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Dear Patrons,

Greetings from Graduate School of World Problems. We are glad to present you with the first issue of our journal "World Solutions".

As you already know, Graduate School of World Problems was founded in 1984 by the founders of the World Constitution and Parliament Association to provide for study of World Problems and research and share the solutions applicable universally.

To facilitate this mission, various Centers of Excellence (COE) have been created under GSWP to address the issues related to the global challenges in areas as in Art.7.3 of the Constitution for the Federation of Earth. Focus on all the 28 global challenges will be ensured in the future editions of this journal and the same will be shared with all the 109 WCPA member countries of the world.

Thanks to all the members of the Editorial Board for their active support and cooperation and our appreciation with thanks to all those who contributed to this initial edition.

Happy Knowledge Sharing !

Chief Editor



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“ All mankind would be grateful for all time to the statesman who could bring about a new structure of international society.”

Theodore Roosevelt
Politician, 26th US President

How to Really Transform Our Broken World System

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Abstract. This paper argues that the UN SDGs cannot be actualized under the current world economic and political system. It therefore begins with an overview of that system. The paper then presents an overview of the climate crisis, since it is important to realize the severity of this crisis and the possibility of it leading to human extinction. It then reviews the 17 UN SDGs in turn, comparing each one with how it is addressed by the Earth Constitution. It points out not only the hidden presuppositions behind these goals but also the huge factors that are omitted, namely the population explosion and global militarism. In sum, it shows that a sustainable world system can only be achieved through ratification of the Earth Constitution.

1. The World-System background for the formulation of the SDGs

In September 2015 some 193 countries signed the UN Sustainable Development Goals document called “Transforming our world: the 2030 Agenda for Sustainable Development.” The document’s Introduction states that “all countries and all stakeholders, acting in collaborative partnership... are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet.... The 17 Sustainable Development Goals and 169 targets we are announcing today demonstrate the scale and ambition of this new universal Agenda.”

The SDG Agenda appears globally transformative and complete on the surface and embraces the

range of global problems that have been facing humanity since consciousness of impending environmental collapse began widely dawn upon people during the 1960s. Here I list the 17 goals as briefly as possible in order to reveal their range and scope: (1) No Poverty (2) Zero Hunger (3) Good Health and Well-being (4) Quality Education (5) Gender Equality (6) Clean Water and Sanitation (7) Affordable and Clean Energy (8) Decent Work and Economic Growth (9) Industry, Innovation and Infrastructure (10) Reduced Inequality (11) Sustainable Cities and Communities (12) Responsible Consumption and Production (13) Climate Action (14) Life Below Water (15) Life on Land (16) Peace and Justice Strong Institutions (17) Partnerships to achieve the Goal.

This ambitious agenda to be accomplished by the year 2030 for the entire planet comes upon a history of failure by the UN to achieve any reasonable environmental goals in partnership with the world’s nations. The first major UN Conference on the environmental crisis took place in Stockholm in 1972. Thereafter, meetings took place and agreements were formed in the Montreal Protocol of 1987 and the Kyoto Protocol of 1997, which committed state parties to reduce greenhouse gas emissions. Another huge UN meeting was organized for Rio de Janeiro in 1992, during which the participants formulated the famous “Agenda 21” document that demanded significant reductions in CO2 emissions by the year 2000. Then in March 1994, the UN Framework Convention on Climate Change (UNFCCC) went into effect with 197 member countries – nearly all the world. UNFCCC committed nations to act even in the face of scientific uncertainty concerning climate change.

However, at the 2002 UN environmental conference in Johannesburg, South Africa, it was clear that the Agenda 21 goals had not been reached. This admitted failure of nations and corporations to address the crisis in meaningful ways led to a new and more comprehensive set of goals called the Millennium Development Goals (MDGs). The MDGs went into effect between 2000 and 2015.

The historic Paris Climate Agreement took place in 2015 and included 196 countries. This agreement modified development priorities so that collectively the planet would not continue warming more than 1.5 to 2 degrees centigrade above pre-industrial levels. The Intergovernmental Panel on Climate Change (IPCC) agreed on this limit as absolutely imperative for our human future, stating that each nation-state must “prepare, communicate and maintain successive nationally determined contributions” to achieve these objectives.

However, the 2015 Paris Agreement also stated: “Each climate plan reflects the country’s ambition for reducing emissions, taking into account its domestic circumstances and capabilities. Guidance on NDCs [nationally determined contributions to CO2 emissions reductions] are currently being negotiated under the Ad Hoc Working Group on the Paris Agreement (APA), agenda item 3.” Based on this nonbinding and inadequate standard, participants concluded that the Millennium Development Goals were themselves not sufficiently encompassing. Therefore, a more thorough set of 17 Sustainable Development Goals (SDGs) was drafted, including 169 specified “targets” that spell out more concrete details. In the end, the elaborated SDGs were approved by the General Assembly, but the framework assumptions of our world system were never examined.

To summarize, UN and national representatives have been meeting annually since 1972 to focus on climate change. Though agreements have initiated changes in the behavior of some nations and corporations, there is consensus among climate scientists and environmental experts that the modest improvements have been wholly inadequate to address on-going climate collapse (Maslin 2013; Lenton 2016). The 2019 “Sixth Assessment Report” of the Intergovernmental Panel on Climate Science describes our planetary situation as “dire.” Today, there is common recognition that humans have failed to deal with the problem and the crisis is worsening year by year.

2. Our Planetary Climate Crisis

For the past decade or more, top environmental scientists have been speaking of “the end of the world” (Speth 2008), of the human project beginning to “falter” (McKibben 2019) or of “the uninhabitable Earth: life after warming” (Wallace-Wells 2017). As the population of the Earth continues to explode, adding about 80 million new persons every year, the conditions on Earth that can support life continue to collapse throughout the ecosystem. CO2 and methane continue to dramatically increase in the atmosphere of the planet leading to a possible unstoppable greenhouse effect and the superheating of the Earth to the point where human beings and many other creatures become extinct.

The consequences of this are explained by Romm(2018) and many other climate experts: (1) sea levels are rising and flooding coastal lands (with the near certainty of flooding nearly all major coastal cities worldwide), (2) oceans are acidifying and fisheries are dying, (3) massive degradation and disappearance of agricultural lands, (4) heat increasing on Earth to the point of making entire regions uninhabitable, (5) unprecedented spread of insects, pests, and diseases, (6) massive species extinctions as ecosystems collapse, (6) deviating wildfires contributing to deforestation, CO2 release, desertification, and species extinction, (7) devastating superstorms across the planet. All these are happening now, as confirmed by the 2019 IPCC report, and to this date (January 2021) nothing adequate is being done in most countries around the planet.

The United Nations gives as a reason for the failure of the Millennium Development Goals was that they were not comprehensive and inclusive enough. They were not adequately directed toward holistic, integrated transformation of all fundamental human problems such as poverty, gender equality, education, and comprehensive human well-being. But this is not the real reason for our planetary failure as this paper will make clear. The real reason is that the SDGs have been projected onto an economic and political world-system utterly

incapable of addressing and actualizing them. This world-system is presupposed by and embodied within the UN itself.

3. Economic Crisis and Nation-States within the World System

We live in a world-system that originated at least as far back as the 17th century in which a capitalist economic order is integrated with a political order of militarized, territorially bound, nation-states. Critical economists and world systems theorists have together articulated the dynamics of this world-system, which has become truly globalized in the past half century. Boswell and Chase-Dunn affirm that, “Capital accumulation have always involved political power and coercion” (2000, 24). Hence, “national sovereignty itself is a principle imbedded in the origin and functioning of the capitalist world-system” (ibid., 54). Petras and Veltmeyer state that “the economic interests represented by these capitalist corporations converge with national interests advanced and protected by the nation-states that make up what can be termed the ‘imperial state system,’ a system currently dominated by the US state” (2005, 25). Ernesto Screpanti declares, “the vastness of the U.S. economy has created a certain synergy between fiscal, monetary, and war policies, so that the pursuit of each of the three functions has facilitated realization of the others” (2014, 72). Hence, in the US as the center of today’s empire, a militarized nation-state (war policies), is used to complement and promote the capitalist ideology that is imposed worldwide (its fiscal and monetary policies). David Harvey speaks of the “dialectical relationship” between the nation-state and the economic sphere. They are necessary to one another in the process of endless growth and striving for ever-greater capital accumulation on the part of corporations, bankers, capitalists, and the political-military power centers of nation-states.

In his book *The New Imperialism*, Harvey writes, “I will try to keep the dialectical relationship between the politics of state and empire on the one hand and the molecular movements of capital

accumulation in space and time on the other, firmly at the center of the argument” and he speaks of “the importance of the state as a territorialized framework within which the molecular processes of capital accumulation operate” (2019, 89). Both are necessary “in the general expansionary logic of a capitalist system in which the endless accumulation of capital and the never-ending search for profits dominates” (ibid., 101).

As Diane Coyle concludes, neoliberal capitalism that has triumphed worldwide since about 1970 functions as the ultimate ideological illusion of capitalism, insisting that everything be reduced to market pricing and that nothing can be considered wealth that is not so priced. This is formulated in the dogma of GDP (Gross Domestic Product) which also assumes that “endless market production is the ultimate objective of politics.” She continues: “GDP has afforded immense power to central bankers, economic advisors, development consultants, IMF specialists, World Bankers, and the like” (in Smith 2016, 255).

In stark contrast, for generations environmental economists have been declaring that you cannot have endless growth on a finite planet. As such, they argue with nearly one voice, the economy cannot remain an independent engine of growth operating in human affairs independently of the planetary biosphere as traditional economists always maintained (see Raworth 2017). Rather, economics is properly a subset of planetary ecology and the biosphere. Donna Meadows and her colleagues published *Limits to Growth* in 1972 and *Limits to Growth: The 30-year Update* in 2004. Herman E. Daly published *Beyond Growth* in 1996 and Richard Heinberg published *The End of Growth* in 2011.

In *The End of Growth: Adapting to Our New Economic Reality*, Heinberg writes: Today, most money is created by banks under the fractional reserve system, which requires banks to keep on reserve a certain proportion of the money they lend to borrowers (3% for smaller banks and 10% for large banks in the U.S.). This means that a

bank may lend up to 97% beyond whatever actual assets it possesses. This loan account goes on the bank's balance sheet and exists nowhere else. It is a "virtual" asset to the bank, but a much more real debt to the borrower, who promises to repay the loan with interest. Under this system, banks are leveraged far beyond their actual assets and if there are major loan defaults or a run on the bank by its customers, the bank will fail and all the money and credit are lost.... The assumption behind this entire system (i.e., today's capitalism) is that perpetual growth of the economy is assured. Loans are made in the fractional reserve system with the expectation that borrowers will be able to prosper so that they can pay back both the principle and interest on their loans.... Similarly, nations operate under a debt system in which they themselves borrow from the world banking system in order to invest in infrastructure and other initiatives with the expectation that growth (measured in ever-increasing GDP) will allow them to pay back the principle and interest on the loan.... The 'end of growth' is the ultimate credit event, as everyone gradually comes to realize there will be no surplus later with which to repay interest on debt that is accruing now." (2011, 103)

Planet-wide we have or surpassed reached peak-oil (and many other natural resources), peak-food production, peak-fresh water supplies, peak-agricultural land, peak-forests. We are in "overshoot," which means that we are using more of all these resources than the planet can regenerate or sustain (cf. Catton, Jr. 1982). Collapse of the capitalist system of endless growth on a finite planet is immanent, therefore, and we must re-design our world system to be in harmony with the biosphere of the planet. My argument is that this re-design must include the transforming the system of sovereign nation-states as well as economics, which, we have seen, is inseparable from the capitalist system of endless growth and accumulation. By contrast, under "Means of Implementation" the SDG document, item 41 states: We recognize that each country has primary responsibility for its own economic and social development. The new Agenda deals with the means required for

implementation of the Goals and targets. We recognize that these will include the mobilization of financial resources as well as capacity-building and the transfer of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed. Public finance, both domestic and international, will play a vital role in providing essential services and public goods and in catalyzing other sources of finance. We acknowledge the role of the diverse private sector, ranging from micro-enterprises to cooperatives to multinationals, and that of civil society organizations and philanthropic organizations in the implementation of the new Agenda.

The world financial system as it now exists (or with slight modifications to include "preferential terms") is the framework for attempting to achieve these SDGs. In addition, the system of militarized sovereign nation-states that protects and promotes this financial system is never questioned. Let us examine each of the 17 goals in turn to reveal both what is missing and what is presupposed under the UN system.

4. The UN Sustainable Development Goals versus the Earth Constitution

GOAL 1: End poverty in all its forms everywhere. This noble ideal provides the gloss of the entire SDG document. Yet the document contains no analysis of the global production of poverty by the present world-system. Astonishingly, the document never even mentions the planetary population explosion. Indeed, the word "population" only appears four times and even-then in innocuous contexts. Yet the addition of approximately 80 million new people every year to Earth is surely a major contributor to global poverty and misery.

Population experts have been pointing out the calamity of global population explosion since at least the 1960s (Cohen 1995). The SDG document asserts that poverty everywhere can be eliminated by 2030 even though the planet will likely have about a billion new mouths to feed by that date.

This goal not only ignores the population explosion but the fact that annually the amount of arable land is dramatically decreasing due to overuse and desertification. Similarly, the global fish supply has been steadily dwindling since the 1980s. The Earth Constitution, by contrast, takes a holistic approach by embracing all these factors. It emphasizes voluntary population control, and it provides for reproductive education and worldwide supplies of birth control technologies – the first obvious steps toward ending poverty on Earth. Living without poverty is a human right under Article 13 of the Constitution.

