

**EDUCATION: THE PERPETUAL PASSAGE TO SUSTAINABLE DEVELOPMENT****Krishanu Guha Majumder****Abstract**

*Sustainability is a paradigm for thinking about a future in which environmental, social and fiscal considerations are balanced in the pursuit of versatile development and an improved quality of life as well. These three spheres – society, environment and economy– are intertwined. All sustainable development programmes must consider these three spheres of sustainability–environment, society and economy–as well as an underlying dimension of culture. Since sustainable development addresses the local contexts of these three spheres, it takes numerous forms around the world. Education for Sustainable Development (ESD) is education, which promotes the balancing of economic growth, environmental conservation, cultural diversity and social well-being in a way that is inclusive of marginalized population and attends to gender issues (UNESCO, Federal Ministry of Education and Research, & German Commission for UNESCO, 2009). Education for sustainable development calls for a multiple-perspective approach.*

*Various studies and path breaking researches have indicated that there exists a wide-ranging multifaceted relationship among the provision of education and the society, environment and economy throughout the globe.*

*In this article we would like to confine ourselves to understand, in a simplified manner, the interaction between education and economic development to initiate the sustainable development. In the first part of the essay we tried to understand various aspects of sustainability. In the second part we attempted to understand the nature of the observed correlation / relationship exist between education and other various aspects of sustainable development which assure social sustainability. We would definitely akin to understand this complex relationship in a common man's language. Otherwise we may figure out the relationship, may appreciate too, but the concept may not SUSTAIN in our mind, in our practice.*

**Key Words:** *ESD, Sustainability, Sustainable Development, Economic Development, HDI, Social Sustainability Index.*

**Introduction****Understanding Sustainable Development**

*“... Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (the Bruntland Commission Report, 1987) - Probably the easiest way to describe the concept of Sustainable Development. Sustainability is a dream for enhanced quality of life. Sustainability is the sign of a never-ending process of development suggesting an environmentally, socially and of course economically balanced, ever improved future.*

If we provoke ourselves to imagine a future world where there is lesser poverty, no gender inequality, no unequal distribution of wealth, no racism, prominent existence of a secured society, rule of law, mutual respect among different spheres of the society, enhanced quality of life, restoration and preservation of the environment – then surely we are thinking about sustainability.

If we are so imaginative then it would not be too hard to recognize the causal interaction between *our dreamt future* and

1. The need of such technologies which shall improve production without deteriorating the quality of environment;
2. The need of social mechanism to lessen societal inequalities;
3. The practice of good governance to fetch the best of a stronger civil society with unprejudiced judiciary, sensitive government and of course,
4. The process of economic development that aims to enhance better level of living by raising income per head and developing productive capacity.

Over the past thirty years hundreds of definitions of sustainability and sustainable development have been made. Many of these have one major item in common: *to survive – for human beings – in the long run.*

Though definitions may differ in scope, it is now widely accepted that sustainability comprises all three elements mentioned above. Thus sustainability is about<sup>1</sup>

1. Us, human beings      Human / Social Wellbeing
2. The environment, the ecosystem in which we live      Environmental Wellbeing
3. The economy, which enables us to do what we do      Economic Wellbeing

The *paradigm of Sustainability* has the need of the initiation of the process of *Sustainable Development* within the three indispensable as well as intertwined bubbles of the orb – the environment, the society and the economy.

Trade-offs between the processes of development of these three intertwined spheres are not really accepted. It is not worthy to compromise the *Environmental Wellbeing* for achieving *Economic Wellbeing* or just to forget about the *Human/Social Wellbeing* while rushing for *Economic adds up*. The basic dream is to achieve a world spread *eudaemonia*.

### Prosody of Sustainability

A many sets of indicators have been developed over time to understand the level of sustainability. Unlike GDP, developed by Simon Kuznet in late 1930s', which designed to measure only the market value of production that flows through the economy, other indicators of social sustainability tries to include social / human, environmental and of course economical aspects of development to understand the locus of social sustainability around the globe. To name a few significant and popular measures used to realize the relative and somehow absolute state of sustainability around the globe we may mention the SNI – *Sustainable National Income* (developed, in 1974 , by Dr. Roefie Hueting, Foundation for research on Sustainable National Income (FSNI)), *ISEW – Index for Sustainable Economic Welfare* (based on a study by Daly and Cobb in 1989 and more or less taken care of by New Economics Foundation, NEF), *HDI – Human Development Index* (created by the Pakistani economist Mahbub ul Haq and the Indian economist Amartya Sen in 1990 and was published by the UNDP), *DJSI - Dow Jones Sustainability Indexes* (Dow Jones Indexes and SAM Indexes GmbH), *SSI – Sustainable Society Index* (Sustainable Society Foundation, The Nether Lands), *MPI – Multidimensional Poverty Index* (Oxford Poverty & Human Development Initiative and the United Nations Development Programme), *SPI- Social Progress Index* (The Social progressive Imperative, USA).

