

## EDUCATING CITIZENS IN SKILLS AND COMPETENCIES RELATED WITH SUSTAINABLE DEVELOPMENT GOALS: AN ASSESSMENT

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### **Abstract**

*For addressing the goal of Educating Citizens in Skills and Competencies related with Sustainable Development Goals, so many universities of higher learning have signed international declarations and have committed to drive in sustainability within their operations, outreach, education, training and research. However, despite the good intentions and policy developments at the national, regional and international level, little has been achieved in terms of education for sustainable development holistically in the curriculum. We need to educate students which create considerable understanding among them for sustainable development at different level of human existence i.e. individual, family, society and nature. It is prerequisite that development of such systems require a careful learning about the traditional practices, critically examining them so that we are able to find out the desirable features and retain them while evolving technologies and system for our present needs. We have to use wisely our traditional wisdom along with the present day knowledge of science and technology for educating citizens in skills and competencies related with sustainable development goals.*

*The purpose of the present paper is to explore the understandings in relation to education for sustainable development competencies and the inputs by the teachers and the parameters drawn thereupon for the SDG would be the proposed model.*

**Keywords:** *Education for sustainable development goals; competencies;*

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*value education; student perception; technology; holistic.*

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## 1. Introduction

It is acknowledged that the development of human capital is an essential drive towards the sustenance of socio- economic and political development of any nation. This informs the massive investment in literacy education programmes for the creation of access and equalization of literacy opportunities to all citizens irrespective of creed and economic status. For addressing the goal of Educating Citizens in Skills and Competencies related with Sustainable Development Goals, so many universities of higher learning have signed international declarations and have committed to drive in sustainability within their operations, outreach, education, training and research. However, despite the good intentions and policy developments at the national, regional and international level, little has been achieved in terms of education for sustainable development holistically in the curriculum. We need to educate students which create considerable understanding among them for sustainable development at different level of human existence i.e. individual, family, society and nature. It is prerequisite that development of such systems requires a careful learning about the traditional practices, critically examining them so that we are able to find out the desirable features and retain them while evolving technologies and system for our present needs. We have to use wisely our traditional wisdom along with the present day knowledge of science and technology for educating citizens in skills and competencies related with sustainable development goals. The United Nations postulated a 17-point Sustainable Development Goals (SDGs) on the 25th September, 2015, that over-rides the 8-point Millennium Development Goals (MDGs). Whereas the MDGs with its targets focused only on developing countries, the SDGs with its 169 targets are all directed toward developing or developed countries. The expansion of the SDGs is due to the failure of most targeted countries to achieve their set MDG targets by 2015. Consequently, the SDGs now maintain a gestation period till 2030.

On this premise, literacy education is critical to the attainment of the 17-point SDGs. This is on account that, these goals can only be achieved using the instrument of non-formal education in developing appropriate

orientation, commitment, attitudinal change and genuine non-formal learning approaches among citizens in taking deliberative actions in altering the current discontenting global situations. Annan (2005) stated that, literacy is at the heart of sustainable development. It is further noted that literacy is a key lever of social change and a practical tool of empowerment on each of the three main pillars of sustainable development, namely: economic development, social development and environmental protection.

Meanwhile, Oghenekohwo (2013) advanced that literacy in capacity is factored by empowerment, engagement, experience and evidence, which represent the variables of education for development. The United Nations (2005) documented that literacy education can be a major tool for reducing poverty, enlarging employment opportunities, advancing gender equality, improving family health, protecting the environment and promoting core democratic values. In recent years, it is reported that many literacy education programmes have become increasingly oriented towards local needs, especially through a focus on community development and environmental protection. Consequently, it is obvious from the brief above that, literacy education is critical to the attainment of sustainable development as it provides enriched version of human capital investment for the attainment of SDGs. International and national agencies have accepted the role of education in building societies based on values of equity, social justice and sustainability and have developed strategies and action plans. The declaration of the United Nations Decade on Education for Sustainable Development (UNDESD) 2005–2014 represented a pedal for the integration of sustainability in all sectors of education across the globe.