GOAL 2: End Hunger, achieve food security and improved nutrition and promote sustainable agriculture. This goal states: “By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.” In the light of the World System described above, in which multinationals benefit from third world poverty and desperation while simultaneously acquiring much of the land in poor countries as their “private property,” how this might be achieved remains an inscrutable mystery.

GOAL 3: Ensure healthy lives and promote well-being for all ages. Can you imagine this being achieved in Indonesia, a global mecca for cheap labor, resources, and massive poverty? Can you imagine this being achieved in the United States, a global mecca for class domination where even healthcare is not a right and where 50% of its population have no health insurance nor resources to visit a physician? The Earth Constitution makes equality a binding, legally redeemable right for everyone. It makes universal health care and the other necessities for human well-being redeemable and enforceable legal rights.

GOAL 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for

all. According to the Bonded Labor Liberation Front of India, there are between 20 and 65 million bonded laborers in India alone, and millions of these are children enslaved within the silk industry and other industries requiring free labor and tiny fingers. Girls in Afghanistan and other countries are often forbidden to get an education.

Without a transformed world system away from capitalism, militarized nation-states and the UN protection of these institutions, lofty goals by the year 2030 are mere fantasy. However, the Earth Constitution puts democratically elected representatives of the people of Earth in charge of transforming our current exploitative economic system and allows them to actualizing human potential through guaranteeing education for all, real protection of all children, as well as providing other fundamental rights.

GOAL 5: Achieve gender equality and empower all women and girls. In 1972, the Equal Rights Amendment was introduced in the United States to give equal rights to all citizens and abolish legal distinctions between women and men in divorce, property, employment, etc. Presently, this amendment remains far from passing due to immense structural and cultural forces that impede such equality in the U.S. and around the world. Nevertheless, this UN goal says: “Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.”

If this is next to impossible in the U.S., where fundamentalist Christians claim that the male must rule in the family, how will it be possible in many Muslim countries around the world, or in the patriarchal culture of India, or in the many places where “genital mutilation” is still forced upon girls? It is deeply ironic that the SDGs recognize that what is necessary to achieve this goal is “enforceable legislation.” Yet the UN system of sanctioning national sovereignty adamantly opposes “enforceable legislation” at the world level – exactly where it is needed most. Under the Earth Constitution, the equal rights of women are

a matter of enforceable world law.

GOAL 6: Ensure availability and sustainable management of water for all. With global warming increasing at the same time that the population of Earth continues to explode, freshwater is becoming progressively diminished. Water tables everywhere on the planet are dropping, while the demand for water continues to increase. For example, hundreds of millions of people in the countries surrounding the Himalayas depend on the annual snow and ice melt from this mountain range, a melt which is disappearing as the glaciers disappear. How can this goal possibly be achieved while ignoring a population explosion, shrinking arable land, and likely future “water wars” between India, China, Nepal, Bangladesh, and other countries whose water supplies are rapidly diminishing?

Activist Vandana Shiva documents the ways in which multinational corporations – with the help of the World Bank and WTO – are sucking up immense quantities of water in these countries, causing the water tables to drop, and then selling the extracted water back to the people inside of environmentally damaging plastic containers. Everywhere private forces are working to get control of formerly public water supplies, thereby converting resources that should belong to the people into corporate-owned monopolies (2002, Chap. 4). To solve this problem, the Earth Constitution designs a world system in which all people have an inalienable right to sufficient quantities of free, clean, life-giving water, as well as clean air and other necessities for life.

GOAL 7: Ensure access to affordable, reliable, sustainable and modern energy for all. In *This Changes Everything: Capitalism vs the Climate*, Naomi Klein details the way that the big oil companies spend hundreds of millions of dollars publicly calling into question the conclusions of climate scientists about the effects of fossil fuel on planetary warming. Immense economic forces are allied against the goal of sustainable energy. Even today, six years into the jurisdiction of the SDGs, the nations of the world struggle for oil resources, build new pipelines for oil and gas, and engage in destructive environmental fracking for natural gas.

As early as 1981, Buckminster Fuller had outlined a very practical plan for a clean global energy grid in which solar power could be brought to the entire Earth through an interlinked and international solar energy system. Such a truly planetary grid would not need extraordinary quantities of batteries because some portions of Earth are nearly always experiencing sunlight. This would, of course, require energy cooperation rather than competition. It also would require a united Earth such as that envisioned by the Earth Constitution. Our problems can be solved, but only if we are truly united.

GOAL 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all. Goal 8 is in explicit contradiction to sustainability. Even elementary theories of capitalism realize that capitalist profit margins require unemployment, a desperate work force willing to compete for low wages. As we have seen, economists such as Herman E. Daly, Richard Heinberg, and Kate Raworth proclaim that we are at the end of growth. Daly affirms that development must be qualitative, and should no longer be measured in quantitative terms.

Moreover, environmental experts like James Gustav Speth in *The Bridge at the End of the World* (2008) show that capitalist growth dogma is at the heart of the problem. Even though the Earth Federation government will employ millions of now unemployed people in environmental restoration and regeneration projects, the new global economic system will also need to also accommodate automation, as Jeremy Rifkin (2011) points out. Daly (1996) details how everything must be designed for maximum durability, for reparability, and for eventual recycling. Extracting materials from Earth must be reduced to an absolute minimum, and waste returned to Earth must also be minimal. The world-system must be coordinated and united around these post-capitalist principles.

The Earth Constitution makes this new world

possible because it places democratically organized human beings in authority over global corporations, over private banking, and over territorial nation-states. It gives the World Parliament the means to create a world system that works for everyone, not only in terms of two bills of rights (Articles 12 and 13) but through creating the institutes within the Integrative Complex dedicated to monitoring, assessing, regulating, and protecting the biosphere under the authority of the World Parliament.

GOAL 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. This is precisely what the Earth Constitution is designed to do and what the present world disorder is incapable of doing. World Trade Organization (WTO) regulations contain dozens of pages dedicated to “intellectual property rights” in order to ensure the profiteering of multinational corporations in ways that defeat technology transfer, pharmaceutical transfer, and open-source information on sustainable industrialization.

The Earth Constitution establishes global public banking dedicated to making sustainable development available to poor people everywhere. The private banking cartels that now dominate the world make achieving Goal 9 impossible. The SDG document speaks of giving people greater “access to banking, insurance and financial services for all,” but it never critically recognizes that the lion’s share of these services function for private profit and for the exploitation of those who receive them. We saw above that the present private, profit-oriented banking systems for the world (including the IMF and World Bank) require growth to repay the principle and interest on debts. Only global public banking, where profits are not made and not at issue, can supply the planet with a sustainable economy.

Without global monetary policy and public banking for the people of Earth, life will never become sustainable or in harmony with the carrying capacity of our planetary biosphere, wars will never end, and poverty will never be eliminated (Brown 2007). As long as money creation and

banking are in the hands of private banking cartels, the means of economic freedom are denied to the people of Earth. Just as clean water and air are the responsibility of sound democratic government, so money as a universal medium of exchange must be democratically owned by the people of Earth. Money creation and banking are just as much a public service as are roads, and they are essential to a sustainable planetary economy.

GOAL 10: Reduce inequality within and among countries. According to the Pew Research Center, 96 out of 167 countries with populations over half a million claim to be democratic. Yet most of these are ruled by a tiny super-rich class, and the other 71 countries are ruled by some self-interested oligarchy. As of 2019 in the United States, the bottom 50% of households had \$1.67 trillion or 1.6% of the net worth, while the top 10% has 94.4% of all the wealth. With that kind of power in the hands of so few – a power that is institutionalized toward continuing to increase their wealth at the rate of billions of dollars per day – how can Goal 10 possibly be achieved? Obviously, only global governance, such as provided by the Earth Constitution, would have the power to supersede the corporations and sovereign nations on issues of inequality. Consequently, only planetary democracy can bring economic equity.

GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Perhaps the authors of the SDGs all live in relatively clean, comfortable European cities like Brussels, Paris, Copenhagen, Munich, or Milan. Perhaps they have never walked through the world’s dozens of nightmare megacities like Mexico City, Lagos, Mumbai, Kolkata, Dhaka, or Manila. My travels have shown me miles and miles of unmitigated slums, hundreds of thousands of impoverished people packed tightly into filthy cities, people who cannot even find a hovel or tent in the slums and who live their entire lives on the streets without shelter. If you walk through these cities early in the morning before sunrise, bodies lay everywhere, asleep on the pavement, with their entire set of worldly possessions jammed into a plastic bag,

used as a pillow for their heads.

In short, there is no way that these centers of chaos and misery will be converted to “inclusive, safe, resilient, sustainable” habitats by the SDG target year 2030. Even with ratification of the Earth Constitution, we would be hard-pressed to meet that deadline. However, we’d at least have a fighting chance, since the Earth Constitution was designed with an integrated and holistic approach such that all of humanity’s challenges are seen in their true interdependent and interrelated contexts. In essence, we either solve all the problems together on a planetary scale, or not at all. To fragment the task among some 200 sovereign entities is madness. GOAL 12: Ensure sustainable consumption and production patterns. This goal is absolutely fundamental if Earth is to have a sustainable civilization. One itemization under this goal declares: “By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse. Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.”

As previously mentioned, there is no critique of the profit motive in this document and no critique of capitalism. Yet even an elementary analyses of capitalism must admit its tendency to externalize costs in order to maximize profits. Waste, like unemployment and poverty, is essential to capitalism, and externalization of costs is essential to profit maximization. To “encourage” companies is not enough to make it happen. Some multinational companies have more assets and more leverage than the nations who host them. And some WTO and Trade Agreement rules prohibit these countries from even making laws that cut into profit margins.

With the U.S. ruling class owning 94.4% of the wealth that is generated by this unsustainable system, who is going to convince them to give up the system – the U.S. government that is run by them? Both the Democratic Party and the

Republican party are run by and for the rich. Do protestors in the streets who are beaten up by the police going to make a real difference? Only planetary federation can ensure that sustainable production and consumption patterns become effective and equitable without undue suffering or injustice with regard to any of the parties involved. Right now, the top 10% who control everything, including the UN, and have zero interest in achieving such equality.

GOAL 13: Take urgent action to combat climate change and its impacts.*This goal hits the nail on the head in that urgent action is clearly needed. But this SDG directs nations to “Integrate climate change measures into national policies, strategies and planning.” And the asterisk indicates that any urgent action means “acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.”

However, affirming this UN Framework Convention does not constitute the “urgent action” we need. Only addressing the root causes of the entire nexus of global problems will produce success. The world is suffering not only from climate collapse, but from a global pandemic, immense poverty, institutionalized greed, endless wars, worldwide militarism, mindless competition among nations, and social, moral, and spiritual chaos. The UN Convention of Climate Change is in truth a prescription for human extinction because it ignores the root causes of our dire planetary problems.

GOAL 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. This goal is critical because the oceans are dying. If the oceans die, the planet dies, and we die. Volume after volume by environmental experts contain data confirming this fact – the implicit premise of Goal 14. Environmental expert Bill McKibben in his 2019 book *Falter* details the acidification of the oceans, their carbonization, the growing multiple dead zones, the diminishing

oxygen production of the oceans (already suffocating some species), their rapid warming, and the immense quantities of plastic waste polluting them. James Gustav Speth in his 2004 book *Red Sky at Morning* writes that “in 1960, 5 percent of marine fisheries were either fished to capacity or overfished; today 75 percent of marine fisheries are in this condition. ... Data reveal that the global fish catch has shown a strong and consistent downturn every year since 1988” (2004, 15 & 33). The oceans are indeed dying.

Nations and corporations have developed the technology to mine the natural resources of continental shelves to some 200 miles offshore, and a barrage of mining has erupted in the 21st Century, with some immense accidents like *Deepwater Horizon* in the Gulf of Mexico. The UN Convention on the Law of the Sea (UNCLOS), which went into effect in 1994 after 60 countries endorsed it, has clauses that attempt to protect the sea. Of course, the UN is hamstrung by claims of national sovereignty (i.e., lawlessness), rendering the Law of the Sea Convention weak and practically unenforceable. Moreover, the U.S., which is the nation most abusive of the seas, has refused to ratify this treaty, claiming that it infringes on its sovereignty.

Goal 14 urges nations to “enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources.” But is an unenforceable treaty really a “legal framework”? Because ratification as well as compliance is voluntary for each nation, the UN treaty system cannot possibly save the environment, nor prevent climate collapse.

Ratifying the UNCLOS will not prevent the oceans from dying. Under the Earth Constitution, by contrast, the oceans of Earth belong to the people of Earth and the oceans are made a protected global commons. No longer may sovereign nations freely exploit the seas for their own interests. Similarly, the atmosphere and forests of Earth are essential to the biosphere and human life on Earth, so all these

also belong to the people of Earth (see my 2019 article “The Tragedy of the Global Commons” at www.Academia.edu, also my 2020 article on “Deep Sustainability”).

