ROLE OF RESEARCH AND HIGHER EDUCATION IN INDIA

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ABSTRACT

It is a well acknowledged fact that Research plays an important role in the economic growth of a country. Research refers to a creative work which is undertaken to in a systematic manner so as to increase one’s stock of knowledge. In the context of education, it would refer to solving educational problems in a scientific and systematic way.

The research scene in India is a chequered one, while the prestigious institutions and institutions of national importance are excelling in research, the mediocre and poor ones are lacking in the same. The Indian Government has taken a number of steps to promote research.

The significance of research arises from its promotion of creative thinking; finding solutions to impending problems in a methodical, scientific and well-determined way; promoting further studies in the area of interest and keeping abreast with the latest developments in the selected field of study.

Indian system of education is characterized by a number of constraints and research is one of the main ones. Carrying out Research in India has a number of challenges such as absence of intellectual stimulation, emphasis on rote learning, lack of scientific theory and base, inadequate data, lack of scientific knowledge, and training in Research Methodology.

In the globalized world it is imperative to have knowledge driven growth powered by innovation. A number of steps could be implemented to foster research such as industry-academia collaboration, development of vocational skills, provision of more funds and inclusion of research as a criterion for faculty promotion. India has a well-acclaimed Brain Power and promotion Research will only help India move up the global intellectual ladder.

Keywords: Education Research; Industry-Academia Collaboration; Research Bodies

INTRODUCTION

Research plays an important role in the economic development of any country. In fact, research and development form the basis of future competitiveness of an economy. Unfortunately, research in India is showing a downward trend. In this Paper an attempt has been made to discuss the concept of research, examine the importance of research, briefly touch on the research scene in India, look into the challenges and attempt to predict the future.

OBJECTIVES OF THE STUDY

The study is based on the following objectives:

1. To understand the meaning of research particularly research in education.
2. To get preliminary information on the research scene in India and
3. To discuss the challenges facing research and throw light on what augurs for the future.
CONCEPT OF RESEARCH

Research refers to creative work which is undertaken systematically, in order to increase the stock of knowledge of individuals, culture and society and further utilize this stock to devise new applications. In the broad sense, it covers gathering of any data, information and facts for the advancement of knowledge.

Innovation can be considered as the key player of economic growth and subsequent improvement in the quality of living. In this century, there is no doubt about the fact that India has the capability of spearheading global innovation, but the big question that emerges is will Indian higher education support this potential? The entire issue warrants a careful discussion.

Research in education refers to solving educational problems in a systematic and scientific manner and also to understand, explain and predict human behavior in a more organized way.

RESEARCH IN INDIA

Education is a prime mover of the society. In order to favorably utilize our demographic potential, the quality of education together with access and equity gathers significance. India has the third largest system of higher education. The overall scenario is that, quality does not match the global standards and there is increased scope and urgency for improving the quality of our country’s educational institutions.

The research scenario in India portrays a chequered picture. While some leading world class institutions like the IITs and the IIMs are achieving what was well planned in their objectives others portray a dismal picture in terms of quality and quantity of research.

The first Prime Minister of independent India, Shri Jawaharlal Nehru, believed in the importance of science and education which would facilitate a path of innovations, which in turn would help in the process of development.

Generally India has evolved a large number of high quality research institutions which would provide valuable advice to the policy makers. The institutional framework for research and development can be divided into 2 broad categories: defence and civilian.

The five apex bodies which are responsible for research and development are:

a) Indian Council of Medical Research; It is the apex body for the formulation, coordination and promotion of bio medical research.

b) Indian Council of Agricultural Research; an autonomous body which coordinates guides and manages research and education in agriculture including horticulture, fisheries and animal sciences.

c) Indian Council for Social Science Research; It was established in 1969 by the Government of India to promote research in social sciences.

d) Council of Scientific and Industrial Research; It was established in 1942 as an autonomous body and India’s largest Research and Development organization. Its activities include various fields like aero - space engineering, structural engineering, life sciences, environment etc.

e) Tata Institute of Fundamental Research. It is a Research institution in Mumbai dedicated to basic research in Mathematics and sciences.