It is well noted that the 21st century is not driven by rudimentary skills, which are not consistent with effective depended communication and participation. Acquisition of new dimensions in response to dynamics of social change depends on literacy capacities that need to be supplemented, updated and upgraded so that individuals can respond appropriately to the dynamics of uncertainties with confidence. The fulcrum of the correlation between literacy education and sustainable development is enhancement of active citizenship, creative, adaptive and dynamic people as they shape and re-order their lives. In this respect, literacy education is a pre-requisite for effective social participation, an instrument of empowerment, engagement,

experience and evidence at individual and community levels in response to sustainable development demands.

### **Issues in Research**

As the foundation of learning throughout life, literacy education is at the heart of sustainable development. Yet, it is reported that there are an estimated 800 million illiterate adults, two thirds of whom are women and more than 100 million children are not in school. Most worrisome is that, support for literacy education at all levels of interventions continues to fall well short of expectation. Besides, exclusion of all sorts pervade every nation thereby limiting access to literacy education. How then can the SDGs be achieved within the set timeline of 2030? There is urgent need we revisit literacy education and sustainable development. This of course is inevitable as literacy is essential for sustainable human development in today's complex and fast-changing societies (Matsuura, in UNESCO, 2005).

The principles of ESD have been extensively discussed by several authors. These are those of future thinking, critical and creative thinking, participation in decision-making, partnerships, interdisciplinary and systemic thinking. In an expert review commissioned by UNESCO, key learning processes aligned with ESD are those of collaboration and dialogue, engagement with the "whole system", innovation and active and participatory learning. Integrative and interdisciplinary teaching and learning approaches that can foster sustainability skills, such as problem solving, critical thinking, action competence and systems thinking, seem appropriate because of the complexity that sustainability presents. Furthermore, transformative social learning is required to deconstruct existing ways of knowing and understanding, to critically reflect on the values, beliefs and worldviews that underpin them and to co-construct new shared meanings that can contribute to sustainability. If we think about sustainability as a learning process, lifelong learning is essential as the means to learning to know, learning to do, learning to live together and learning to create generative learning communities towards sustainability. The ability to see the interconnections between different dimensions (environmental, development, social, economic, cultural) and the complexity of systems and

situations can contribute to the effective problem-solving of sustainability issues. ESD is about providing real-world learning opportunities, engaging people in the affective, cognitive and practical domains, and it therefore requires a shift of current thinking, values and practices of individuals, organizations and society.

### **Perspectives on Literacy Education**

How literacy is defined influences the goals and strategies adopted and programmes designed by policy-makers as well as the teaching and learning methodologies coupled with curricula and materials employed by practitioners. Without prejudice, literacy lies at the heart of UNESCO's concerns and makes up an essential part of its mandate, being entwined with the right to education set forth in the universal declaration of human rights of 1948. These concerns according to UNESCO (2004) have to do with promoting the meaningful acquisition and application of literacy education in laying the basis for positive social transformation, justice, personal and collective freedom. Also, UNESCO promoted a positive approach to defining literacy needs and de-mystifying definitions, standards and measurements of literacy. A more analytical perspective came to distinguish literacy as a set of practices defined by social relations and cultural processes – a view exploring the range of uses of literacy education in the entire spectrum of daily life from the exercise of civil and political rights, through matters of vocation, employment, economics or trade, welfare to self-construction, spiritual enlightenment and even leisure (UNESCO, 2004).

In Education for All (EFA) 2000 Assessment, literacy is the ability to read and write with understanding a simple statement related to one's daily life. At an international expert meeting of UNESCO in 2003, an operational definition of literacy education, in particular for measurement purposes was advanced as the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals to develop their knowledge and potentials and to participate fully in their community and wider society (Street, 2003).