GOAL 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Again, reaching this goal by the year 2030 is absolutely essential to the future of life on Earth. Yet the UN tells the nations of the world to “mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.” One supposes third world countries can do this while continuing to pay back their immense intentional indebtedness to first world banking cartels, while maintaining military preparedness by buying expensive weapons from first-world arms dealing countries, and while dealing with their own internal social poverty and chaos. One supposes they are to do this while carrying out “structural adjustment” programs imposed by the World Bank and the IMF that require them to sell off their infrastructure and social programs to profit-making first world corporations. The truth is that the poor nations are simply not able to “finance” the protection either their internal national environments nor the natural ecosystems that transcend national boundaries, making this demand quixotic at best. Under the Earth Constitution, finance for ecological protection is debt-free and non-exploitative because it arises from the global public banking that is at the heart of the Earth Federation government. Action need not be fragmented by nation-state boundaries or countries going into debt to try to protect their national ecological integrity. The Earth Federation government is designed precisely to address global problems beyond the scope of nation-states. By contrast, the sovereign nation-state system fragments the world in multiple ways as shown in the following chart.

(Chart on the next Page)

Relation of Planetary Resources to Sovereign Nation-States and World-System Imperatives under the UN System. Source: Martin 2021		Under the Earth Constitution
Whether to spend immense resources to militarize for war	Under control of each nation	Supervises disarmament and ends war
Whether to protect universal human rights	Under control of each nation	Guarantees and enforces all rights
Whether to cooperate in protecting the oceans of Earth	Under control of each nation	Enforces protection since oceans belong to the people of Earth
Planetary atmosphere circulating above each nation	Under control of each nation	Harming this illegal—belongs to the people of Earth
Planetary hydrosphere circulating through each nation	Under control of each nation	Polluting this illegal—belongs to the people of Earth
Forests producing CO2 for all people and binding CO2 for all	Under control of each nation	Major planetary resources necessary to the biosphere belong to people of Earth
Corporate toxic waste and pollution spreading around Earth	Under control of each nation	Prohibited by enforceable world laws
Whether to cooperate with others for a sustainable planet	Under control of each nation	Mandatory cooperation
Fresh water flowing from glaciers to various countries in such places as Himalayas, the Andes, or the Alps	Under control of the nation where the glaciers are located	Supervised by the world environmental authority and world courts
Protecting the health of rivers flowing through multiple nations	Each nation controls river segments independently	Supervised by the world environmental authority and world courts
Finances necessary to transform to sustainability	Under control of profit-making global capital and banking	Debt and interest free financing in the service of the people of Earth
Poor countries exploited by rich countries and banking for their cheap labor, resources, and repayment of loans	Under control of imperial nations, global banking, and multinational corporations	Global "fair trade," technology transfer, and public assumption of debts substitute for phony "free trade"

GOAL 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. It is here that the incomplete ideology of the SDGs becomes most glaring. Countries are expected to be internally peaceful and inclusive. There is no mention of international wars, terrorists financed by international actors, including imperial nation-states, or even internal civil strife. And there definitely is no mention of the world pouring \$1.8 trillion down the drain annually through wars and military expenditures.

Societies around the world are being torn apart by the U.S. empire attempting to maintain its global economic and political domination and by the resistance of competing powerful actors (such as China, Russia, and Iran). Major portions of the

world are in chaos because of these struggles, from Afghanistan to Iraq, Syria, Libya, Yemen, Lebanon, and Palestine. Internal conflicts are raging in dozens of more countries financed by the U.S.-Israeli coalition or other international actors. The UN is required to ignore all this and pretend that we have a world order ready to cooperate and meet the SDG goals by the year 2030.

The key to achieving true sustainability is through a world system that is designed to accomplish this goal. By and large, the SDGs contain an accurate list of laudable and necessary goals (while glaringly omitting both population explosion and global militarism), but the UN lacks the power and a coherent means for achieving them. The goals simply are not achievable within the present world system. Ultimately, the SDGs are a pipedream, so long as they ignore the need for world peace

through demilitarization and converting this 1.8 trillion annual dollars to sustainable (qualitative) development.

In sum, capitalism and sovereign nation-states are centuries-old institutions, products of deeply discredited early-modern assumptions about the world. They simply are not designed for planetary, biospheric health and protection. The Earth Constitution, on the other hand, presents a carefully designed system that neither abolishes markets nor nation-states. But it does convert markets to democratic, non-exploitative forms of trade. It also establishes common good forms of finance, eliminates militarism from our planet, and supersedes the absurd claims of nations to recognize no binding laws above themselves. Such world-system changes are necessary if there is to be real sustainability and an end to the ever-growing environmental chaos and possible extinction.

GOAL 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development finance. This last goal reaffirms the present world economic system of “Global North” domination and exploitation. It reasserts the Addis Ababa Action Agenda which relates “to domestic public resources, domestic and international private business and finance, international development cooperation, international trade as an engine for development, debt and debt sustainability, addressing systemic issues and science, technology, innovation and capacity-building, and data, monitoring and follow-up.” These are all features of the UN Economic and Social Council (ECOSOC), the WTO, the World Bank and the IMF – that is, from the “international private business and finance” that has kept third world nations in poverty for generations. Short of a miracle, the system will never reverse itself nor help poor countries achieve “debt sustainability.” As a result, Goal 17 makes clear that the current system of debt enslavement will not be abandoned. At best, it will be modified so they can keep paying on their debt “sustainably” (i.e., forever). As Richard Heinberg point out so clearly in *The End of Growth* (2011), the debt-financing system requires

growth so that the surplus provided can be used for servicing debt. Without growth, no borrower under the present system can pay the interest, let alone the principle on their loans. Growth is an assumption of these SDGs, in direct contradiction to the fundamental principle that you cannot have endless growth on a finite planet.

Goal 17 openly states: “We recognize that domestic resources are first and foremost generated by economic growth, supported by an enabling environment at all levels. ... Private business activity, investment and innovation are major drivers of productivity, inclusive economic growth and job creation.” Hence, privatization, corporatocracy, and the private banking cartels of the Global North continue to hold all the cards while demanding that the Global South tighten its belt and strive for environmental sustainability.

By contrast, the Earth Constitution begins the process of rapid transition to a sustainable world by having the Earth Federation government assume the international debts of the poor nations, thereby freeing them and providing them with a clean slate. It does not abolish the loans made by the Global North, but it mandates repayment agreements utilizing Earth Federation currency. In this way, the transition to an equitable global economic system is guaranteed. By creating global public banking and taking money creation out of the hands of the private banking cartels, the Earth Constitution also commences debt-free money creation that can provide ample resources for a truly sustainable world.

Similarly, on the side of sovereign nation-states, item 18 of the SDG Introduction declares: “We reaffirm that every State has, and shall freely exercise, full permanent sovereignty over all its wealth, natural resources and economic activity.” Sovereignty remains the ruling assumption at the UN. Under this doctrine, Brazil, for example, has the legal right to destroy the lungs of the Earth, Saudi Arabia has the legal right to pump as much oil as it wills into the global market, and China has the legal right to dump unlimited tons of CO₂ into

the atmosphere of our planet.

By contrast, Article 4 of the Earth Constitution places the lungs of the Earth, the vital waters of the Earth, the oceans, the major forests, and the atmosphere that we all breathe into the democratic control of the people of Earth. This is the key to planetary sustainability. Many of the SDGs give worthy and inspiring goals, but they are utterly incapable of realization without genuine holistic transformation of our world system. For sustainability to happen, the economic and political system of the world must be transformed to democracy and holism. Indeed, the current system constitutes the most fundamental cause of climate destruction. Unless we identify and transform the true cause of the problem, there can be no sustainability. The Earth Constitution is the key to making this happen.

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Leadership of Schools in the Future

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This presentation is concerned with thinking about leadership of schools in the future. Not the immediate future, and not so distant in the future that the connection with the present is too fuzzy. Any writing about the future is fraught with difficulties and not the least of this is how we consider past and current times and their influence on predictions about the future. Perhaps this is what one of the characters in Mills' (2019, p.237) *Dyschronianovel* meant when they observed: Here's a prediction: the future never turns out the way we think it will. Simple enough, but that's not the end of it. The past isn't what we thought it was either.

Despite the problems of predicting the future of schools and school leadership, I have engaged with this several times and most notably six years ago in a series of talks and professional papers. At that time my view included the following narrative adapted from Gurr (2015a, p.1-2).

Over the next 20 years there are some current trends that will gain traction and become common. Students will experience an education that will be more personalized, authentic and connected. Teachers will have an enhanced role through greater expertise in understanding the complexity of learning, constructing and co-constructing complex learning experiences, and working collegially within and across schools. Learning technologies will become ubiquitous promoting connectivity, state-of-the-art learning experiences, and timely and comprehensive feedback. Building design will promote engagement, collaboration and connection. Schools will be more joyful and humane places and have an enhanced place in our sense of community. Autonomous, self-governing schools will be common, with systems and governments providing curriculum and accountability frameworks within which schools

will operate, but minimal involvement in the running of schools. This is not a comprehensive list, and there is nothing particularly disruptive that will lead to a major transformation in schools, but they do suggest an enhanced version of what is currently known as the typical school experience. Leading in this environment will likely be familiar to most, but there are several issues that need to be considered, such as, what will leadership look like, who will be involved, and are there other ways of thinking about how people work together in schools?

Leadership is a term that has become too large. Perhaps due to a consensus that leadership is important for student outcomes, we now have research and literature that covers many areas such as student leadership, teacher leadership, middle-level leadership, senior leadership, principal leadership, and an emerging interest in governance. Despite the current excitement to suggest everyone is a leader, I want to define leadership more closely. If we move outside of the classroom, those behaviors that lead to school improvement are my focus. So, this includes the now classical set of practices/interventions focused on building collective vision and setting direction, understanding and developing people, designing the school, and managing the teaching and learning program (e.g. Leithwood, 2012). Of these four, focusing considerable effort on the development of the adults in a school (teachers, non-teachers, parents) appears to be a key area of leadership action, and for teaching and learning it is more about actively improving, rather than managing, the program.

Additional practices include working with and influencing the various contexts in which a school exists, developing networks, collaborations and partnerships, and using evidence and critical reflection to inform change. Successful school leaders have a broad view of what constitutes student outcomes, and they will include school outcomes when evaluating success. There is also a personal element to leadership that involves drawing on various views of leadership to construct

a personal framework, and continuing to develop qualities and characteristics that will be helpful in influencing people. Gurr (2015b) describes a model of educational leadership that includes these elements.

This type of leadership is not something all will want to be involved in, nor will all be able to do it. The National Professional Standards for Teachers acknowledge this complexity by having 'lead' as the fourth level of proficiency for each standard, with the level realistically accessed only by those who have responsibilities apart from teaching, and the time to do this work. A doctoral student of mine, Nicholas (2020), has conducted social network analysis across three large secondary schools, and on eight measures of connection, those with substantial connections were, except for one person, in a defined middle or senior leadership role. The roles these people had, and the time and other resources attached to these roles, meant that they were well connected, and therefore had the opportunity to be exercising leadership. Leadership as described here is therefore focused on the work of principals, other senior leaders and middle level leaders (if they are supported to be leaders). There are few full-time teachers that have the time or qualities to exercise this type of leadership, and so the idea of teacher leadership on a large scale has limited value; we should not be burdening teachers with expectations of being leaders when we provide little support (such as time), but rather we should focus on, and celebrate, their work as excellent teachers.

Much has happened since this prediction was published and here is a new 20-year prediction about future school leadership. To get to this reconsideration there are a few steps. After a brief discussion about the slower pace of educational change, a collection of 58 papers published in 2020 about educational responses to the pandemic are reviewed to get a sense of the current change pressures on schools and how schools might change. This review is the stimulus to then make an argued case as to how educational leadership in turn might be developed; and to help with this

I use a conceptual model to think about best and next practices. With all future predications there will be considerable uncertainty. However, my argument is that education will continue to change at a relatively slow pace, and therefore schools and the leadership required will similarly evolve slowly, and this evolutionary pace of changes enhances the confidence in the predictions provided.

Pace of Change in Education

Education broadly, and schools in particular, are aspects of society that change relatively slowly. Senge, Cambon-McCabe, Lucas, Smith, Dutton and Kleiner (2000, 27-58) described the development of schools since the beginnings of mass education. They noted the slow rate of progress and how schools at the end of the millennium were not substantially different from those 100 years earlier. They argued there was a need for more substantial and rapid change for schools to remain relevant; they were focused in particular on encouraging a system view of schools and schooling. At the same time, the OECD (2001) released a set of six scenarios about the future of education. These scenarios included some where there would be little or only gradual progression of schools, such as those in tightly controlled bureaucratic systems, or in market driven contexts. Two scenarios suggested progress in development to be either more focused on wider societal needs with schools as core social centers, or as learning organizations in which students, staff and families are all part of the learning focus. There were only two scenarios that suggested major change: one focused on networks of learners in a networked society, and the other where teachers abandoned dysfunctional systems creating teacher supply and quality schooling issues.

Two decades later, there has been no educational revolution despite major developments in society, such as the further expansion of information and communication technologies, and the creation of extensive social media and networks; so, in many ways schools continue to progress slowly. Yet, I can see elements of the first five scenarios impacting in several ways. Many schools exist within

bureaucratic systems that exert considerable control of schools, and even in systems which have allowed markets to intervene, there often remain strong control over core elements of schools like curriculum. For example, in England which has adopted a market centered approach with the rapid expansion of Academies, there is strong central control of curriculum and other aspects through mechanisms like high-stakes school inspection (Dewes, 2020). In my home city of Melbourne, Australia, I have seen the 350-school Catholic system do some work with its schools as part of a core social centers view (Di Paolo, 2016) and schools in this system deliberately adopting learning organization views to frame their work (Gurr, Longmuir and Reed, 2021). In 2020 we have witnessed school across the world trying to cope with lockdowns by being more networked within and between schools, and involving home as genuine partners in learning. Indeed, the pandemic which began in 2020, has perhaps been the most disruptive impact to education on a wide scale since the second world war. It may be the event that leads to enduring major changes. And so, in any consideration of how school leadership might change, there has to be some sense of how schools might change as a result of this disruptive force.

