

RESEARCH, TECHNOLOGY AND QUALITY EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Abstract

The study examined the interplay of Research, Technology and Quality Education in the achievement of sustainable development. Sustainability of development is a major challenge facing many countries especially developing countries. Sustainability of development is the aspiration of every country. Hence, every country invests huge amount of money on factors that contribute to the achievement of sustainable development. The study finds Research, Technology and Quality Education as factors that greatly contribute to the achievement of sustainable development. Also, the study finds out that research through innovations equip people with knowledge to transform their environmental perceptions for environmental sustainability. More also, the study finds out that technology encourages innovations of technical skills for sustaining current and future development. Further, quality education alleviates poverty, contributing to sustainable development by reducing unemployment levels. The study recommends that government of different countries especially developing countries should increase the amount of money invested in research. Secondly, governments should establish more vocational tertiary institutions to help enhance technical skills required in development activities. Finally, governments and non-governmental organizations should collaborate and ensure students in developing economies have access to quality education regardless of their financial backgrounds.

Keywords: Research, Technology, Quality education, Sustainable development.

Introduction

According to Aluwong (2018) sustainability is perceived to be a paradigm for thinking about a future in which environmental, societal and economic considerations are balanced in the pursuit of development. Sustainable development is built on the economy, the society and the environment. Governments and non-governmental organizations are concerned with the ways countries can meet their needs without compromising future generations. Sustainable development is the aspect of engaging in sustainable development activities of sustaining natural resources and services which countries depend for survival. Populations in developing economies lack basic skills to use natural resources sustainably to improve their living standards without compromising needs of the future population (United Nations, 2018).

Sustainable development is conceived by Maclean (2008), as those infrastructures, policies and behaviours that are conceptualized, instituted and maintained over a period of time. These infrastructures are considered essential to the general welfare and continued existence of the people and their immediate environment. This environment includes housing, recreational facilities, agriculture, good roads, water, mineral resources, electricity, schools, industries, transportation, domestic services and good governance. Sustainable development is therefore a continuous and progressive increase in the volume of goods and services provided in a given economy. This could lead to improvement in the social, political and economic life of the present, as well as the future generation.

The interplay of Research, Technology and Quality Education is inseparable in the achievement of sustainable development. Developed countries such as Britain, United States of America, Japan and China invested huge amount of money in research, technology and quality education. Ahuja (2012) acknowledges that these countries were able to have rapid industrialization, accumulation of economic surplus, social equity and low level of unemployment through heavy investment in research, technology and quality education. This finding poses a challenge to developing countries.

Developing countries must drastically increase their investment in research, technology and quality education for the achievement of sustainable development (United Nations, 2018).

Research and Sustainable Development

Today, we are several thousand times scientifically superior to our primitive ancestors. Most of those things that were regarded as mysteries can be scientifically explained through the instrumentality of research. According to Laurie, et al. (2016) research is a dependable instrument that can be employed to conquer one's environment in order to live a more fulfilling life. It is then a systematic way, process or inquiry through which we search for a dependable solution to an existing problem. Research provides sound basis for governments to be more effective in development planning, programme formulation and project execution.

Investing heavily on research contributes to sustainable development. Though research, people are equipped with knowledge to transform their environmental perceptions for environmental sustainability. They are also educated about the impact of environmental pollution by introducing biodiversity to make them responsible actors in preserving the environment (Ferguson, Llisko and Roofe, 2018). In this regard, they acquire knowledge about the importance of preserving forests and modern farming techniques. Therefore, research contributes to environmental sustainability. Research also contributes to sustainable development by unveiling climate change and its consequences (Alexander, Julia and Byun, 2018). A change in climate makes the future unsustainable; hence, it is necessary to prepare people to become environmental conscious citizens helping to protect the environment for a sustainable future.

Technology and Sustainable Development

In this globalized world, technology has become the in-thing as countries and organizations devise means of gaining a competitive edge over others. Technology is generally regarded as the applications of scientific discoveries for the purpose of transforming natural resources into goods and services. According to Cantner and Pyka (2001) technology is a science that focuses on the use of practical skills to produce useful goods. It is a systematic way of exposing individuals to practical task for developing and producing goods and services to meet the needs and wants of human beings. It also deals with developing devices, processes and product designed to control nature for the benefits of human beings. Hence, technology is a necessary factor for improving efficiency, quality of life and increasing the chances of survival.

Technology encourages innovation of technical skills for sustaining current and future development. There is always the need for technological advancement to incorporate activities encouraging innovation to utilize societal resources without exploitation. For example, technology introduces techniques so that people understand how to utilize scarce resources such as land to produce enough food to sustain the growing population without compromising future needs (World Economic Forum, 2015). The population is growing but land and other natural resources are limited, thus the need of innovative technology. Indeed technology contributes in nurturing talents and skills in different countries for sustainable development. Above all, technology equips students with technical and practical skills they can use after graduation to become better and responsible employees and employers.

Quality Education and Sustainable Development

Quality education generally refers to the education system which meets the goals and objectives of the country that sets it up. It means the provision of education that is functional and relevant to the needs of the country. Components of quality education include effectiveness, efficiency and reliability (Sokoli and Hajrizi, 2019). The United Nations has many sustainable development goals

including quality education. Hence, quality education is a fundamental element influencing sustainable development.

Quality education is an essential factor in any country since it contributes to sustainable development. It increases income for individuals and households, thus boosting economic growth. Among the most significant factors dragging economic growth is poverty since people have an insignificant contribution to the economy (United Nations, 2018). According to the United Nations, lack of quality education in poor populations leads to transmission of poverty from one generation to another. In this sense, quality education alleviates poverty levels by equipping people with critical skills in Agriculture to increase food production to meet the needs of the increasing population. Therefore, quality education significantly contributes to improving economic status of poor population. Economics will become wealthy where governments empower people to exploit their talent for economic development and sustenance of human needs.

Similarly, quality education alleviates poverty, contributing to sustainable development by reducing unemployment levels. However, the level of unemployment is growing. Quality education plays a critical role in managing the issues of unemployment by equipping youth with craft skills so that they become self-employed. Employment reduces poverty because people will have alternative sources of income without exploiting their surroundings thereby reducing dependency ratios (Sokoli and Hajrizi, 2019). Poor populations exploit surrounding natural resources for short-term gains, and this has long-term impact on the future population. Strictly speaking, quality education contributes to sustainable development by equipping people with knowledge to engage in economic development activities like modern agriculture and recycling of resources, thus contributing to development sustainability.

Conclusion

Achievement of sustainable development depends on the initiatives, resourcefulness, creativity and discipline of human beings who are managers of developmental programmes. There is an interplay of research, technology and quality education in the achievement of sustainable development. Research gives birth to scientific knowledge which is applied in technology under the light of quality education. Hence, quality education is the driving force of research and technology in achieving sustainable development. Sustainability of development means that every economy should have people with new skills and talents so that they develop new ideas required to sustain development. Conclusively research, technology and quality education are factors that greatly contribute to the sustainability of the development.

Recommendations

Based on the studies above, the following recommendations are made;

1. Government of different countries especially developing countries should increase the amount of money invested in research. Innovative and solution-driven research is the driver that moves and nurtures the engine of economic growth for sustainable development.
2. Governments should establish more vocational tertiary institutions to help enhance technical skills required in development activities. Technology is a critical factor for the achievement of sustainable development.
3. Governments and non-governmental organizations should collaborate and ensure students in developing economics have access to quality education regardless of their financial backgrounds. Quality education is a necessary factor for the achievement of sustainable development especially in developing countries.

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