Meanwhile, Bhola (1984) noted that in today's world, where we read not only words in a written text, but also a wide variety of other symbolic codes for transforming reality, literacy can be defined as:

the ability of a person to code and decode, smoothly and effortlessly, and with understanding, a living and growing system of symbolic transformations of reality, including words, numbers, notations, schemata, diagrammatic representations and other marks, inscribed on paper or other two-dimensional surfaces (cloth, celluloid or the screen of a computer terminal), all of which have become part of the visual language of a people and have thus come to be collectively and democratically shared by both the specialist and the non- specialist, such ability having become part of the current social, economic, political and cultural demand system of a society (p.260).

In other words, literacy education changed the literate's "technology of intellect" as it provides the acquisition capacities and potentials that were not possible without literacy, such as abstract context-freethinking, and differing ways of describing, classifying, reasoning and inferring based on the acquisition or accumulation of knowledge capital which is passed on to the next generation that underscores sustainable development expectations (Bhola & Gomez, 2008). Literacy education is needed more than ever before, not only to understand media messages better but also to enable us to cope with the technical aspects of the new information and communication technologies which require a minimum level of literacy (UNDP, 2001) for the attainment of a newly contextualized sustainable development elements of economic development, social development, environmental protection, and governance, peace and security. Literacy is then accepted as a driver for sustainable development.

Besides, Bhola and Gomez (2008) reported that a commitment to literacy for all in general and to literacy education for adults in particular has existed for a long time such that, all policy frameworks and public policy instruments on literacy education during the last decade have affirmed the role of literacy in sustainable development. Yet, the quest for sustainable development has recently gained attention as encapsulated in the envisioned sustainable development goals (SDGs). Nevertheless, thoughts and perceptions on

principles, strategies and actions on literacy education clearly underpinned the contemporary understanding of literacy as a continuum of proficiency levels in a given context, such context could be economic, social, environmental and governance, the basis of which is to ensure that no generational gap exist in terms of development as presently subsists.

## **Understanding Sustainable Development**

Many definitions of sustainable development have been postulated, suggested or debated, resulting in a concept that has become broad and somewhat systematically ambiguous. However, in the evolution of the concept of sustainable development, UNESCO (2006) presents the seven milestones in the development of the concept and the project of sustainable development as Bhola and Gomez (2008) noted thus:

- 1972: UN conference on the human environment in Stockholm leads to creation of the United Nations Environmental Programme (UNEP).
- 1987: “Our common future”, the report of the Brundtland Commission, popularizes the term sustainable development.
- 1992: Agenda 21 adopted at the earth summit in Rio de Janeiro as the basis for measuring progress in sustainable development.
- 1999: Launch of the global sustainability index tracking corporate practices.
- 2000: The millennium declaration adopted by UN General Assembly; defines “respect for nature “as a fundamental value and commits” “to integrate the principles of sustainable development into country policies.”
- 2002: The world summit on sustainable development in Johannesburg promotes environmental protection, economic and social development as interdependent and mutually reinforcing.
- 2005: The UN decade of education for sustainable development (DESD) is launched to advance lifelong learning of knowledge, skills and values required for durable social transformation.

These milestones according to UNESCO (2006), led to a more elaboration of the concept of sustainable development which in turn, became linked with paradigms of poverty reduction as well as all forms of exclusions, as mostly associated with financial and development information need of a people.

The Brundtland Commission's report 'Our Common Future' of 1987 which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", has become the accepted standard for conceptualizing the concept. Associated with the 1987 Brundtland Commission definition are three components that measure sustainable development, namely; economic growth, environmental protection, and social equity. These expectations can be achieved by gradually changing the ways in which we develop and use technologies for which literacy education is central. In a related understanding, the United Nations (1992) in addressing development and environmental challenges through global partnership, conceived agenda 21, which again advanced key aspects or elements of sustainability as; economic development, environmental protection, social justice, democratic and effective governance (Hussen, 2004).