The Impact of the Pandemic on Education

In May 2020, as the Editor of ISEA, I produced a call for papers that described educational responses to the pandemic. The papers could be conceptual, empirical, or country reports and, from more than 150 submissions, 58 papers have been published across four issues: volume 48, issues 1-3, and volume 49, issue 1. All are available open-access through the website of the Commonwealth Council for Educational Administration and Management (www.cceam.net) and through individual authors placing their papers on sites such as Academia and ResearchGate. Across the four issues, there are 29 countries represented, with papers focused on all levels of education, and especially on the school and university sectors. Unless otherwise stated, my comments below are applicable across education sectors. These observations are from my reading

of the papers as I, as editor, commissioned and supported the writers to publication. What follows is not a full thematic analysis of the papers, and references, if provided, are examples rather than a complete list of attributions.

Positive features

Educators responding to government mandates, and the needs of their own local contexts, have often been able to adapt quickly (Brelsford, et al., 2020; Fogarty, 2020; Fornaro, Struloeff, Sterin & Flowers, 2021; Goode, McGennisken & Rutherford, 2021; Ivers, 2020; Martinez & Broemmel, 2021; O'Connell & Clarke, 2020) and use a variety of technology to provide remote learning including: printed material, radio, TV and other media (Ayyıldız & Baltacı, 2020; Iyiomu, 2020; Talesra, 2020), synchronous and asynchronous technology mediated learning, especially in wealthier countries and at the university level (Agyepong, Owusu-Ansah & Annoh, 2020; Fornaro, Struloeff, Sterin & Flowers, 2021; Houlihan, 2021; Hung, Huang & Tan, 2020; McKenzie & Gabbidon, 2021; Moraes, Mariano & Dias, 2021; Robertson, 2020). This work has been facilitated by increased teacher collaboration and leadership from many (Brelsford, et al., 2020; Kidson, Lipscombe & Tindall-Ford, 2020), principal leadership (Hauseman, Darazsi & Kent, 2020; Houlihan, 2021; Kafa & Pashiardis, 2020; Marshall, Roache & Moody- Marshall, 2020) and leadership from systems (Ivers, 2020). There has been a focus on the important work of teachers broadly (Kidson, Lipscombe & Tindall-Ford, 2020; Martinez & Broemmel, 2021), and a renewed focus on teaching at the university level (McKenzie & Gabbidon, 2021; Roache, Rowe-Holder & Muschette, 2020; Robertson, 2020). There has also been a focus on schools as institutions (Huber, 2021), and the many important roles schools have in society beyond education (in some countries, for example, schools provide important nutrition and health services)(Houlihan, 2021; Ugwu, 2021). There have been innovative solutions to meeting the needs of students with diverse needs (Fournier, Scott & Scott, 2020; Sider, 2020). Greater connection between schools, and between schools, families and communities have helped to address educational needs (Ahmed, et al, 2020;

Balakrishnan, 2020; Hylton-Fraser & Hylton, 2021; Gyang 2020; Stasel, 2020).

Negative features

There have been many concerns raised about what has happened in 2020 and 2021. Due to differential access to technology resources and school programs during shutdowns, educational inequities have been exposed (Akinwumi & Itobore, 2020; Angelico, 2020; Eacott, et al., 2020; Girelli, Bevilacqua & Acquaro, 2020; Mogaji, 2020; Moraes, Mariano & Dias, 2021; Al Haj Sleiman, 2021) with particular concerns in regard to education for low income families, and especially in low GDP countries (Ahmed, et al., 2020; Ugwu, 2021), rural and remote areas (Fournier, Scott & Scott, 2020); and education of students with diverse needs (Caldwell, 2020; Nelson & Murakami, 2020; Sider, 2020). Educators have been concerned about the health and welfare of students, especially in low GDP countries where nutrition and care issues were paramount (Ahmed, et al., 2020; Mogaji, 2020; Talesra, 2020; Ugwu, 2021). The long-term impact on student development from the discontinuity in education is unknown, but predicted to be damaging, and certainly so in the short-term (Huber, 2021; Moyi, 2020; Oyeniran & Oeyniran, 2020; Sondah, 2020). Uncertainty about program continuity and practice has been stressful for teachers and students (Huber, 2021). Teachers have reported increased workload and work intensification, loss of income, job insecurity, and concern about their ability to cope and provide quality learning and care for their students (Adekunle, Adeyanju & Oyegoke, 2020; Akinwumi & Itobore, 2020; Martinez & Broemmell, 2021; Stasel, 2020). Principals and school leaders have also reported job intensification through increased workload, the need to communicate with many and often, and having to respond quickly to many managerial and emotional problems (Argyropoulou, Syka & Papaioannou, 2021; Pollock, 2020). Remote learning has caused assessment integrity concerns in senior school years and at university (Eaton, 2020).

System and country responses

School/university closures or partial closures have been common, ranging from a few weeks to several months, with some having considerable uncertainty (through closure/re-opening/closure) (Brelsford, et al., 2020; Huber, 2021; Oyeniran & Oyeniran, 2020). On January 29, 2021, the World Bank COVID-19 school closure site (<https://www.worldbank.org/en/data/interactive/2020/03/24/world-bank-education-and-covid-19>) reported that schools were closed in 57 countries, closed in select areas in 6, open with limitations in 95, with only 26 countries reporting schools as being open (10 countries had seasonal school closure and for seven countries there was no information); more than 681 million children were not able to participate in school because of school closures. Remote learning provision has varied in quality and extent, and ranges from education conducted on-line with few disruptions to regular lessons (Huber, 2021; Hung, Huang & Tan, 2020; O'Connell & Clarke, 2020), through to only having printed notes and some provision through TV or radio (Oyeniran & Oyeniran, 2020). Physical schooling for essential worker children, or children with special circumstances, has often been prioritized (Angelico, 2020; Sizer, 2020). In wealthier schools and school systems, and at the university level, closure typically meant closure of the physical spaces, but rapid movement to remote learning with minimal impact on learning continuity (O'Connell & Clarke, 2020). There were infrastructure issues in many countries, such as poor electricity supply, internet connection, and technology in schools/universities and homes (Ahmed, et al., 2020; Igbokwe, et al., 2020; Talesra, 2020). The reliance on international students for enrolments and funding with some schools, and more widely at the university level, was exposed in many countries (Nyame & Abedi-Boafo, 2020; Stasel, 2020).

Implications for Education going Forward

Many are predicting a greater focus on reducing inequitable education provision (Ahlström, et al., 2020; Caldwell, 2020; Sider, 2020). There will be increased use of technology to support students in schools and universities, although many countries

will struggle with infrastructure to support this (Balakrishnan, 2020; Hung, Huang & Tan, 2020; Sato, 2020). A 'new normal' will see a mixture of in-person and virtual/remote learning, which will have a greater focus on student engagement, agency and inclusion (Houlihan, 2021; Zhao, 2020). This will, of course, have implications for work practices, with greater occurrence of blended office/home work in many educational organizations, like universities (Agyepong, Owusu-Ansah & Annoh, 2020; Anane, Addo, Adusei & Addo, 2020; Russell, et al., 2021), and leadership focused on supporting transitioning to these teaching and work environments (O'Connell & Clarke, 2020; Roache, Rowe-Holder & Muschetter, 2020). At the same time, at the school level, a physical school system will be important as the wider social purposes of schools have been highlighted and reinforced and there will be an enhanced role for schools in the greater good of society (Huber, 2021; Ugwu, 2021). Some are calling for a rethinking of schooling (Zhao, 2020), others for greater use of alternatives to mainstream schools, like homeschooling (Adeleke, 2020), but there is little evidence that these will eventuate anytime soon. It seems that a safer conclusion to draw is that physical schools will gain in importance, they will be more ubiquitous worldwide, resourcing will improve to provide better quality physical facilities, and there will be greater use of technologies, especially learning technologies to better cater for the needs of diverse student populations.

Implications for educational leadership going forward

None of these implications for education are dramatic or likely to cause revolutionary changes. Therefore, the implications for leadership are likewise evolutionary and building on trends already evident now.

There is likely to be a greater focus on moral purpose and values-based leadership views (Argyropoulou, Syka & Papaioannou, 2021; Gurr & Drysdale, 2020; Fournier, Scott & Scott, 2020) with a greater emphasis on trust (Ahlström, et al., 2020). At the same time, there is likely to be a more future

focused, responsive, crisis ready and contextually sensitive orientation to change and improvement (Brelsford, et al., 2020; Caldwell, 2020; Dunn, 2020; Gurr & Drysdale, 2020; Marshall, Roache & Moody-Marshall, 2020).

More collective, collaborative and dispersed work situations which will need more fluid and responsive leadership (Brelsford, et al., 2020; Ho & Tay, 2020), although the role of senior leadership roles, such as principal, will remain important (Burwell, 2021; Hauseman, Darazsi & Kent, 2020; Kafa & Pashiardis, 2020; Kidson, Lipscombe & Tindall-Ford, 2020; Pollock, 2020). Relatedly, with the adoption of learning technologies and new ways of working (Dunn, 2020; Pollock, 2020; Zhao, 2020), relationship structures will change and likely impact on the type of leadership needed (Burwell, 2021).

Greater involvement of more people in leadership, such as middle leaders, teachers, students and parents (Brelsford, et al., 2020; Gurr & Drysdale, 2020; Ho & Tay, 2020; Hung, Huang & Tan, 2020; Kidson, Lipscombe & Tindall-Ford, 2020). It will also involve a more planned view of leadership development (Hung, Huang & Tan, 2020). Rapid professional learning support has been evident (Ho & Tay, 2020; Hung, Huang & Tan, 2020; Tran, Hardie & Cunningham, 2020) and this may continue to better support staff (Burwell, 2021).

There was no consensus arising from these papers about the type of leadership being enacted. Descriptions of leadership that were used included: adaptive leadership (Dunn, 2020; Goode, McGennisken & Rutherford, 2021; Stasel, 2020), contextually responsive leadership (Ho & Tay, 2020), community-based education leadership (Gyang, 2020); courageous leadership (Marshall, Roache & Moody-Marshall, 2020); ecological leadership (Ho & Tay, 2020; Hung, Huang & Tan, 2020), entrepreneurial leadership (Fogarty, 2020); inclusive leadership (Fournier, Scott & Scott, 2020), leadership for challenging times (Gurr & Drysdale, 2020), pedagogical leadership (Fogarty, 2020); practical leadership (Sondah, 2020), talent-

centred leadership (Tran, Hardie & Cunningham, 2020), transformative leadership (Ahmed et al., 2020), skilled leadership (Roache, Rowe-Holder & Muschette, 2020).

Next Practice Considerations

We can push the boundaries of our future thinking somewhat further than this through the use of next practice considerations. The idea of best practice has been around for some time in education, and a decade past there was some discussion about next practice and this being somewhat different from best practice. Leithwood (2008) and Hannon (2008) wrote about these ideas for education and the Innovation Institute in England developed a professional learning program based on the ideas (Hannon, 2007). For Leithwood (2008) best practice ideas arose from four sources with differing degrees of trust: bandwagons, in which ideas become popular because of a belief in the people championing the ideas rather than substantial evidence of success; slogans, whereby, people galvanize behind briefly specified ideas, without necessarily understanding what lies behind the words; locally-valued ways of behaving, in which what is done and found successful at the local level is considered best practice without the necessary challenge to understand if there are other ways of doing things; systematic empirical research, whereby trustworthy, valid, reliable and replicable knowledge base is built around successful ideas. Next practice ideas arose from two sources: futurism, a rather ill-defined and eclectic 'discipline' with limited success at predicting future practices, and normal science (using systematic empirical inquiry), but with an orientation to the future (Leithwood, 2008). More recently, Longmuir (2019) used these views to suggest that both best practice and future practice are needed for future focused educational organizations and concluded:

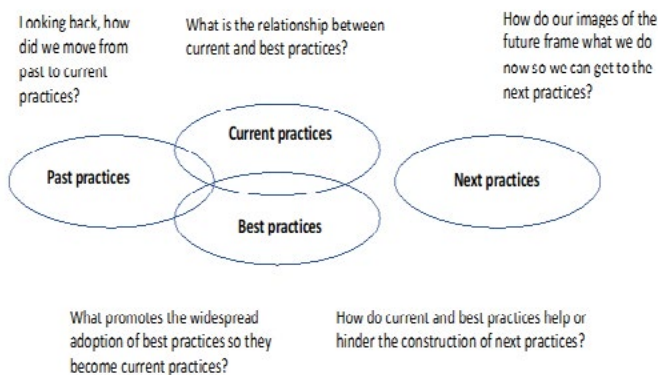
Good judgment, considered investigation and contextual sensitivity are all critical to finding the right approach to school improvement. Leaders who can appropriately balance between “best” and “next” practice will meet the current needs of learners while working

towards recasting “today’s schools in a form more suitable to the needs of tomorrow’s students” (Leithwood, 2008, p. 75). Longmuir (2019, p. 2).