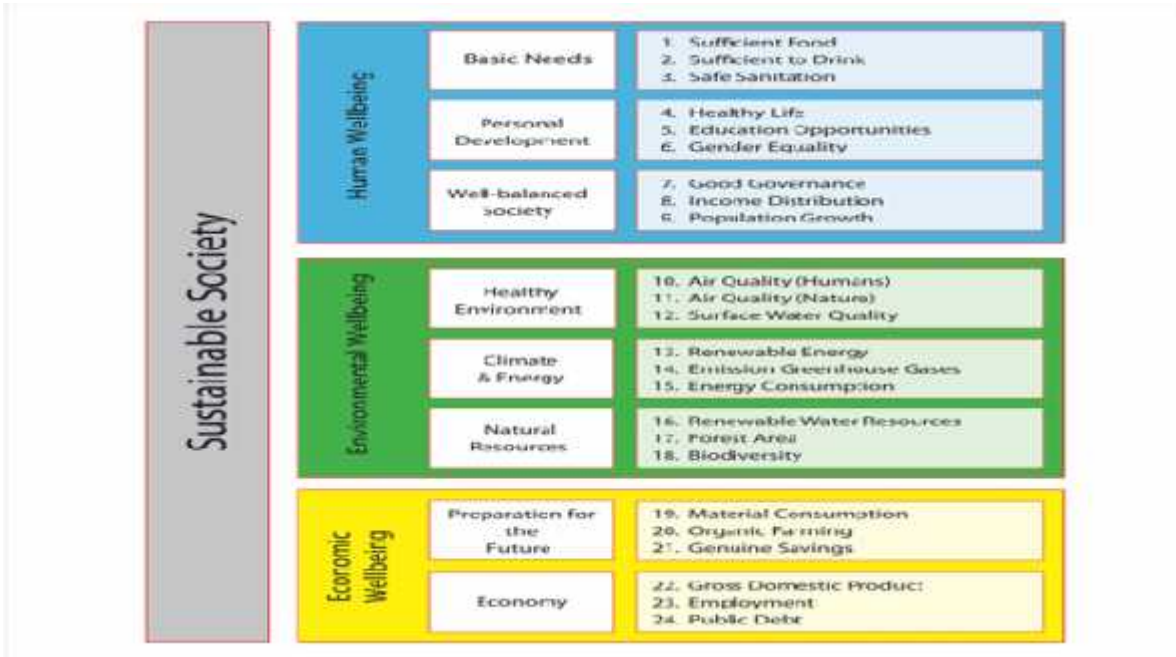
Let us consider the concepts of only four such measures, viz. HDI, SSI, SPI and MPI in our present article to recognize the relationship among education and sustainability.

The Human Development Index (HDI) was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how, say, two countries with the same level of GNI per capita can end up with such different human development outcomes. HDI reflects a composite statistics of three broad dimensions – life expectancy, education and a decent standard of living. To weigh up such dimensions the HDI uses indices like Life Expectancy at Birth, Education Index, GNI per capita (PPP US\$) Further the Education Index is counted on two indices, viz. Mean Years of Schooling Index (MYSI) and Expected Years of Schooling Index (EYSI).