It is necessary to design a framework that will take into account the entire life-cycle of ideas, beginning from discovery and creation to commercial application and value addition. This calls for a holistic approach to public funding in Research and Development.
India attracts more Research and Development facilities from the US multinationals in the ‘Fortune 500’ than any other nation. This could be primarily attributed to the large number of science and engineering PhDs available in the country.

The government wants to increase the spending on Research and Development under the twelfth five year plan (2012-2017) from 0.9% to 2%. However, when a comparison is made with other countries India presents a poor picture. In our country there are 119 researchers per million population as against 5287 in Japan and 4484 in United States. She has a little over 6000 Doctorates in Science as compared to 9000 in China and 25,000 in United States.

Most of the Indian colleges and universities lack high end research facilities. The number of PhDs produced every year is very low.

The Government of India has taken several steps to promote the Research and Development sector in India, as mentioned in the Union Budget of 2014-15. Two additional Research Institutes of excellence were set up in Assam and Jharkhand with an initial sum of Rupees 100 crores. In addition the government plans to establish a national level research and referral institute for higher dental studies.

The following are a few examples of recent investments:

1. French tyre manufacturer Michelin is planning to set up an R&D sector in India. This facility was set up in Gurgaon, which will be first of its kind in developing country;
2. Sandwik announced the proposal for the setting up of a world class facility at Chakan which is part of the Maharashtra Industrial Development Corporation Park near Pune;
3. Valvoline Cummins Ltd (VCL), a joint venture between Ashland Inc. and Cummins India Ltd has announced the opening of new labs for Research & Development and Product Development along with a training facility at Lexington, Kentucky, USA.

**IMPORTANCE OF RESEARCH**

Let us discuss the significance of Research

One, our knowledge is limited and a number of problems need to be solved in different fields of study. Very often we identify a vacuum in our knowledge and try to address it by asking related questions. Research through systematic study makes available a variety of methods which help in finding solutions.

Two, research is regarded as an objective, methodical, well-determined scientific method of investigation. Through research a stock of the current scenario can be taken and this will guide the organizations in their decision taking of the future.

Three, we carry out our mundane daily tasks on the basis of our common sense. However, this may not be the correct approach. We will have to find out what is the best under the current situations and research serves this task the best.

Four, another angle of research is that it helps to gather information. The findings can be recorded and then analyzed to judge the validity of the information.

Five, Research is a systematic investigator into and study of materials and sources. It helps to pursue your interests, learn something new, hone your problem solving skills and come out with results that can contribute to enhancement of knowledge.

Six, Practice of research adds depth to research papers as students are kept abreast of the latest information. Through learning from real world case studies and by seeking the guidance of faculty members help students’ secure up to date information.
In this world of Information and Communication Technology lack of infrastructure and poor quality of digital content are grounds for concern. For making a healthy ICT environment, digitized PhD thesis, e-journals, research journals, e-books etc have to be developed.

Seven, it is vital that educational institutions establish a Research Consultancy culture involving faculty, students, professionals and industry to work on a few technologies and facilitate discovery.

Research should be the core area instrumental for inter-face between the academic and corporate world. It must provide a theoretical framework that enables reassessment and refinement of current practices and thinking.

It empowers the faculty with in depth knowledge and instills a sense of curiosity among them. In addition it improves the consultancy capabilities of the faculty.

**CHALLENGES FOR RESEARCH IN INDIA**

The Indian system of higher education has been facing a number of challenges. It requires major investments so as to make human resources productive, by coupling the older general disciplines of humanities, social sciences, natural sciences and commerce, with their applications in the new economy and having adequate field base experience to enhance knowledge with skills and develop appropriate attitudes.