Returning to the quote from Dyschronia (Mills, 2019), it seems that there are two elements missing from a consideration of best and next practice. These are past practice and current practice. What is included in the four categories is somewhat self-evident, but I will, nevertheless, give my logic as to what they are and how they relate to each other. Past practice are the things that were once done and no longer exist (or not commonly). In considering past practice there can be a deliberate engagement with what has been – what was done and what resulted from this? This can help in understanding current practice. If this is neither a romanticized or overly critical reflection, it is likely to result in a genuine attempt to understand why things were done, what impact they had, and, perhaps, why these practices no longer exist. Current practice, not surprisingly, is what currently occurs. In contemporary schools there should be a reflection on why these practices exist and their impacts, and this may lead to change. Often in seeking improvement, there is a search for what is working elsewhere, and often this is framed in terms of uncovering what works best – best practice. Best practices are those practices that seem to be, or have evidence, that they are better than current practices – but remember Leithwood’s (2008) cautions about the trustworthiness of the sources of evidence of success, and also consider the contextual relevance of practices that may be imported from elsewhere. They are not yet widely evident, but they are emerging and might, in time, become so ubiquitous they become current practice (think of the evolution of instructional leadership ideas, and those developed by Hallinger and Murphy in the 1980s in particular; Hallinger & Murphy, 1985). Current and best practices can happily co-exist. Not all best practices may prove to be so (e.g. contingent leadership), or they are adopted even though evidence of benefit is weak (e.g. distributed leadership). Many current practices are enduring with only small modifications (e.g. Hallinger’s conception of

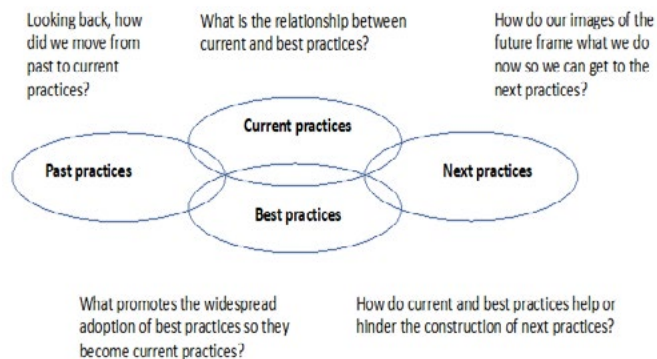
instructional leadership; Hallinger, 2011). Then there are practices that are a clear break from what is currently known or practiced – next practices. They might be something that is genuinely new – perhaps a disruption such as the construction of bitcoins in 2008 by the person or group called Satoshi Nakamoto, or the Dick Fosberry’s high jump style (the Fosberry Flop) that saw him win the high jump gold medal at the 1968 Olympics. Or they might be an innovative reconfiguring of existing ideas and practices to create something new like the construction of Uber or Airbnb. Greenfield’s 1973/1974 critique of the educational administration field (Greenfield & Ribbins, 1993) may be considered as a genuinely new, or an innovative reconfiguring of ideas, depending on your viewpoint. Regardless, it was a next practice way of thinking about educational administration. As such, next practices can be both separated from, or part of, current and next practices. Figure 1 presents a conceptual framework and guiding questions to clarify this.

Figure 1: Next Practice Framework version 1.



In this Figure, next practices are separated from current and best practices to highlight that next practices are often a jump from what we know. In practice, and as conceived by the Hannon (2007, 2008), they are more closely related to what we do now and so the Figure could also be drawn as shown in Figure 2.

Figure 2: Next Practice Framework version 2.



In thinking about schools and principal leadership I am currently using this conceptual framework to help understand how principal attitudes to change influence school innovation. By manipulating the figures, varying the overlaps and size of the shapes, it is possible to represent diagrammatically why schools change at different rates. As an example, Figure 3 shows a school, with a 100-year history that is not inclined to change rapidly – past and current practices dominant, only allowing for moderate innovation through best practices, and with little interest in next practices.

Figure 3: A school where traditions are important and where the past dominates current practices and hampers innovation.



Educational Leadership in the Future

When Leithwood (2008) was critiquing next practice perspectives, his critique of futurism was particularly relevant to this presentation. He posed five assumptions for consideration of future leadership practices (Leithwood, 2008, p. 74):

“To suggest that we have a reasonable

chance of predicting successful future (next) leadership practices and arming future leaders with them depends on a series of five interdependent assumptions. Each one of these assumptions is highly suspect in its own right. To imagine they will all be correct stretches credulity miles beyond the breaking point. Try them on for size

1. We can predict, with some accuracy, the nature of our future schools;
2. Those future schools will be substantially, if not dramatically, different from current schools;
3. Something about the nature of those future, different, schools will demand successful leadership practices different from those of our current schools;
4. We can identify now who will provide leadership in those future schools;
5. We can figure out what those different practices are with enough certainty to justify spending today's resources on providing future leaders with the capacities they need to enact those "next" successful leadership practices."

With what has been presented in this chapter, making predictions about next practice leadership may be a futile effort as these assumptions have largely not been met.

Assumptions 1 & 2.

It seems that one prediction of future schools is that they will not be radically different from the current. There will be differences in the rate of change across the world as countries are at different levels of development with their schools and school systems, but the essential construct of 'school' will not be radically different from that found in wealthier countries. The grammar of school (Zhao, 2020) will evolve, but even if, for example, personalization was to be a dominant part of education, this would be an evolution of trends that first emerged substantially in the 60/70s.

Assumptions 3 & 4.

Given this, there will not be demands for radically

different views of leadership. How leadership is constructed and enacted will evolve, but this evolution is already happening now as indicated above, such as: increased reliance on principals and other senior leaders, greater reliance on middle leaders to impact on schools, a greater focus on the development of leadership qualities in school communities, increased visibility and reliance on leadership from others, including teachers, students and parents, and the need to exercise leadership across 'real' and 'virtual' spaces. The description of the 20-year evolution of school leadership that I presented early in the paper, only needs some fine-tuning on the basis of considering recent changes in education.

Assumption 5.

I have not been able to predict any educational leadership next practices that will emerge and have the disruptive impact of, say, the Fosberry Flop (see Figure 1). However, there is sufficient information to consider how current/best practices might combine to generate next practices (as per Figure 2).

And so, I now present an updated 20-year prediction and this prediction concludes the chapter.

Over the next 20 years, across the world there will be universal access for most school age children to a 10 to 13 year sequence of primary and secondary education. In wealthier countries, early years provision will become common. There will be greater linkage of health and welfare services with schools. Schools will have a strong physical presence in communities, and the quality of the buildings and grounds will continue to improve. In many contexts, building design will promote engagement, collaboration and connection. Schools will be more joyful and humane places, and have an enhanced place in our sense of community. Various technologies will allow schools to fully engage with and support most types of student diversity, and learning for all students will be more personalized, authentic and connected. These technologies will allow for quality

programs, whether they are on or off campus. Learning technologies will become ubiquitous promoting connectivity, state-of-the-art learning experiences, and timely, comprehensive and interactive feedback. Teachers will have an enhanced role through greater expertise in understanding the complexity of learning, constructing and co-constructing complex learning experiences, and working collegially within and across schools. Internal and external school networks will become more complex and inclusive. Community ideas will become more important for those working in schools (continued development of professional learning community ideas) and for all in schools – teachers, students, parents, families and community (continued development of learning community and community of practice ideas). There will remain complexity in governance arrangements with autonomous, self-governing schools increasing in wealthier jurisdictions, yet school systems remaining dominant in most countries. As countries prosper and school systems and schools mature, there will be increased responsibility at the school level to plan and implement contextually responsive programs, manage finances, hire staff, manage buildings, and so forth, but this will be within central controls through systems and governments providing curriculum and accountability frameworks within which schools will operate. There will be a greater emphasis on schools responding to local needs, but with the surety of systemic oversight and support. This is not a comprehensive list, and there is nothing particularly disruptive, but they do suggest an enhanced version of current schools. In some contexts, improvement in school design and practice might be transformational, but for most contexts it will be evolutionary.

Leading in this environment will likely be similar to current practices, although there will be some changes.

School leaders will need to be more future focused. Part of this will be striving for continuous

improvement, looking for best practices and, perhaps, next practices, and doing so in a way that is contextually sensitive and relevant. But an equally important part of this will be helping their schools to navigate complex times - changes in society, new technologies, crises, existential and spiritual challenges, and so forth (Drysdale & Gurr, 2017). School leaders will gain support for their work from adopting several views of leadership including moral purpose and values-based leadership views (Fournier, Scott & Scott, 2020), and responsive and adaptive leadership views (Dunne, 2020). School leaders will be better at articulating the values and beliefs which drive their work, and they will be more agile and future focussed in their decision making.

Despite my earlier views about leadership being too ubiquitous, and reliance on teacher leaders as being unreasonable, it seems clear now that leadership practices need to come from many more people than just those in formal leadership positions. There is no doubt that principals will remain important – building on earlier Wallace Foundation reports of the impact of leadership on schools (Leithwood, Louis, Anderson & Wahlstrom., 2004; Louis, Leithwood, Wahlstrom & Anderson, 2010), a more recent report has provided further evidence in the USA context of the importance of principal leadership (Grissom, Egalite & Lindsay, 2021) to the point that, within this context at least, it is no longer a contestable issue. Those in leadership roles – system leaders, principals, senior school leaders, middle leaders – will be expected to exercise leadership. At a minimum this means influencing school and/or unit direction, developing staff, refining and aligning structures and processes to foster collaboration and connection, and improving teaching and learning (Leithwood, 2012). There will be in increased responsibility and expectation on middle leaders, and these people will be better supported by senior leaders to do this (Gurr, forthcoming). However, increasingly teachers will be involved in leadership, and so too will students, parents and community members, with this work being both important and authentic (Wenner &

Campbell, 2017). It will be more common to see collective endeavor in the leadership of schools and a more agile configuration of leaders depending on needs and skills. Again, there will be difference across countries in terms of the maturity of systems and schools, but the trend to a more inclusive view of leadership seems to be highly likely. Despite the increased opportunities for leadership influence, school hierarchies will not disappear. The pattern of a principal with, depending on school size, some senior leaders and many middle leaders, will remain dominant as there are too many organizational factors sustaining this pattern (e.g. career progression, remuneration, prestige, power and so forth). Also, the development of other leaders will progress slowly as support for teacher leaders remains limited (because they have a full teaching load), and student, parent and community leadership are emerging practices.

It seems that in many contexts technologies will facilitate different work practices that are more collective, collaborative and dispersed, and happening in real and virtual spaces. This will make leadership more complex, more relational and require well developed people skills.

We currently have well developed understandings of educational leadership that seem to serve current school contexts (e.g. Leithwood, 2012; Leithwood, Harris & Hopkins, 2020; Leithwood, Sun & Pollock, 2017), and which will likely also serve future contexts for some time as they continue to be developed. Our conceptions of school leadership have and will evolve. For example, in regard to leadership that influences teaching and learning, many consider that it time to move away from instructional leadership ideas to more contemporary leadership for learning views (Gurr, 2019; Hallinger, 2011; MacBeath, Dempster, Frost, Johnson & Swaffield, 2018; Townsend, 2019; Townsend, Berryman, Gurr & Drysdale, 2020). Indigenous perspectives are likely to become influential (????). In adopting new leadership views, I return to Leithwood's (2008) caution against bandwagon's, slogans, locally-valued ways of behaving and futurism as

sources of knowing best and next practices. Ideas that are touted as new, such as the recent interest in relational leadership ideas (e.g. Eacott, 2018), need to be considered deeply (are they new or, more likely, simply reinterpretations of past ideas as discussed by Bush, 2018?) and then have some empirical evidence behind them before they are given much weight. These ideas can be put forward as possibilities, perhaps as possible next practices, but they need empirical research to support them to become best or current practices.

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Achieving Sustainable Development in Education Through STEAM

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Abstract

STEAM is an interdisciplinary learning approach that enables learners to integrate multiple fields of studies for creative, innovative and critical problem-solving. It stands for science, technology, engineering, arts, and math. Through STEAM learners acquire the knowledge and skills needed to promote sustainable development, including, sustainable lifestyles, human rights, gender equality, promotion of a culture of peace, non-violence, global citizenship, appreciation of cultural diversity and of culture's contribution to sustainable development. Promoting trust and tolerance is key to sustainable development. By teaching the youth to coexist and co-create, quality education inculcates the civic awareness, empathy, and skills to become a true global citizen. The paper highlighted the different aspects of teaching learning by STEAM which are helpful to achieve Sustainable goal.

Introduction

Rethinking and re-visioning education from nursery school through university to include a clear focus on the development of the knowledge, skills, perspectives and values related to sustainability is important to current and future societies. This implies a review of existing curricula in terms of their objectives and content to develop trans-disciplinary understandings of social, economic

and environmental sustainability. It also requires a review of recommended and mandated approaches to teaching, learning and assessment so that lifelong learning skills are fostered. These include skills for creative and critical thinking, oral and written communication, collaboration and cooperation, conflict management, decision-making, problem-solving and planning, using appropriate ICTs, and practical citizenship.

The United Nations Sustainable Development Goals (SDGs) represent a shared and universal commitment to deliver on 17 ambitious Global Goals for people and the planet by 2030. When the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, they recognized that partnerships will play a crucial role as vehicles for mobilizing and sharing knowledge, expertise, technologies, and financial resources. The Microsoft mission—to empower every person and every organization on the planet to achieve more—aligns strongly with the UN global agenda for sustainable development from 2015 through 2030. The digital transformation of the global economy can make a difference and help to address the challenges underlying the UN Sustainable Development Goals. Through a wide range of programs, partnerships, and initiatives can contribute to a sustainable future that is truly for everyone.

