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Science and Important Aspects of Higher Education

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Abstract :

Science is concerned with understanding how nature and the physical world work. Different scientists may get different solutions to the same problem. Science is different from many other ways of learning because of the way it is done. Science relies on testing ideas with evidence gathered from the natural world. Education is a very important role in our lives. Everyone has been being educated since the day they were born. There is a rapidly growing demand for a Higher Education in the world today. Although a Higher Education is difficult to receive, the rewards of self-improvement, job insurance, a development of character and social improvements are the essentials to satisfy us. With a Higher Education, you are insured to have a better paying job. I like to spend money freely and a Higher Education allows us to get the better paying job that will provide this stability. The multi-million dollar businesses pay the big bucks to someone who has the Higher Education and knows what they do rather than the individual who does not have the Higher Education. A better job will also provide us benefits to a more

successful life. With the fast pace of change and due to the impact of globalization, the role of the Higher Education institutions in furthering research and scholarship becomes important. The term 'research and scholarship' usually refers to uncovering or generating new knowledge, or solving particular practical or theoretical problems.

Keywords : Science, Higher Education, social improvements, job, successful life.

Research Paper :

Introduction

Education gives a number of benefits to students such as enhanced social skills, greater awareness of human achievement and an appreciation for cultural diversity. But education is increasingly viewed as an economic investment. Education provides a student with skills that are valued by employers and increases lifetime earnings capacity (1-2). Relevance and importance of Higher Education needs be evaluated according to the extent of balance between societal expectations from various academic institutions and their true functions, which is brought about in the light of ethical criteria, political neutrality, the culture of critique, an ever more strengthened link between societal problems and the job market as well as the adoption of long-term orientations with respect to societal needs and objectives, which would include respecting cultures and environmental support. The main source of concern, however, is achieving education for all as well as goal–oriented specialized education with special emphasis on merits and skills since these two forms of education provide for living in variant situations as well as for changing one's job or profession (3). Higher education should play a more prominent role in providing services to the society especially in its function as a means for eradication of poverty, eradicating prejudice, violence, illiteracy, hunger, corruption and diseases, which is primarily brought about by adopting an inter- and trans disciplinary approach to analyzing problems (4-5).

Science and Science Education during the British Rule

The development of Modern Science in India is not an organic extension of the earlier tradition. It is an implant by the British in a language, alien to its people. As with other implants, it needed nourishment and nurturing to be absorbed in the society. Science education was lacking and Science was looked upon as an appendage thrust by the British for their own benefit. Until a few decades towards the end of the British rule, the role of science education, scientific and technological research in economic growth and social transformation was rather limited. Only such developments were introduced that did not lead to a conflict with the interests of the

colonial power. The only aim of education including that of science education was to turn out men competent to serve the civilian administration. Consequently, science education and research was uneven and patchy with no facilities. Even those few individuals educated in science lacked opportunities for either gainful employment or for scientific research. They could only procure clerical or teaching jobs.

It was only in 1857 that the universities of Bombay, Calcutta and Madras, modeled after the London University, were established. As a concession to the Indian aspirations, the foundations for basic sciences were expanded and academic science in the universities received a fillip. It must be stressed that even under such adverse conditions, globally competitive scientific research was carried out by a few scientists like C.V. Raman, M.N. Saha, S.N. Bose, D.N. Wadia, P.C. Mahalanobis, S. R. Kashyap, Birbal Sahni, S.Ramanujan, S. Chandrashekhar. Many of these were trained in India and carried out their research in Indian universities.

Benefits of Education

Higher Education (HE) is an important source of high level skills and knowledge for the nation. The Government's aim is to develop an inclusive, world class higher education sector which provides students with the skills they need and helps to underpin a productive economy and cohesive society. In order to achieve that we need a Higher Education system that is more relevant and more accessible to a greater number of young people from a broader range of backgrounds. The Government has therefore set a priority to improve access and quality in Higher Education.

The Importance of Education

What factors in society ended sectarianism in schools and made them secular? After the common school had been accepted, people began to urge that Higher Education, too be tax supported (Gutmann 201). Schools now needed to get ready the students for college - an even higher form of education instead of preparing them to immediately enter the work force. Separation of church and state also contributed to the educational problems of today, such as the issue over prayer and Bible readings in public schools.