There are several basic problems facing Indian higher education at present. They include inadequate infrastructural facilities; faculty crunch; low enrolment ratio; over-crowded classrooms; widespread geographical income, gender and ethnic imbalances etc.

India has a low base of researchers and the academic sector contributes less than 14% of the total number of researchers. The immediate need in this context would be, to encourage industry-academia collaborations, promote collaborations between the universities and the public authorities as also between the government and Research and Development laboratories and also increase the number and quality of doctoral students.

The Indian education system promotes rote learning and students only use prescribed materials. This trend continues even when pursuing higher education. The examinations are more a test of memory power rather than creativity. When the stage comes to pursue further studies and present research papers, they portray a dismal picture hampering the research process associated with higher education.

As the students are deprived of intellectual stimulation fostered by research, they fall short of invaluable knowledge and skills which are not only important in their careers but also in other areas of life. Even the number of students pursuing research is limited by want of time, and support. The result being them ending up intimidated, confused and frustrated.

One of the main impediments is lack of scientific theory. Many of the researchers are incapable of carrying out sound empirical work; data is often inadequate and even when available not availed of; in addition the problem of bureaucratic inertia is always plaguing the system.

Often there is lack of scientific knowledge and training in Research Methodology. Many of our researchers and guides are not competent enough to carry out sound empirical work.

The following factors can be said to be encouraging good research:

1. A conducive academic environment of the institutions/universities;
2. A well-stocked library and Reference section covering books, e-books, journals, online library etc;
3. Provision of adequate infrastructural facility;
4. Existence of Research laboratories having the latest equipments;
5. Availability of adequate finance for purchase of funds;
6. Combining teaching and research related activity in the work profile of the Professors;
7. Instilling a feeling of pride and purposefulness among teachers that their major task is to transformation of the economy.

FUTURE OF RESEARCH IN INDIA

One of the great economists and Nobel Prize laureate, Milton Friedman (Consultant to Ministry of Finance –Government of India -1955), said, “The great untapped resource of technical and scientific knowledge available to India for the taking is the economic equivalent of the untapped commitment available to the US 150 years back”.

In the increasingly competitive global economy, it is necessary to have knowledge driven growth powered by innovations. The key to continued success for India is building up of a higher education system which is superior in quality and which encourages research.

Very often, it is the industry which is the beneficiary of several research efforts and therefore interactions between industry and research establishments is important.

In the current age where issues of research are often of global nature active interaction with international institutions of repute must be encouraged.

Vocational skills should be emphasized. Vocational training will play a crucial role preparing the workforce to be productively used to propel the growth process of the economy. There are emerging interest in linking skills and higher education sector.

While creating an enabling environment, note should be made of reducing the teaching hours, greater financial support and providing access to better infrastructure. Awarding of fellowships and encouraging industry collaborations will promote research.

Research can be promoted by following certain guidelines such as inclusion of research as a criterion for faculty for the purpose of promotion, (a system laid down by UGC and is currently been followed by affiliated colleges and universities); institution of awards for distinguished researchers with substantial financial incentives; generation of greater funding; improvement of infrastructure; and possible reduction of teaching hours so that more time can be devoted to research. India has all the potential of being a research hub given her long tradition of teaching and renowned Brain Power. The impediments have to tackled so as to easy the path to economic prosperity.

CONCLUSION

Research as we have seen plays an important role in the economic development of a country, more so in case of a developing country like India. We face a number of constraints, in the form of ill-stocked libraries, absence of well-equipped laboratories, lack of adequate finance, government intervention etc.

In view of the fact that we possess a universally acknowledged Brain Power, the need of the hour is for innovations and inventions. India prides itself in producing Nobel Laureates of Indian origin. The innate talents of our researchers have to be nurtured and fostered to make a mark in the international arena. All this calls for greater financial support, right policy mix together with working on finding solutions to the impairing problems plaguing the Indian society, if we have to be seen as a major player in the global world.

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