Education for Sustainable Development requires the reorientation of many existing education policies, programs and practices to address the social, environmental and economic knowledge, skills, perspectives and values inherent to sustainability.

Initiative for solving Sustainable Developmental Issues by Using STEAM Skills

A new initiative brought together high scholars from five countries to the United Nations to find solutions for sustainable development issues using their STEAM skills. As part of the “Global Classroom STEAM Challenge,” a program sponsored by electronics maker Samsung,

student teams worked virtually with international counterparts over the past 10 weeks to come up with solutions for problems with energy, climate change, poverty and hunger. These make up some of the 17 goals addressed UN's "sustainable development goals" program, all of which have specific targets to be achieved by 2030.

Each U.S. school was paired with a school in another country and collaborated on a virtual collaboration platform provided by IVECA, a non-profit organization that promotes "intercultural competence." and Samsung Electronics America hosted the "STEAM Education for Global Citizenship to Achieve the SDGs event" at the United Nations Headquarters in New York. As part of the Global Classroom STEAM Challenge (GCSC), students from five countries showcased their 10-week collaborative project.

The student teams were tasked to use STEAM (science, technology, engineering, arts, and math) skills to find solutions to problems in their local communities that align with the UN Sustainable Development Goals (SDGs). The use of IVECA virtual classroom platform facilitated the communication and collaboration between student teams to brainstorm, share research, and provide feedback to their international counterparts.

The solutions presented by student teams included:

- Website and NGO to collect and distribute food – "No Poverty" and "Zero Hunger" SDGs
- Air cooling and groundwater recycling devices from reusable materials – "Clean Energy" and "Climate Action" and "Life and Land" SDGs
- Education programs to create jobs and improve local economy through tourism and equal employment – "Decent work and Economic Growth" and "Industry, Innovation, and Infrastructure" SDGs
- Website and mobile app to reduce and better manage litter – "Good Health and Well Being" SDG

The student presentations were a testament to the power of innovative public-private partnerships

in Global Citizenship Education that combined quality STEAM education and the use of technology to cultivate global citizenship through a hands-on international project-based collaboration.

According to Eunee Jung, the Founder of IVECA "Global Citizenship Education starts from identity and connection with community, then, can lead the youth to develop empathy and compassion, intercultural competence to live and work with people from diverse cultural backgrounds, and the capacity to collectively tackle local and global challenges.

The goal was to challenge the students with innovation in their thinking and use STEAM skills to overcome sustainable development challenges in their communities. Global citizenship education is the best tool to equip the next generation to tackle many of their most pressing problems, including violent extremism, inequality, poverty, and climate change, through fundamental values of humanity. Promoting trust and tolerance is key to sustainable development. By teaching the youth to coexist and co-create, we can equip them with the capacity to work across divisive political and economic spectrums and find solutions that can help tackle even the most divisive and disruptive global issues. Innovative public-private partnerships can become a catalyst for providing quality education to our youth that inculcates the civic awareness, empathy, and skills to become a true global citizen.

Quality STEAM education designed to cultivate global citizenship through international project-based collaboration demonstrates the best educational means to tackle local and global challenges in achieving the SDGs. This event will explore the holistic and intercultural integration of global citizenship into STEAM education that enables groups of high school students in five countries to work together to solve their community issues. Identifying core competencies required for global citizens in this interconnected and interdependent society, the panelists will discuss essential elements of EGC as a driving force to facilitate innovation for a better life. The best practice of public and private partnership

model will be demonstrated, and the participating schools will share their experiences including positive impacts and challenges in implementing the STEAM project to develop real-world solutions for the SDGs.

In the Preamble of UN Sustainable Development Goals written: 'This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom.....' The 17 Sustainable Development Goals and 169 targets announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what they did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. The Goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.

Challenges & Threats for Sustainable Development Goals

At a time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. **Gender inequality** remains a key challenge. Unemployment, particularly **youth unemployment**, is a major concern.

Global threats, more frequent and intense natural disasters, spiraling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity and exacerbate the list of challenges which humanity

faces can achieve by STEAM.

Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States.

STEAM can help to overcome the Challenges?

STEAM can help in significant progress for the survival of many societies, and biological support systems of the planet.

The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy.

STEAM can help in providing inclusive and equitable quality education at all levels – early childhood, primary, secondary, tertiary, technical and vocational training. All people, irrespective of sex, age, race, ethnicity, and persons with disabilities, migrants, indigenous peoples, children and youth, especially those in vulnerable situations, should have access to life-long learning opportunities that help them acquire the knowledge and skills needed to exploit opportunities and to participate fully in society. We will strive to provide children and youth with a nurturing environment for the full realization of their rights and capabilities, helping our countries to reap the demographic dividend including through safe schools and cohesive communities and families.

Promote Physical and Mental Health and Well-being

STEAM will help to promote physical and mental health and well-being, and to extend life expectancy

for all, we can achieve universal health coverage and access to quality health care. Through STEAM, we can fulfill the commitment for accelerating the progress made to date in reducing newborn, child and maternal mortality by ending all such preventable deaths before 2030. We can ensure universal access to sexual and reproductive health-care services, including for family planning, information and education. We will equally accelerate the pace of progress made in fighting malaria, HIV/AIDS, tuberculosis, hepatitis, Ebola and other communicable diseases and epidemics, including by addressing growing anti-microbial resistance and the problem of unattended diseases affecting developing countries. We are committed to the prevention and treatment of non-communicable diseases, including behavioural, developmental and neurological disorders, which constitute a major challenge for sustainable development.

Build Strong Economic Foundations

Sustainable economic growth is essential for prosperity, which will only be possible by sharing wealth. STEAM will work to build dynamic, sustainable, innovative and people-centre economies, promoting youth employment and women's economic empowerment, in particular, and decent work for all. It eradicates forced labor and human trafficking and end child labor in all its forms. The productive capacities will strengthen the least-developed countries in all sectors, including structural transformation. With the help of STEAM we can adopt policies which increase productive capacities, productivity and productive employment; financial inclusion; sustainable agriculture, pastoralist and fisheries development; sustainable industrial development; universal access to affordable, reliable, sustainable and modern energy services; sustainable transport systems; and quality and resilient infrastructure.

Provide Financial and Technical Assistance to strengthen scientific, technological and innovative capacities

We commit to making fundamental changes in the way that our societies produce and consume

goods and services. Governments, international organizations, the business sector and other non-state actors and individuals must contribute to changing unsustainable consumption and production patterns, including through the mobilization, from all sources, of financial and technical assistance to strengthen developing countries' scientific, technological and innovative capacities to move towards more sustainable patterns of consumption and production. It encourages the implementation of the 10-Year Framework of Programmes on Sustainable Consumption and Production. All countries can take action, with developed countries lead for development and increase the capacities.

Positive contribution of migrants is helpful for inclusive growth and sustainability

The international migration is a multi-dimensional reality of major relevance for the development of countries of origin, transit and destination, which requires coherent and comprehensive responses. International cooperation is helpful to ensure safe, orderly and regular migration. Such cooperation give strengthen the resilience of communities hosting refugees, particularly in developing countries and underline the right of migrants to return to their country of citizenship.

Digital Transformation

Digital transformation is the integration of technology throughout all areas of education to fundamentally alter teaching, learning and school operations. It's making wholesale changes to the entire organization to drive systemic change and deliver more value to students and other stakeholders. The global nature of climate change calls for the widest possible international cooperation aimed at accelerating the reduction of global greenhouse gas emissions and addressing adaptation to the adverse impacts of climate change.

Social and economic development depends on the sustainable management of our planet's natural resources. We are therefore determined to conserve and sustainably use oceans and seas, freshwater

resources, as well as forests, mountains and dry lands and to protect biodiversity, ecosystems and wildlife. We are also determined to promote sustainable tourism, tackle water scarcity and water pollution, to strengthen cooperation on desertification, dust storms, land degradation and drought and to promote resilience and disaster risk reduction. In this regard, we look forward to COP13 of the Convention on Biological Diversity to be held in Mexico in 2016.

The SDG's recognize that sustainable urban development and management are crucial to the quality of life of our people, therefore, it is essential to work with local authorities and communities to renew and plan our cities and human settlements. So as to foster community cohesion and personal security and to stimulate innovation and employment. It is essential to reduce the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment. It is also important to work with population trends and projections in our national, rural and urban development strategies and policies.

Sustainable development cannot be realized without peace and security; and peace and security will be at risk without sustainable development. The new Agenda recognizes the need to build peaceful, just and inclusive societies that provide equal access to justice and that are based on respect for human rights (including the right to development), on effective rule of law and good governance at all levels and on transparent, effective and accountable institutions. Factors which give rise to violence, insecurity and injustice, such as inequality, corruption, poor governance and illicit financial and arms flows, are addressed in the Agenda. Therefore, efforts to resolve or prevent conflict are essential and to support post-conflict countries, including through ensuring that women have a role in peace-building and state-building. To remove the obstacles and full realization of the right of self-determination of peoples living under colonial and foreign occupation further effective measures and actions are necessary in conformity

with international law, which continue to adversely affect their economic and social development as well as their environment.

We pledge to foster inter-cultural understanding, tolerance, mutual respect and an ethic of global citizenship and shared responsibility. We acknowledge the natural and cultural diversity of the world and recognize that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.

SDGs are A call for action to change our world

Today we are taking a decision of great historic significance. We resolve to build a better future for all people, including the millions who have been denied the chance to lead decent, dignified and rewarding lives and to achieve their full human potential. We can be the first generation to succeed in ending poverty; just as we may be the last to have a chance of saving the planet. The world will be a better place in 2030 if we succeed in our objectives.

Ann agenda for global action for the next fifteen years – is a charter for people and planet in the twenty-first century. Children and young women and men are critical agents of change and will find in the new Goals a platform to channel their infinite capacities for activism into the creation of a better world.

“We the Peoples” are the celebrated opening words of the UN Charter. It is “We the Peoples” who are embarking today on the road to 2030. Our journey will involve Governments as well as Parliaments, the UN system and other international institutions, local authorities, indigenous peoples, civil society, business and the private sector, the scientific and academic community and all people. Millions have already engaged with, and will own, this Agenda. It is an Agenda of the people, by the people, and for the people – and this, we believe, will ensure its success.

The future of humanity and of our planet lies in our hands. It lies also in the hands of today's younger generation who will pass the torch to future generations. We have mapped the road to

sustainable development; it will be for all of us to ensure that the journey is successful and its gains irreversible.

Key Transformations

International Project-Based report on ‘Global Citizenship Education’ presents six key transformations needed to achieve the SDGs in a manageable way, based on the major drivers of societal change, including human capacity, consumption and production, decarbonization and the digital revolution. These are: 1. Digital Revolution (Artificial intelligence, big data, biotech, nanotech, autonomous System 2. Smart cities (decent housing, mobility, sustainable infrastructure, Pollution) 3. Food Biosphere and Water (Sustainable intensification, bio diversity, forests, oceans, healthy diets, nutrients).

For the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and people like you and us. STEAM is helpful to solve the challenges of gender equality, diversity and financial independence as well as building in the promising fields of technological innovation.

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Skills of Teaching

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When we discuss teaching and learning in education, we are discussing the essence of our life, the generations which we direct for the future which we are looking at, the relations between people in different countries, the prosperity of peoples' lives, living peacefully on this global.

Any time we mention the words teaching and learning immediately comes up to our minds the teachers and the learners. The teacher is the center of the teaching process. He is the generator of the teaching process. Anyone can enter the classroom and play the role of a teacher, but not anyone can be a teacher. Who is the teacher whom we are looking for then?

The teacher is the one who has the ability to change lives and develop well-educated and respectable students; who can help with not only his students' knowledge growth but personal improvement, too. Good educators are high in demand, but to be an effective teacher, you need to have a diverse set of professional skills to complete your work.

Teachers influence the lives of students much more significantly than we imagine. A teacher with the right skills inspires and influences entire student lives. They are instruments who can ignite powerful thoughts in students, helping them unleash their true potential. To be an effective teacher, you should be able to motivate and support students, so that they are well-equipped to deal with any challenges life throws at them both academically and otherwise.

For the teaching to be effective:

1-The teacher must maintain a good appearance because he will be looked at as an example and

surveyed from head to foot by scores of students' examining eyes.

2-The teacher's voice must be clear and loud enough to be easily heard by all students in the classroom..

3-The teacher should prepare his lesson very well in respect of what and how he is going to teach.

4-He/she should master his subject matter and know more than his students do and more than what textbooks offer.

5- He/she should encourage his students through praise, rewards, and the likes.

6- He/she should notice individual differences among students.

7- He/she should be kind with his students.

8- Kindness should not mean weakness since the teacher needs to be kind and strict at the same time.

9- The teacher should be fair to all his students.

10- He/she should like his work because his students can easily tell whether he really likes his profession or not and their attitude may largely depend on their conclusion.

11- He/she should give his students the maximal chance to participate in class activities.

12- He/she should know not only what to teach, but also the different methods of teaching.

What are the characteristics of good teachers?

1. Good teachers see as their most important task to help students learn.

2. Good teachers display enthusiasm for their subject, and a desire to share it with their students.

3. Good teachers draw on their knowledge of their

subject.

4. Good teachers encourage learning for understanding and are concerned with developing their students' critical-thinking skills, problem-solving skills.