Besides, progress towards sustainable development can also be measured by variety of indicators that are applicable at local, regional, national and international levels. Such indicators include economic performance, social equity, environmental measures and institutional capacity. Since sustainable development extends well above economic issues, as it links the economy, environment and society, and as such, no well-articulated and comprehensive economic theory or principle related to sustainable development exists. Consequently, we are of the frame that sustainable development encompasses the view that, a healthy environment is essential to support a thriving knowledge economy and so, all policies and decisions made must take into cognizance both the present and future worth of our resources in order to achieve continual economic development without compromising the environment. These attributes are sustained through literacy education (Hussen, 2004; Wiek, Withycombe, & Redman, 2011).

### **Issues in Sustainability of Literacy Education**

The first issue which this study addresses is sustainability of literacy for sustainable development. Empirical evidences show that, overarching and general sustainability competencies in literacy have been researched, articulated, and evaluated (Wiek et al., 2011). Sustainability competencies in literacy education just like in other disciplines take the form of bullet point



lists which aim to describe unifying themes, concepts, ideas, capacities, abilities, behaviours and knowledge sets that are required to move towards a greater vision of sustainability. Hence, competency in literacy education for sustainable development implies attainment of a wide range of skills, abilities, and behaviours that should be measured and observable (Bertschy, Kinzty, & Lehman, 2013; Wiek et al., 2011), especially as it relates to a knowledge economy as required for sustainable development.

Given that literacy education also depicts a collection of skills that allow for effective participation and influence in diverse areas of social life (Stibbe & Lunna, 2009); it denotes that, literacy education enhances a collection of skills that once achieved and formed, manifest a particular level of competence that can be measured in the future. In this respect, Nolet (2009) posits sustainability of literacy as various abilities and subsequent actions such as problem solving and informed decision making, process that bear on economy, environment, social-well-being and institutional capacities.

Meanwhile, in the connotation of literacy education for sustainable development, Tilbury (2011) reported that sustainability literacy is more than conveying new knowledge, but that it “also means, learning to ask critical questions; envision more positive futures, clarify one’s own values; think systematically; respond through applied learning opportunities and explore the dialectic between tradition and innovation” (p. 13). Once individual gains sustainability literacy, it then becomes possible to be empowered to: (a) approach society with a critical lens, (b) advance knowledge to others, (c) make informed decisions, and (d) contribute to re-thinking intrapersonal, interpersonal, intergroup, and intergroup conceptions of society and the environment (Berstschy et al., 2013; Nolet, 2009; Stibbe & Luna, 2009). Literacy education gives rise to a knowledge economy.

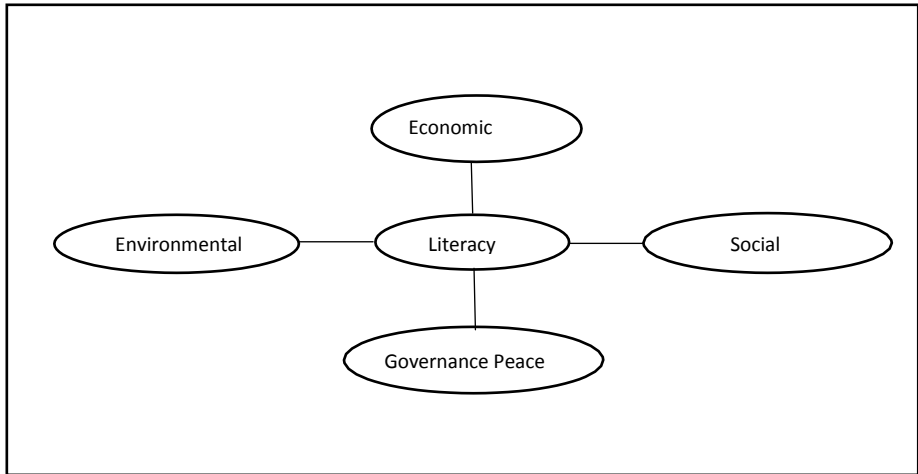
The second research issue is on the correlation between literacy education and empowerment, engagement, experience and evidence as encapsulated in knowledge economy for sustainable development. The elements of sustainability literacy (Berstschy et al., 2013; Nolet, 2009) are those that are drivers of a knowledge economy. This is because; a knowledge economy does not only sustain the indicators of sustainable development, but also

ensure that the indexes of sustainable development indicators are constantly measurable and observable.