Public Policy Issues

College education yields high rewards that accrue to individuals and to the communities where they ultimately find employment. Policies that eliminate barriers (informational, ability, or financial) and result in tangible increases in the number of degree holders are interventions that

should be pursued. Considerable effort has already been undertaken to alleviate financial barriers and these efforts have brought results. Effective policies aimed at increasing both enrollment and degree completion rates simultaneously could be equally rewarding. The barriers pose significant challenges and debate over the efficacy and cost of alternative policy options will occur, but in the end, the potential rewards are very high. Empirical estimates capturing the magnitude of these rewards are detailed in this report – including significant monetary returns as well as a long list of non-monetary returns that continue to yield benefits over generations. The availability of local institutions (both public and private) can be encouraged to help meet the local demands exerted by the explosive growth in Arizona's population. National data suggests that more expenditure (both public and private) is devoted towards the production of college graduates in other states than take place in Arizona. Public and/or private investments that lead to tangible increases in degree attainment stand to deliver significant returns to the students that earn the degrees and to the economies where they ultimately live and work and increases in the quality of the education can lead to greater contributions to individual and societal prosperity. While local production is an important component, a narrow policy agenda exclusively focused on producing more college graduates locally is not likely to be sufficient in attaining the ultimate goal of increasing the proportion of productive, highly skilled workers in the labor force. Interventions that encourage quality job opportunities, amenities that attract businesses that offer quality opportunities and a business climate that nurtures entrepreneurship and innovation are important ingredients and high quality local universities can play a key role in crafting this climate. But, broad public policy initiatives that support a high quality transportation, energy/water, communication and education infrastructure will help nurture a business climate that provides gainful employment opportunities needed to retain the graduates that are produced locally. Those opportunities also can serve as a magnet for the mobile set of educated people that are produced each year across the nation.

Economic Development through Higher Education

An argument can be made to include college educational attainment as an economic development policy goal. Educated workers make a net positive contribution to government budgets and they help to raise the wages of all workers in an area. While the share of the total population in Arizona that is college educated is near the national average, the share of college graduates in the state workforce is well below average. One way to realize a high share of

college graduates in a state's workforce is to produce a large number of graduates at local universities. Examples of states that have an above-average share of college graduates in their populations partly because of high rates of local production include Massachusetts, New Hampshire, New York and Vermont. However, given the high mobility of the U.S. population, especially among educated people in general only a modest link exists between local production of degrees and collegiate educational attainment in a state's population. Indiana, Michigan, Missouri and North Dakota are states that produce college graduates at a rate above the national average but have relatively low college attainment in the general population. Therefore, local production alone may not be a sufficient remedy.

Ten Principles of Science Education

- Throughout the years of compulsory schooling, schools should, through their science education programmes, aim systematically to develop and sustain learners' curiosity about the world, enjoyment of scientific activity and understanding of how natural phenomena can be explained.
- The main purpose of science education should be to enable every individual to take an informed part in decisions and to take appropriate actions that affect their own well-being and the well-being of society and the environment.
- Science education has multiple goals. It should aim to develop:
- Understanding of asset of 'big ideas' in science which include ideas of science and ideas about science and its role in society
- Scientific capabilities concerned with gathering and using evidence
- Scientific attitudes
- There should be a clear progression towards the goals of science education, indicating the ideas that need to be achieved at various points, based on careful analysis of concepts and on current research and understanding of how learning takes place.
- Progression towards big ideas should result from study of topics of interest to students and relevance in their lives.
- Learning experiences should reflect a view of scientific knowledge and scientific inquiry that is explicit and in line with current scientific and educational thinking.
- All science curriculum activities should deepen understanding of scientific ideas as well as having other possible aims, such as fostering attitudes and capabilities.

- Programmes of learning for students and the initial training and professional development of teachers should be consistent with the teaching and learning methods required to achieve the goals set out in Principle 3.
- Assessment has a key role in science education. The formative assessment of students' learning and the summative assessment of their progress must apply to all goals.
- In working towards these goals, schools' science programmes should promote cooperation among teachers and engagement of the community including the involvement of scientists.

Conclusion

In this report, we have set out the principles that we consider should underpin the science education of all students throughout their schooling. A key principle is that students should be helped to develop big ideas of science and about science that enable them to understand the scientific aspects of the world around and make informed decisions about the applications of science. For this understanding, students need learning experiences that are interesting, engaging and seen as relevant to their lives. We have considered the progression from small ideas about specific events, phenomena and objects to more abstract and widely applicable ideas and proposed significant aspects of pedagogy that are required to support this progression.

We are well aware that the work is far from definitive, but we hope that by making what we have achieved stimulates further thinking about the goals and procedures of science education that is fit for purpose in the twenty-first century.

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