyaya Gram Jyoti Yojana for rural electrification, Pradhan Mantri Gram Sadak Yojana, Rurban Mission etc. are the prime functionaries for the developments in rural India, but by the science and technology education there will be a positive development which fulfill all their needs and requirements. Science and technology embraces every attempt of rural people to explore, interpret and manage in all walks of life. By the modern trends in remote sensing science and technology education, the departments of water, sanitation, forest and agriculture are benefited a lot in the country, also latest technologies like laser land leveling, drip, sprinkler irrigation need to be brought up to all rural places to upgrade cost-effectiveness of water and minimize misuse of this precious resource. The present study focuses mainly on the impact, pros, cons of science and technology education and finally highlight on the awareness on to improve rural India society by the transformation of novel technology and science education for sustainable growth which will only take all the rural areas and hence India, forward in the 21st century.

Keywords: ***science, technology, education, rural, people, India, transformation.***

I. INTRODUCTION

In India presently science and technology education plays a major role in bringing social and economic transformation in the rural places towards communication, knowledge, sustainable, profitable livelihood etc. all other always assist in changing rural India brighter. Rural development is the utilization, protection and enhancement of the natural, physical and human resources which are highly required to build lifelong changeable developments in all rural parts. Though the importance of science and technology education for rural India was well appreciated back in 1930s by Gandhiji, towards centre for science for all villages and modern institutions for provision in industry, medical treatment, also science and technology changed the focus to the rural areas 40 years later that is in the 1970s. There is a need for taking advantage of the recent developments in science and technology education in rural areas which is the need of the hour to increase socio economic status of the rural population in fields. Science and technology are the two crucial components for aiming at fostering growth and educational occupation attainment development of the India rural country. Many developing countries face the challenge of increasing incomes of rural sector through different approaches and to minimize the gap between the rural and urban cities in the country. The question arises here that what influences science and technology education to be applied in all rural areas. Technology and science together makes central and crucial for attaining food and vegetables productivity, many of the third world nations have been quick absorbents in applying science and technology education as a tool for the sustainable rural development in all parts of the sectors. The necessity of control and make use of science and technology education in rural India is found to be very promising in the recent times, hence realizing the facts it was to be felt that, the progress and success must be monitored very strictly and all the implementations, activities, programs, schemes etc. towards rural development by the science and technology education in the 21st century can be done very effectively and continuously.

II. OBJECTIVES

- To study the present status of science and technology education for rural transformation.
- To examine about the agricultural and industrial scientific education developments.
- To highlight the applications of science and technology education in the transformation of rural India.
- To evaluate the influence of globalization on present Indian rural life.

III. METHODOLOGY

This study is based on secondary sources evidence gathered for the review which came from research articles, journals, government data, position papers, websites etc. which are all related to the "Science and Technology Education for Rural Transformation."

IV. CONCEPTUALIZING RURAL DEVELOPMENT

Rural development takes the procedure of changing the status of existence, moneymaking as well being of people living in comparatively independent and disperse inhabit places, it has traditionally centered on the exploitation of natural resources like agriculture and forestry, hence it is a strategy trying to obtain improved rural creation, productivity, high socio economic equality, stability, ambition towards social economic development. Some of the basic elements in this are food, cloth, shelter, literacy, health, security of life and poverty. Nation countryside evolution design in different procedures by researchers, ranging from thinking a set of goals, programs to a close-packed technique perspective, its scope, content are vague and do not have well-accepted analytical boundaries, however, this may be viewed both as a weakness as well as strength.

Table1. Share of Rural Areas in Total Net Democratic Product (NDP) and Workforce

Year	Economy	Workforce
1970-71	62.4	84.1
1980-81	58.9	80.8
1993-94	54.3	77.8
1999-00	48.1	76.1
2004-05	48.1	74.6
2011-12	46.9	70.9

Year	Agriculture		Manufacturing		Construction		Services		Non-agriculture	
	NDP	Emp.	NDP	Emp.	NDP	Emp.	NDP	Emp.	NDP	Emp.
1970-71	96.2	96.8	25.8	51.5	43.2	64.6	32.8	42.1	32.4	47.3
1980-81	94.9	95.9	31.8	48.1	45.6	58.8	34.0	41.7	35.0	44.9
1993-94	93.9	95.8	29.8	51.3	45.1	57.2	33.6	42.3	34.8	46.6
1999-00	93.2	96.6	41.6	51.5	43.3	57.6	27.1	40.7	31.8	45.8
2004-05	94.1	96.1	42.5	49.6	45.5	64.4	32.7	41.9	36.7	47.2
2011-12	95.1	95.9	51.3	47.4	48.7	74.6	25.9	39.6	35.3	48.7

Note: Emp.: Employment, Non-agri. includes manufacturing, construction, services and other sectors

V. AGRICULTURE AND INDUSTRIAL SCIENTIFIC DEVELOPMENT

It is truly international in outlook, exchange of knowledge, participation of members and a scientist draws inspiration in being recognized by the higher echelons of the international community, to this extent the scientist has become insulated from the social atmosphere of the country in which he lives this is especially true in India where science was never integrated with its social base. The problem facing us is to propose ways and means to accomplish this social integration of scientific knowledge and the community of scientists in India. The Scientific Policy Resolution adopted by the Government of India late in March 1958, had emphasized the powerful role of science and technology education in the development of the country. The key to national prosperity, apart from the spirit of the people lies, in the modern age, in the effective combination of three factors, technology, raw materials and capital, of which the

first Role of Science and Technology in Making Rural India Shine is perhaps the most important, since the creation and adoption of new scientific techniques can, in fact, make up for a deficiency in natural resources, reduce the demands on capital. But technology can only grow out of the study of science and its application. However, due to various reasons, particularly the large and continuing increase in population it has not been possible to truly bring about an impact of technology and scientific education advances on the rural life of the people to the extent expected, but the desire to do so has been there throughout.