5. Good teachers show respect for their students; encourage their independence, and sustain high expectations of them.

6. Good teachers set clear goals, use valid and appropriate assessment methods.

7. Good teachers show flexibility.

8. Good teachers are prepared to develop their teaching through cooperation with others.

9. Good teachers are also good learners.

10. Good student grades may also be a result of good teaching!

Teaching skills

Teaching skills are related to the way in which the teacher has carried out the activities and what results have been achieved.

Teaching skills can be demonstrated by creating good conditions for student learning.

The following are some teaching skills

1. Enthusiasm
2. Leadership
3. Organization
4. Respectfulness
5. Teamwork
6. Ability to teach
7. Communication
8. Creativity
9. Self-evaluation
10. Patience
11. Critical thinking
12. Confidence
13. Sense of humor
14. Imaginative thinking

15. Time management

16. Computer skills

To have a successful teaching process, there should be some basic classroom techniques to be applied by the teacher in the classroom, here are some of them:

- 1- Look at all the students in the class.
- 2- Vary your techniques for asking questions.
- 3- Don't go around the class.
- 4- Include everyone.
- 5- Make sure the class is seated in the best possible way.
- 6- Limit teacher talking time.
- 7- Write clearly.
- 8- Encourage your students.
- 9- Be careful with the use of grammatical terms.
- 10- Encourage your students to practice the language outside the classroom.
- 11- Take account of different levels within the class.
- 12- Deal with individual problems.
- 13- Correct your students systematically.
- 14- Use their names correctly.
- 15- Engage all learners in the lesson.
- 16- Make learners, and not the teacher, the focus of the lesson.
- 17- Provide maximum opportunities for students' participation.
- 18- Develop learner's responsibility.
- 19- Be tolerant of learners' mistakes.
- 20- Develop learners' confidence.
- 21- Respond to learners' difficulties and build on them.
- 22- Use a maximum amount of student-to-student activities.
- 23- Promote cooperation among learners.
- 24- Practice both accuracy and fluency.

The Language Teacher

The language teacher is considered as the most important factor in making the study of the language successful. In spite of the new trends of introduction of teaching machines, and of child-centered education, the teacher occupies a pivotal position in helping children to develop knowledge in the language. There are three important things, which makes one a good language teacher: 1)

He should know his students; ii) He should have perfect knowledge of the language; and iii) He should know the art of teaching the language, knowing the students involves a knowledge of students' needs, their characteristics, interests, aptitudes on one hand, and their problems, their individual difficulties, their specific requirements, and a systematic understanding and dealing with individual child on the other. This is the pre-requisite to make a good teacher.

Problems face the foreign language Teacher

Some teachers are born teachers, they have the ability and the wish to transfer knowledge or skills from themselves to others, and they have the sympathy and patience to do this in ways that the students can really understand and learn from.

Each teacher has his own problem; no two teachers may have exactly the same number of problems though in some respects they may have similar problems. Under any situation, a teacher is the best judge to take stock of all his problems and to find solutions thereof.

A good teacher spends as little time as possible talking, and as much as possible encouraging his students to talk, read and write. To encourage them he tries to make their work as relevant to real -life needs, and as closer to interesting communication as he can; and he shows that he is interested to what his students say and write.

Effective Language Teaching

The main aim of training teachers is to familiarize them with effective methods of teaching through the following:

- 1-Teachers are guided to teach the pronunciation of the foreign language.
- 2-They are guided how to teach the grammatical structures of the foreign language.
- 3-They are instructed on how to teach foreign language vocabulary..
- 4-They are also instructed on how to teach foreign language reading.
- 5-They are advised on how to teach writing.
- 6- They are also advised how to teach, and how to

test each language skill.

7- They are advised on what teaching aids they use in teaching the skills.

8-The teacher must maintain a good appearance because he will be looked at as an example and surveyed from head to foot by scores of students' examining eyes.

9-The teacher's voice must be clear and loud enough to be easily heard by all students in the classroom. Otherwise, students will find it difficult to follow what he says.

10-The teacher should prepare his lesson very well in respect of what and how he is going to teach.

11-He should master his subject matter and know more than his students do and more than what textbooks offer.

12- He should encourage his students through praise, rewards, and the likes.

13- He should notice individual differences among students.

14- He should be kind with his students.

15- Kindness should not mean weakness since the teacher needs to be kind and strict at the same time.

16- The teacher should be fair to all his students. He has to treat them equally without any prejudice for or against any of them.

17- He should like his work because his students can easily tell whether he really likes his profession or not and their attitude may largely depend on their conclusion.

18- He should give his students the maximal chance to participate in class activities.

19- He should know not only what to teach, but also the different methods of teaching.

Teaching Integrated Skills

Different people may have different perceptions towards the way language should be learned. Some people may argue that language should be learned by mastering its grammatical rules first while some others believe that mastering grammar will be not help students to acquire communicative competence of the language. Some believe that language should be acquired by learning the four language skills in an integrative way. Still, some others may support the idea that language should

be learned through a segregated-skill instruction, the mastery of discrete language skills.

Teaching language in an integrative way involves the integration of components of language with language skills. Integrative teaching may also refer to how to relate language skills: listening, speaking, reading and writing in learning process. The skills of speaking, listening, reading and writing should reinforce one another. Consequently, language teacher has to consider these four skills, with the language materials. Language teacher is supposed to deal with all of the four skills when working on each linguistic objective.

Changes in language teaching methods throughout history have reflected recognition of changes in the kind of proficiency learners need, such as a move toward oral proficiency rather than reading comprehension as the goal of language study; they have also reflected changes in theories of the nature of language and of language learning.

There are many language teaching methods, I will mention the following:

The Grammar Translation Method

The Grammar Translation Method is sometimes referred to in some books of teaching methods as the old method, the classical method, or the traditional method. The main features of this method are:

- 1- This method emphasizes reading, writing, and translation rather than speech.
- 2- It uses the native language as a major means to explain the words and structures of the foreign language i.e. the target language.
- 3- It teaches grammatical rules or generalizations to control students' correct usage of the FL i.e., the foreign language.
- 4- It employs some kind of grammatical analysis of the foreign language sentences.

Direct Method

The direct method is an extreme reaction to the traditional method. The main features of the direct method are these:

- 1-The direct approach gives priority to speech.
- 2- It considers translation to be a useless or even harmful activity in teaching foreign languages.
- 3- The native language has no place in foreign language test.
- 4- Words and patterns of the foreign language are best taught through direct association with objects or situations.
- 5- No grammatical rules are used.
- 6- It uses the mim-mem method. i.e. mimicry and memorization, by which students memorize selected foreign language sentences, dialogues, and songs after imitation.

The AURAL-ORAL Method

The aural-oral method is another reaction to the old method and a modification of the direct method. The aural-oral method is sometimes called the oral method, the linguistic method, the audio-lingual method, or the army method.

The assumptions underlying the aural-oral method are the following:

- 1-Language is mainly speech and writing is only a representation of speech.
- 2-Speech is the foreign language skill that has to be emphasized more than reading or writing.
- 3- Teaching of foreign language should follow the order of listening, speaking, reading and writing. The sequence implies that learners speak what they have listened to, read what they have spoken, and write what or about what they have read.
- 4-Acquiring the foreign language is similar to acquiring the native language.
- 5- The foreign language is best acquired through habit formation achieved by means of pattern practice.
- 6- Teaching about the foreign language is of no use.
- 7- Each language is unique.
- 8- Translation is harmful in teaching the foreign language.
- 9- The best foreign language teacher is a trained native speaker of that foreign language.

Eclectic Method

The eclectic method is a reaction to the previous methods. The assumptions underlying this eclectic

method are the following:

1-Each one of the three methods has something to offer to the process of teaching foreign languages.

2-No method is completely right or completely wrong since each method has arguments for it and arguments against it.

3-The previous methods may supplement one another instead of contradicting or competing with one another.

4-No method suits all goals, all students, all teachers, or all FL programs.

5-The important thing should be students and not loyalty to a certain approach.

6- The teacher should feel free to use the methods and techniques in any approach according to students' needs and the teaching-learning situation.

So we can see from the discussion above that teaching skills are the essence of the educational process , which should be dealt with in the classroom by all successful educators.

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Cognitive Load Theory and Individual Differences

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Abstract

We know individual differences is a major concern in all teaching-learning process in the classrooms. Majority of the problems that we face is the heterogenous nature of the classrooms. Cognitive Load Theory (CLT) to a large extent can solve the problems of individual differences since it is a psychological theory as it explores the psychological or behavioural phenomena of instruction. In this paper, more explanations regarding CLT and its influence on individual difference is dealt with, because CLT is simply all about understanding how we're able to process and store information. It is something that all teachers should understand, as it really helps us to understand how students process information.

Introduction

Cognitive Load Theory (CLT) is a psychological theory because it attempts to explain psychological or behavioral phenomena resulting from instruction. Psychological theories are concerned with the possible relationships among psychological constructs or between a psychological construct and an observable phenomenon of practical consequence. A psychological construct is an attribute or skill that happens in the human brain. In CLT, the main construct of interest is the cognitive load, hence the name of the theory and learning. CLT was developed to explain the effects of instructional design on these two constructs. The objective of CLT is to predict learning outcomes by taking into consideration the capabilities and limitations of human cognitive architecture. A similar psychological construct called 'mental load' was defined in the human factors psychology domain by Moray (1979) as the difference between task demands and the person's ability to master these demands. The mental load

construct is essential to the human factors which is concerned with understanding how human, specific, physical, cognitive and social properties may interact with technological systems, the human environment and human organisations. CLT is a way of explaining how students learn new information.

Because our working memory only has a limited capacity, it's very easy to overload. This is especially true when teaching new information to students.

As teachers, Cognitive Load Theory is an important idea that we should use to inform the way we teach. In fact, it can significantly affect learning outcomes. But what does this actually mean in practice? In a nutshell, it's about adapting the way we teach to cater for students' limited working memory.

The theory itself was born out of John Sweller's research into problem solving in the late 1980s. Sweller was interested in the ways humans gain knowledge. He wanted to better understand how we can reduce the cognitive load of learners so they can retain more information for longer.

CLT examines the complex relationship between our working and long term memory. It states that if we can't process information in our working memory, then it won't be transferred and stored in our long term memory. Then, we won't be able to remember it in the future.

Because our working memory is limited in terms of capacity and duration, it's easy for some information to be lost and not be retained in our long term memory.

Sweller found that instructional design theories were an efficient way of reducing the cognitive load of learners. Instructional design is the process of adapting the way we teach to suit the needs of the learner.

Sweller's Cognitive Load Theory has roots in the origins of cognitive science in the late 1950s. G.A Miller introduced the idea that our working

memory has limited capacity and can easily be overloaded. This informed Sweller's development of CLT which built on Miller's theories about the limits of working memory.

Individual Differences

Individual difference in learner characteristics take many different forms, ranging from preferences for learning from different presentation formats (eg. Verbal, pictorial) or modalities (auditory, visual) and preferences for learning under different environmental conditions (eg. Lighting, noise level or physical position) to cognitive styles (eg. Field dependency, independency), cognitive abilities (eg. Verbal, spatial ability) and intelligence. (Carroll, 1993).

Categories of Individual differences in learning

Information processing	Information gathering	Regulation of processing
Cognitive controls	Learning styles	Motivation
Cognitive abilities	Learning preferences	Metacognition/self regulation
Prior knowledge	Personality types	

According to CLT, the magnitude of mental load in learning depends on the schemas that have been previously acquired by the learner. A learning element is a function of the level of learner expertise. What constitutes a learning element and which elements interact with each other depends on a learner's schemas; a set of many interacting element for one person may be a single element for another, more expert learner.

Spatial Ability and CLT

Spatial abilities include 3 basic factors related to the processes of generating, retaining and manipulating visual images, spatial relations, the ability to mentally rotate visual images, spatial orientation, the ability to imagine how visual images might look from a different perspective and visualization, the ability to manipulate visual patterns and identifying mental images (Carroll, 1993, Lohman, 1979).

Most of the studies that related individual difference and cognitive load have investigated the

effect of spatial abilities under different extraneous load conditions. The instructional implications of these studies is that high spatial ability is typically related to better performance when instruction includes high level of cognitive load, such as when it presents complex visio-spatial materials. Whereas, learners with lower spatial ability may not be able to process such high load materials deeply, learners with higher spatial ability have the cognitive capacity to benefit from them.

Self- regulation skills

The concept of self- regulation describes the self-directed process of monitoring and regulating one's learning. Self- regulation is a cyclical cognitive activity that involves forethought, performance and reflection (Zimmerman, 1998). There is

evidence that supports the notion that self-regulation is strongly related to overall cognitive load and that high cognitive load can result in failure of reflective self-regulation of performance in some learners (Bauneisten, 2000). An important determinant of learners' self-regulation is their level of prior knowledge, which in turn, is a determinant of intrinsic cognitive load. Learners with different levels of prior knowledge regulate their own learning by employing different learning strategies. (Hmelo, Nagarajan and Day, 2000). Self-regulation activities themselves can also be viewed as generating extraneous cognitive load, because the monitoring, control and reflection activities involved in self-regulation require the investment of additional mental effort.

Despite the general finding that learners with higher self-regulation perform better than learners with low self-regulation, the relationship between cognitive load and self-regulation is complex and depends on several different factors that relate to both the learner and design of the materials.