According to Kerk & Manuel, the concept of Sustainability is about *Human / Social Wellbeing, Environmental Wellbeing and of course Economic Wellbeing*. For gauging the level of sustainability of the society they have conceptualized and formulated *Sustainable Society Index (SSI)* all over the world since 2006 The SSI being an indicator of social sustainability takes account of three well-being dimensions divided into eight categories measured upon twenty one indicators. The latest SSI published for the year 2012. It has been identified that 13

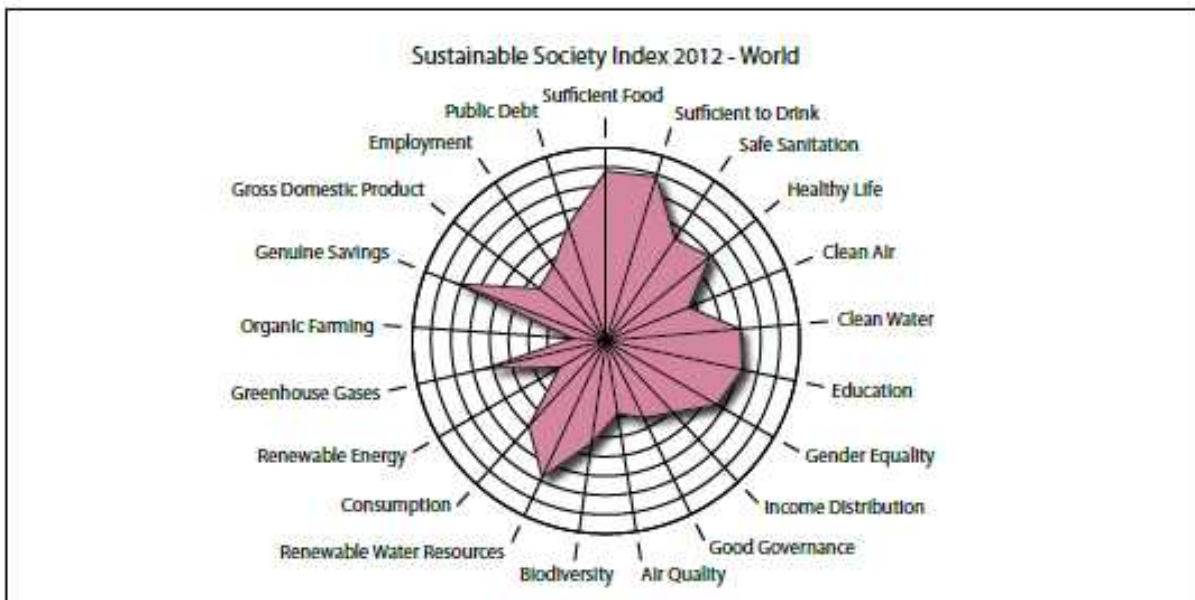
indicators have made progress, 7 are in decline (*Clean Water, Genuine Savings, Consumption, Renewable water Resources, renewable Energy, Greenhouse gases and Employment*) and 1 indicator (*Good Governance*) stayed equal over the years between SSI-2006 and SSI-2012.

Box 1: Dimensions and Indicators of a Sustainable Society as suggested by Kerk & Manuel



Source: (Kerk & Manuel, Sustainable Society Index 2012, 2012)

Box 2: Sustainable Society Index – Level of Sustainability



Source: (Kerk & Manuel, Sustainable Society Index 2012, 2012)

Note : The spider web graphs show the level of sustainability. The outer circle expresses full sustainability, a score of 10 (on a scale of 1 to 10); the inner circle of the web expresses no sustainability at all, a score of 1. The target for each indicator is the outer circle, a sustainable 10.

The Social Progress Index (SPI) offers a rich framework for measuring the multiple dimensions of social progress, benchmarking success, and catalyzing greater human wellbeing. The SPI considers three basic dimensions with twelve indicators. The considered dimensions are Basic Human Needs (Nutrition and Basic Medical Care, Water and Sanitation, Shelter, Personal Safety), Foundations of Wellbeing (Access to Basic Knowledge, Access to information & Communication, Health & Wellness, Ecosystem Sustainability) and Opportunity (Personal Right, Personal Freedom, Tolerance and Inclusion, Access to Advanced Education).

On the other hand, the MPI is an index of acute multidimensional poverty. It reflects deprivations in very rudimentary services and core human functioning for people across 104 countries. Although deeply constrained by data limitations, MPI reveals a different pattern of poverty than income poverty, as it illuminates a different set of deprivations. The index uses the same three dimensions as the Human Development Index, such as health, education, and standard of living. These are measured using ten indicators.