VI. THE GROWTH OF TECHNOLOGY

Technological changes devise new goods and techniques of production and it can be defined as the growth of the new technique that can produce goods and services at lesser cost of production. It is the most importance factor that can determine the factor productivity, becomes possible to produce more output with same resources or the same amount of product with less resource. Also the pace of science and technological progress especially information technology speeds up exponentially over time because there is a common force driving it forward towards evolution. From the beginning in the western nations, by far the greatest amount of research and innovation has been conducted by private industrial concerns motivated by the drive to produce new and better items for sale and to earn larger corporate profits. The field of scientific enquiry was directly linked to the field of commerce by the incentive of monetary reward.

VII. TECHNOLOGICAL BACKWARDNESS OF INDIA

- Agriculture
- Education
- Environmental protection and rehabilitation
- Water
- Energy
- Industry
- Construction
- Health
- Economy
- Employment
- Industrialization

VIII. APPLICATIONS OF SCIENCE AND TECHNOLOGY IN SHINING RURAL INDIA

- Access to information through different types of agricultural information systems.
- Monitoring the situation of natural resources and environment.
- Impact through different information processing tools like analysis of environment deterioration, soil erosion, deforestation, etc. towards better rural development.
- Education and communication technologies generating new approaches to learning and knowledge management for the benefit of rural development communities.
- Science and technology networking contributes greatly to relating people/institutions and facilitating the emergence of virtual communities of stakeholders that generate and exchange information and knowledge among all rural areas.
- Decision support systems through which data and information provide relevant knowledge inputs for informed decision-making for the people of rural places.

IX. INFLUENCE OF GLOBALIZATION ON INDIAN RURAL PEOPLE LIFE

Rural development primarily concerned with uplifting people out of poverty, economy, environment must therefore be viewed through this perspective and examined. Major aspects of globalization that relate to rural life, and its development includes the commercialization of agriculture and expansion of agro-industries, the liberalization of international trade, marketing for food, other agricultural products, the intensification, internal labor migration, the increasing privatization of resources, services, the wider use of information, communication and science technologies education. Globalization hit India at the end of the last century which results in all the spheres life, labor migration to cities from rural areas in search of employment was a common phenomenon, by the various reasons especially for luxurious life, handsome salary and for numerous job opportunities. Earlier there was a minimum wage act and now equal

wage for all is provided, today the percentage of village people attending the call of nature in open fields is reduced, the good roads restrict make them successful to sale agricultural products from villages to goods markets in cities, towns as a result they can earn good price of their product. Life in rural India was miserable due to non-availability of electricity, several villages have been electrified, and globalization is going to make much difference to rural life through electricity. Education is concerned, in villages school buildings are available in villages and numbers of teachers are appointed in primary schools so as to improve the primary education, the infrastructures like benches, boards, other facilities are of improved quality. There is, however, another positive development that girls are attending the schools in the villages, also the number of students attending graduate, post graduate courses is increasing with awareness among students from rural areas, and the technical education is providing to most of the students from rural areas to secure employment. Hence technology and science education are trying to make use of it in villages and other communication infrastructure, people know about the internet and exists number of small scale industries in villages to provide employment to educated youth also.

X. CONCLUSION

Rural India faces a severe technology and science education deficit and there are other serious known, recognized shortages like power, water, health facilities, roads, etc. also, but, the role of technology and science education in solving all together problems is but barely acknowledged, and the actual availability of science and technology education in rural areas is at best very low. The backbone of the rural economy is agriculture, which also provides sustenance to over half the present nation population. Education of technology, science, research, communication etc. played important roles in increasing rural India growth and development, further technology generally derives and draws from science, and often manifests itself in physical form for example, as a piece of hardware, also education of science, on the other hand, is knowledge The task is not easy when one takes note of the highly variable socio-cultural patterns and complex problems, but it can be accomplished provided the scientific community is motivated and would accept the challenge, and if there is appropriate local involvement. It is science and technology education alone that can solve the problems of hunger and poverty and all must have to work towards achieving this goal of harnessing science in all spheres of rural development, because ultimately the total national development would depend on the rapid progress of the rural areas only by the joint effort of scientists, administrators, and local people with the full support of the political structures and nongovernmental, voluntary organizations. Finally much attention is needed in order to make rural India shine because the country can't shine without the shining of rural India as a whole.

XI. RECOMMENDATIONS

- Encourage creativity and innovation in everyday scientific and technological activities, and provide incentives for participation in them.
- Provide opportunities to general public, especially the youth and women, to appreciate S&T and participate in their development.
- Demonstrate the linkages between the basic and applied sciences and show their role in rural development.
- Increase the visibility of successful projects that have an impact on society's progress and rural development.
- Honour and recognize scientists and technologists who make significant contributions in their fields.

XII. ACKNOWLEDGMENT

The author acknowledges the experience gained through the years interacting with colleagues, peers, students, community, etc. that have influenced and motivated inputs for this paper.

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