Literacy education is basic to the achievement of economic success which is increasingly based on the effective utilization of intangible assets such as knowledge, skills and innovative potentials as the key resource for competitive advantage. The term knowledge economy is used in this context to describe the emerging economic structure which Smith (2000) noted that, from various arguments, we are moving towards a new “knowledge based economy” or “knowledge society in which the role and significance of knowledge as input to economic processes has fundamentally changed.

In a related submission the OECD (1999) conceptualized knowledge economy as “those which are directly based on the production, distribution and use of knowledge and information. This is where literacy education for sustainable development is central to our discourse. It is plausible to posit that, knowledge economy is a system of production and consumption that is based on intellectual capital. In this stance, without literacy, knowledge cannot be developed, acquired and utilized for the development of any type of economy. Whether less-developed, developing and developed economies, literacy education is a critical factor to the changing dynamics in the index of sustainable development. As such, literacy education enhances the creation, acquisition and utilization of knowledge which is then translated into overall sustainable development indicators in the society.

The final issue of interest in this study is that, literacy is basic in SDGs context to facilitating citizen’s value re-orientation and attitudinal change for the acquisition of vocational and functional skills and knowledge that are beneficial to the individual and collective drive for a literate society, as well as for attainment of sustainable development goals. The link between literacy education and the attainment of sustainable development goals (SDGS) by 2030 is evident in figure 1 below.



**Figure-1** Literacy: a driver for sustainable development (Source: UNESCO, 2016)

In this respect, the 17-point sustainable development goals (SDG) as reported in the New York Times (2015) indicates that, literacy education is central to decrease vulnerability goals (see goals: 1,2,3,4,5,6,7,10,16) and increase sustainability goals (see goals: 8,9,11,12,13,14,15,17). In other word, through literacy education, nine goals which are aimed at decreasing vulnerability and eight goals geared at increasing sustainability can be attained. Literacy education is an essential factor for changing orientation towards active participation in activities or actions to decrease individual and community's vulnerability as well as increasing people's capacity to sustainability in a knowledge driven system.

### **Conclusion and Recommendations**

This study suggests that understanding ESD as an education that focuses mainly on the natural environment, instead of providing a more integrated vision, where the social, environmental, economic and cultural aspects are interrelated and essential to work in the educational environment to provide students with a more holistic and complex worldview. The challenge is to consider more deeply the competence vision on ESD of future teachers and to continue in this line of research. The outcomes of this study show the need to elaborate on and specify the competencies framework. This would enable a more practical approach to ESD competencies in student teacher

training and, at the same time, work on the elaboration of evaluation tools that can inform the different levels of achievement in the acquisition of competencies. The development of teaching and learning processes and evaluation strategies towards the improvement of ESD learning is an essential step to contribute to better teacher training in this area at the university level. The students should be able to acquire the ESD competencies that enable them to cope with the different sustainability challenges that current society is facing. Therefore, it is necessary to assess whether this training provides them with the knowledge, practical skills, tools, attitudes and ethical values that will allow them to deal with these challenges. Developing literacy education through massive investment in human capital is the first step in enhancing sustainability literacy. There are two mindsets on the attainment of the 17-point sustainable development goals. First, is on decreasing human vulnerability with focus on nine goals. Second, is on increasing sustainability with focus on eight goals. Literacy education on the environment, production, preventative actions, personal income generation and improved human capacity, social justice through the sustenance of democratic institutional structure among others, will enhance sustainable development in any knowledge economy. It is recommended that; sustainability of literacy education should be part of public policy instruments to promote sustainable development. Second, for literacy education to drive knowledge economy it must be futures, values, systems, and strategic thinking respectively to ensure sustainable development

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