### Box 3: Dimensions of Multidimensional Poverty Index

Dimension	Indicators
Health	Child Mortality; Nutrition
Education	Years of school; Children enrolled
Living Standards	Cooking fuel; Toilet; Water; Electricity; Floor; Assets

Source: (OPHDI, 2014)

All these four measures consider common dimensions such as educational, health and economic aspects of development. It can be envisaged that for any society, or we may say any country, all such measures are definitely more or less influenced by the quality and accessibility of education, health and the strength of economic aspects. As any kind of trade-offs between these three intertwined spheres of development are not really accepted it is expected that there is some positive relationship between these spheres. That is, it is expected for sustainability, a qualitative and quantitative augmentation of educational aspects of development has some affirmative impact on other aspects such as health, society, education and vice versa. Without such positive relationship the notion of sustainability voids.

### Education and Sustainable Development

Education is complex. Policies and practices, as well as inputs, processes and outcomes, stand in a dynamic relationship with each other. As suggested by Wikipedia, "Education in its general sense is a form of learning in which the knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, or research.. And, of course, an individual (being a person or a society) can just evolve sustainably and consistently, if and only if, all evolve together

For sustainable development, the society needs active and efficient players to promote social governance. Education, in a true sense, brings out the very best of the populace with constructive, creative, cognitive mindset which in turn is basically the "unfoldment of what is already enfolded in the germ (Froebel)". Education is comprehended as to involve organized and sustained communication designed to bring about any valuable, sensible and practical improvement in societal behavior, information pattern, knowledge base, understanding, attitude, values and skills. The ideation of education best portrayed by Swami Vivekananda, "education is the manifestation of the divine perfection already existing in man".

Perhaps now we have an understanding of the concept of sustainability and sustainable development. Now within the scope of this article we would like to explore the contributory characteristics of education, however the way of modern education, upon the economic and social development required, at least theoretically, to initiate the process of Sustainable Development.

For any society, more purposely, for a country, the prevailing educational system is the moral fiber to affect the values and skills of the population which is responsible for any viable development or for the underdevelopment. As well, for any society or country, the prevailing educational system is essentially influenced by the cultural, social, political, administrative and obviously the economic structure. It may not be an exaggeration if we state, in a broad sense, that education is both cause and consequence of social, economic sustained development.

### **Education and formation of Human Capital**

Education educates. That is verbatim. An orderly patterned educational system triggers various paybacks to the individual and social life. Education brings more educated workforce with better efficiency and innovative ideas which subsequently contributes to better productivity and thus to economic growth. Education helps to create human capital by improving knowledge, habits, social and personality attributes, including creativity, cognitive abilities which fascinatingly embodied in the ability to perform labour so as to produce economic value.

Human Capital transforms creativity, knowledge and skills into innovations, which are then embodied in products, processes and organisations. But innovative capacities needed to be nurtured. Here the issue of sustainable education popped up. For all modern societies basic education is inevitable and provision of basic education is universal. The access to secondary education should get the priority the same as the basic education generally gets. But in the case of expansion of upper secondary and tertiary education system, market gives some guidance, but not enough<sup>2</sup>. The expansion of upper secondary education and tertiary education have been driven by increasing demand from the market and changing policy of the existing government ranging from a more flexible curriculum, a reshaping of vocational studies, and efforts to expand access to education to the entire population.

The upper secondary and the tertiary education are about skill development. Human Capital operational with greater than ever sophisticated multi-tasking skill, is the global demand. Markets are expecting workforce (a) to be efficient enough to apply readily the accrued knowledge for sorting out the various unanticipated practical problems, (b) able to renovate existing technologies to better ones with effective exploitation considering the need of the time and thus produce new knowledge for the generation to come, (c) to work collaboratively and to communicate effectively. What is more, this expectation is inexhaustible. Consequently, without the creation of high skilled human capital, any society or country has to face the problems associated with unemployment, nonexistence of technical up-gradation which ultimately hinders the process of economic growth thus economic development.

The educational institutions and workplaces needs to provide quality training to meet the demand of the sustainable knowledge society. To evaluate the quality and the quantity of skills in the population, any country has to implement policies that encourage educational institutions and workplaces to develop those types of skills which are required to address the existing and future jobs. Not only that, the government also has an important role to play in this regard. Government should formulate such policies which ensures that the skilled labour force have enough economic incentives in returns of their skill offering.

Provision of 'life-long learning' plays a very important role in skill development since such practice helps people to continuously upgrade their skill and knowledge. *Capacity Building* through continuous training, orientation & sensitization programs is particularly effective to promote *Good Governance* within the public and/or private sectors. Such practices have stimulus to the production process and thus help the economy to grow.

Any economy has to undergo economic obscurity for any inequalities, no matter qualitative or quantitative, between the demand and supply of the skilled human capital. Ultimately, skill is not at all analogues to the notion "to execute the known things" rather it is the ability to execute innumerable unprecedented challenges by making the most of the accumulated knowledge base.

Countries with high levels of education tend to become wealthier, so there's more money to spend on further expanding education. Historical evidence from countries like Germany and the United States indicates that the advent of mass education around the end of the 19th century predated large-scale economic growth. In more recent years, Asia's "tiger economies" – Singapore and Korea among others – all had relatively high literacy levels before embarking on ferocious growth spurts in the 1980s and early 1990s

Despite of having a populace of more than billion people, India is suffering from a shortage of well-qualified graduates. The lack of suitably qualified staff is crimping growth and pushing up salaries of existing workers. More broadly, India's population has much lower levels of education than, say, China's. Only 61% of Indian adults can read; in China the figure is more than 90%, says UNESCO. That gap is one of several factors commonly cited for China's faster pace of economic growth since the early 1990s.

Moreover, if the economy of the country as well as the existing government policies failed to ensure economic incentives to the skilled labour force in returns of their skill contribution then the most possible economic outcome is the "Brain Drain" resulting departure or emigration of skilled individuals with technical skills or knowledge from organizations, industries and geographical regions. Brain Drain usually involves the loss of human capital which is vital to the development of society and the country as a whole.

On the other side, the host country is getting an additional human capital, the *Brain Gain*, to balance between the supply and demand of labour force which may increase the production and thus escalating the economic development. <sup>3</sup> As well, the country of origin exporting their skilled and highly educated workforce may also be benefitted due to the fact "skilled migrants leaving the country generate increased demand for higher level education amongst the (native) population".

**Table 1: Brain Drain: Emigration Rates by region of origin and by skill level, 2000-01 and 2005-06**

	India			China			Asia		
	Emigration Rate in percent								
Year	Low Educated	Intermediate Educated	High Educated	Low Educated	Intermediate Educated	High Educated	Low Educated	Intermediate Educated	High Educated
2000-01	0.1	0.2	3.2	0.2	0.1	1.8	0.3	0.5	3.3
2005-06	0.1	0.2	4.2	0.2	0.1	1.7	0.3	0.5	3.7

Source: Extracted from Database on Immigrants in OECD Countries (DIOC), 2000 and 2005-06; Barro, R. and J.-W. Lee (2010), "A New Data Set of Educational Attainment in the World, 1950-2010", NBER Working Paper, No. 15902, Cambridge, Massachusetts.

China and India have recently been discovered to be at the top of the list of countries suffering from the phenomenon of brain drain. Indian government has yet not adopted any strict policy to prevent the continues suffering of rain drain believing the overseas talent shall eventually contribute to the nation in future.

**Education and Human Development**

HDI is a composite statistics of Life Expectancy at Birth, Education Index, GNI per capita (PPP US\$). Let us examine the relationship between the Education Index and GNI per capita (PPP US\$) within HDI framework. Here we use HDI statistics provided by the UNDP which was used to prepare the 2012 HDI Ranking. From the database, 49 countries worldwide have been selected for identifying the relationship in the following manner.

**Table 2: Categories of Selected Countries**

<u>Sl. No.</u>	<u>Status of Human Development</u>	<u>Nos. of Countries</u>
1	Very High Human Development	19 Nos.
2	High Human Development	10 Nos.
3	Medium Human Development	13 Nos.
4	Low Human Development	10 Nos.
Total Nos. of Countries		49 Nos.

To weigh up such dimensions the HDI uses indices like Life Expectancy at Birth, Education Index, GNI per capita (PPP US\$)<sup>4</sup>. Further the Education Index is counted on two indices, viz. Mean Years of Schooling Index (MYSI) and Expected Years of Schooling Index (EYSI).

From the following table we can see that there is significant relationship between the educational indicators and other indicators of economic and health aspects within the HDI Framework (analysis based on available data of HDI of the 49 countries).

<b><u>Table 3: Relations between Education Indicators and Other Indicators Within HDI Framework</u></b>					
<u>S.N</u>	<u>Category</u>	<u>Test Between</u>		<u>Observed Relationship</u>	<u>Expected Relationship</u>
1	Economic and Educational Dimension	2010 Mean Years of Schooling	2012 GNI Per Capita (PPP US\$)	High Positive Correlation or Relationship	Years Spent on School shall have an positive impact on GNI per capita in near future.
2	Economic and Educational Dimension	2011 Expected Years of Schooling	2012 GNI Per Capita (PPP US\$)	High Positive Correlation or Relationship	Expected years of schooling of child entering infant school shall have a positive impact on GNI per capita in future.
4	Economic and Educational Dimension	2002-2011 Gross Enrollment Ratio - Secondary	2012 GNI Per Capita (PPP US\$)	High Positive Correlation or Relationship	Better Gross Enrollment Ratio at Secondary Level shall have positive effect on GNI per capita in future
5	Economic and Educational Dimension	2002-2011 Gross Enrollment Ratio - Tertiary	2012 GNI Per Capita (PPP US\$)	High Positive Correlation or Relationship	Better Gross Enrollment Ratio at Tertiary Level shall have positive effect on GNI per capita in future
6	Economic and Educational Dimension	2002-2011 Primary School Dropout Rate (%)	2012 GNI Per Capita (PPP US\$)	Negative Correlation or Relationship	Dropout Percentage at Primary Education Level shall adversely affect the future GNI per capita.
8	Health and Educational Dimension	2010 Mean Years of Schooling	2012 Life Expectancy at Birth	High Positive Correlation or Relationship	Education shall improve concern about health and thus may help to improve Life Expectancy (at birth).

10	Health and Educational Dimension	2002-2011 Gross Enrollment Ratio - Secondary	2012 Life Expectancy at Birth	High Positive Correlation or Relationship	Education at secondary level shall improve concern about health and thus may help to improve Life Expectancy (at birth).
11	Health and Educational Dimension	2002-2011 Gross Enrollment Ratio - Tertiary	2012 Life Expectancy at Birth	High Positive Correlation or Relationship	Education at tertiary level shall improve concern about health and thus may help to improve Life Expectancy (at birth).

Source: Please refer to Annexure 1, 1A and 2

Table 3 broadly suggests that educational attainment and accessibility is efficiently related to the economic and health issues of a country. Educational attainment and accessibility helps to build the human capital which in turn contribute the production process by innovation and invention. Education on the other hand sensitizes the mass about health, environment which are the other important aspects of over all human development.

Nevertheless, education plays a very effective role in economic development of the world as a whole. There should not be any doubt about the fact that the individual society or what we may say the economy is truly benefitted, in terms of both absolute and relative measures, by the wide-ranging accessibility, availability and expansion of education.

**Education and Social Development**

To realize about the relationship between the educational aspects and the social development we give consideration to the Social Sustainability Index (SSI)<sup>5</sup>. The latest SSI was published in 2012. Considering the database provided by the Sustainable Society Foundation<sup>6</sup> for the SSI 2012 we shall try to understand the desired and observed relationship.

<b>Table 4 : Relation between Educational aspects and other aspects of Social Sustainability under SSI framework</b>					
Sl. No.	Relation between	Test Between		Observed Relationship	Expected Relationship
1	Education and Basic Need	Educational Score	Score of Basic Need	High Positive Correlation or relationship which is statistically significant	Educational Score and Score of Basic need will have a positive relationship
2	Education and Personal & Social Development	Educational Score	Personal & Social Development Score	High Positive Correlation or relationship which is statistically significant	Education shall have great positive impact on Personal & Social Development
3	Personal & Social Development and Human Wellbeing	Personal & Social Development Score	Score of Human Well-being	Very High Positive Correlation or relationship which is statistically significant	Individual Personal and Social Development is important for overall human well being

Source: Annexure 3



From Table 4 we can recognize observed relationship among provision of education and Personal and Social Development which promises better Human Well Being as higher educational score is mostly related to higher score of 'personal & social development' which is again positively correlated with the higher score of 'human wellbeing'.

### Conclusion

We should agree that education is the most effective means that society possesses for confronting the challenges of the days to come. Indeed, education will shape the world of tomorrow. Education, to be certain, is not the whole answer to every problem. But education, in its broadest sense, must be a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment. Qualitative education is imperative for sustainability. Education has pragmatic noteworthy effect on other aspects of sustainable development such as economics, health, society, and environment which are successively obliging the *sustainable educational development*. Education is the part of that virtuous cycle where the societies become enriched by the prerequisite of qualitative education and persuade enormous momentum for further development within the educational aspects of the society and the process goes on, sustainably.

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