Learners with higher prior knowledge usually apply deeper and more effective self-regulation strategies that use the available working memory resources more efficiently than learners with low prior knowledge. There is equivalence that under high cognitive load and conditions, learners use less appropriate strategies for self-regulation than under low cognitive load conditions. The cognitive processes involved in self-regulation can add to the experienced cognitive load as a function of the effectiveness of an individual's learning strategies. However, when goals and scaffolds are well designed, this extraneous cognitive load can be reduced and learning can be facilitated.

Conclusion

Without any doubt, CLT has become one of the most influential theoretical frameworks of educational psychology in recent years, inspiring researches all over the world to conduct an enormous amount of high- quality experimental research on how to design instruction in an efficient learner-oriented way. CLT has been widely used as the theoretical framework for several instructional design areas, such as complex problem- solving environments, worked out example instruction and multimedia learning.

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Blended Learning- An Instructional Strategy(UN-SDG4)

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The Pandemic shuttered education institutions across the globe. But one thing is sure, the need to adapt and evolve. Hence a turn, to the Blended Learning approach . It will be the New Normal during the pandemic in teaching and learning.

The success story of Mr. Barr, a 22 year youth from Israel ,who used Blended learning(an example)

UN- SDG4 -- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

What is Blended Learning ?

Blended Learning is an approach to education . Here the use of traditional classroom teaching methods together with the use of online learning for the same students, studying the same content in the same course. It requires the physical presence of both teacher and student, with some amount of student control over time, place , or pace. While students still attend ‘brick and mortar’ schools with a teacher present face-to -face(f2f) ,classroom practices along with computer – mediated activities for content delivery. Ideally each online and offline will complement each other. It is a thoughtful fusion of face to face and online learning experiences (Garrison and Vaughan 2008). In modern terms , it is an advanced variant of learning programming by the use of the internet and multimedia . Research studies concluded that the student achievement was higher in blended learning.

‘Blended Learning’ is sometimes called ‘hybrid learning’, ‘technology mediated instruction ‘, ‘web -enhanced instruction ‘ , and ‘mixed mode instruction.’ in research literature. In 2006 the term became more concrete with the publication of the first Handbook of Blended Learning by Bonk and Graham.(2007). Thus defined ‘Blended

Learning Systems ‘ as learning systems that combine face -to -face instruction with computer mediated instruction. Combining internet and digital media are involved in blended learning in the current form. There are different models of Blended Learning. They include – Face -to -face driver ,Rotation, Flex, Labs , Self – blend, Online driver. These models also can be blended together. There are many components that can compromise blended learning.

Covid-19 brought a pandemic shift in India’s Education System. A Blended Learning system must recognise Real World Challenges. Class room and Technology need to be used to make learning more democratic and participatory leading to potential increase in learner creativity and independence. A recent circular by UGC (16 June 2021) proposes that all Higher Education Institutions (HEI) future of learning – Blended Learning. Teach 40 percent of a course online and 60 percent through traditional offline. It is not fixed. Blended Learning (BL) increases student engagement, enhances student teacher interaction, flexible timing, learning environment .Also it shifts the role of teacher from knowledge provider to coach or mentor.

Making Blended Learning Work.

Creating an effective Blended Learning environment means making appropriate choices and overcoming the challenges facing use of technology (Athabasca University and Common Wealth Learning. (Martha Cleveland Innes , Mishra 2017)

Steps to ponder on..

1. Technology access- The first step is to know which resources are available to your students. Check band width, unreliable internet connectivity or lack of devices, such as laptops, or smart phones. Once you are clear about access, you can choose learning activities with the technology in ways that allow all to participate.
2. Design : - Creating the appropriate in person and online activities means designing courses with the pedagogic principles of both and integrating technology in a way that supports

meaningful learning. The four BL designing steps include – Incorporating flexibility, stimulating interaction, facilitating students learning process, and fostering an affective learning climate.

3. Safety and security - Create awareness of cyber mylice and ensure security interventions against unethical learning practices, academic dishonesty. Identity theft, and bullying in place.

4. Skill development, support and training. – Both students and instructors must have technological literacy and competence with technology application.

5. Motivation: - Students need adequate motivation when engaging in a wide range of often shifting learning modalities some of which may require significant skill development.

Successful Blended Learning.

According to Baldwin Evans (2006) the most effective Blended Learning design offers a learner centered approach that is personalisable and accessible. Most important is training for teachers and technology for creating a right blend for deep meaningful activities. Give students opportunities to adjust to the online learning. Technology to be purchased in institutions only after careful plan of using it. Blended Learning is more than technology in class room. According to Beams (2017) introducing technology for the sake of technology does not work. She suggested following specific process for the success of BL.

1. Focus on the pedagogy- Identify benefits, design and delivery. Provide excellent outcome and high student engagement and satisfaction. Course, subject, and student keeping in mind what activities for online and off line to select to be clear in mind.

2. Choose your Technology carefully. Technology and the activities must blend. Blended learning should support flexibility for students to do in their own pace. Activities to be well monitored through learning analytics and electronic assignment submission in person and online work to be linked. Well timed feed back to be given.

3. Remember the curriculum. What are the expected outcomes (skills). The four rotation model to remember. Whether this course is

appropriate for Blended Learning. In all blended models flexibility, student choice and opportunities to learn about learning should be included.

4. Create detailed plan with documented learning outcome, description of technology, device, clear delivery methods, explicit engagement opportunities and assignments aligned with learning outcomes. Review topic with expert friends.

Understanding Blended Learning Models

The four emerging blended learning models in most blended courses today are–

1. Rotation model, 2. Flex model 3. A La Carte model (Self Blend model) 4. Enriched Model.

In addition to the above four models, 5. Face -to-Face Driver model, 6. Online Driver model are also used. Need based selection of the model will be done by the educator.

Principles that Support Blended Learning.

Teaching process in blended learning environment is guided by specific principles of practice.

1. Open communication 2. Critical reflection 3. Community sense 4. Purposeful inquiry 5. Sustained collaboration 6. Ensure that inquiry moves to resolution 7. Assessment intended to learning outcome

Benefits of Blended learning/ Uses

1. Opportunity for collaboration at a distance 2. Increased flexibility. Letting students to learn without the barriers of time and location 3. Increased interaction. - BL offers a platform to facilitate greater interactivity between students as well as between students and teachers.

4. Enhanced learning and retention. Additional type of learning activities improve engagement and can help students achieve higher levels of meaningful learning.

5. Learning to be virtual citizens. Learners practice to project them socially and academically. In an online community of inquiry. Digital learning skills are essential to be a life long learner and blended course help learners master the skills for

using a variety of skills

6 Reduction in costs . -Requires fewer classrooms , fewer instructors, less commuting time, less money spent.

Disadvantages of Blended Learning

Unless successfully planned and executed blended learning could have disadvantages.

- 1 .The technology challenge infrastructure leading to high maintenance cost.
- 2 Blended Learning makes teachers overwork.
- 3 Students can experience cognitive load too.
- 4 Strong dependence on technology

Evaluating Successful Blended Learning

Four general factors are considered in general for evaluation.

1. The pattern of delivery mode
2. The materials, Evaluation technology and media used.
3. The use of varying pedagogical models
4. The temporality of synchronous and asynchronous methods.

Quality assessment rubrics for Blended Learning have yet to be researched for.

Evaluation indicators of Blended Learning in the Common Wealth of Learning frame work include;-

Social presence, Cognitive presence, Teaching presence, Emotional presence.

One has to look evaluation of Blended Learning through the lense of continuous improvement.

Blended Teacher as 'bricoleur'.

A bricoleur is one who creates or crafts from a diverse range of materials and tools which happen to be available. A teacher as bricoleur makes a series of professional judgements about what , how and why to teach.

Blended teach' Learners' and 'educators' need a new mindset.

The art of teaching in Blended Learning.

Many activities and instructional methods are included for effective blended learning. For successful blended learning incorporation of different activities are essential. Some of them are ;- Synchronous and Asynchronous learning , Flipped learning, Machine learning, Deep learning ,Immersion learning .

Synchronous and Asynchronous learning.

Synchronous classes are in real time given with students and instructors attending together from different locations which can be collaborative in nature incorporating e- activities. (Salmon 2013) Eg. Zoom, Google meet. Here more conversational approach, instant feed back. discussions, dynamic learning opportunities. Asynchronous classes offer learners the flexibility to learn in self – paced manner from anywhere, anytime, . anyone can learn. Here pre-recorded lectures students watch independently. Teachers post online notes, , autoquizes on the matter. Prompts for discussion can be given. It is more democratic, accessable with flexibility..Delay in responding gets more time. Thus help to develop higher order thinking skills and divergent thinking.

Flipped Learning.

Flipped Learning is an instructional strategy. It is a methodology that helps teachers to prioritize active learning during class time. A type of blended learning , which aims to increase student engagement and learning by having students complete reading at home and work on live problem solving in class. Flipped Learning is a learner-centered model. It 'flips' work traditionally done at home to the class room. It is an extension of classic Montessori work- time.

It is a new version of Blooms Taxonomy.- focusing, remembering ,understanding, applying ,analising, evaluating and creating. Flipped Classroom and Flipped Learning are terms that are not interchangeable.

Benefits. – 1. Here teacher becomes a facilitator rather than a disseminator as I traditional class room setting. 2. Self paced Work. 3. Individualised

Learning 4.Increased student Engagement.

Machine Learning.

Machine Learning is a branch of Artificial Intelligence(AI).It focuses on building applications that can automatically and periodically learn. Thus improve from experience without being explicitly programmed.. -----(2021)

Deep Learning

Deep Learning refers to cognitive skills and academic knowledge that students need to succeed in the 21st Century. These skill include critical thinking, problem solving, Communication, collaboration and learning to learn.

Immersion Learning

Immersion learning is an educational approach. It teaches a student by placing him directly into that environment. The best formula for mastering any skill is to immerse totally into what one want. Don't hold back.Give it all the time you have got and you will emerge more skillful than before.It is more effective in language learning.

UGC Proposal and Blended Learning.

A recent proposal of UGC has recommended that all Higher Education Institutions (HEI) due to pandemic teach in Blended Learning pedagogical approach, with 40% of the course to be taught online and the rest 60% through traditional offline methods. Blended learning system must recognise real world challenges.Many research findings supported the positive results of Blended Learning. They include- increased student engagement, Enhance student teacher relation, Flexible teaching learning environment, Improved learning outcome, Better experiential learning, Time management and flexibility. The concept note of UGC also pointed out about the NEP 2020 and transformation of education. It is time to move on to a policy that is student centric. Time has come to make all efforts to respond to the dreams and aspirations of the students.Thus Higher Education Institutes acceptance of BL is the need today as BL lead to educations three cardinal principles access, equity and equality.

Blended Learning a step in UN -SDG4

BL is an ideal instructional strategy for supporting and achieving SDG4, the fourth goal of 2030 UN agenda for sustainable development. This instructional strategy giving a ' Sustainability Boost' to the curricula. The focus aims of SDG4 - inclusive and equitable quality education will promote life long learning can be achieved .During this strategy application, one will gain the knowledge ,skill and experiences need to develop a sustainability mindset and be able to integrate sustainability principles into the practices and curriculum content..The UN sustainable development consider social,economic, and environmental parameters to ensure future readiness.

Conclusion

Blended Learning can be the best of both worlds .Once implemented successfully it has significant benefits to the students, organization , and employees for a vibrant higher education system. BL makes learning exciting, enriching and prepare students to a technology driven world. We may be grieving for what we lost.. Catastrophes come. Yet we succeed.

To quote the words of Donald A .Norman, ' I am not a fan of Technology. I am a fan of Pedagogy of understanding how people learn and the most effective learning methods..But technology enables some exciting changes.'

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UN Sustainable Goals and COVID-19 Pandemic

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The SDGs are a roadmap for humanity. The 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. The SDGs aim to be relevant to all countries – poor, rich and middle-income – to promote prosperity while protecting the environment and tackling climate change. They have a strong focus on improving equity to meet the needs of women, children and disadvantaged populations in particular so that “no one is left behind”.

Countries have committed to prioritize progress for those who're furthest behind. The SDGs are designed to end poverty, hunger, AIDS, and discrimination against women and girls. The creativity, knowhow, technology and financial resources from all of society is necessary to achieve the SDGs in every context. They encompass almost every aspect of human and planetary wellbeing and, if met, will provide a stable and prosperous life for every person and ensure the health of the planet. The pandemic presents both an enormous challenge and tremendous opportunities for reaching the 2030 Agenda and the Sustainable Development Goals (SDGs). But the pandemic also shows us the wisdom of what is already inherent in the SDGs; the challenges we face cannot be dealt with in isolation.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) were set in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030. They are 17 interlinked global goals designed as the future global development framework to succeed the Millennium Development Goals which ended in 2015.

The 17 SDGs are: (1) No Poverty, (2) Zero Hunger,

(3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry, Innovation and Infrastructure, (10) Reducing Inequality, (11) Sustainable Cities and Communities, (12) Responsible Consumption and Production, (13) Climate Action, (14) Life Below Water, (15) Life On Land, (16) Peace, Justice, and Strong Institutions, (17) Partnerships for the Goals.

The year by which the target is meant to be achieved is usually between 2020 and 2030.

The Sustainable Development Goals (SDGs) constitute the core of the 2030 Agenda for Sustainable Development and guide all global, regional and national development endeavours for the next 15 years. The United Nations Industrial Development Organization (UNIDO) is fully committed to contributing to the achievement of the SDGs, while delivering on its mandate to support Member States in achieving inclusive and sustainable industrial development (ISID). The following actions are taken by UNIDO to contribute to the SDGs. Due to the interlinked nature of the SDGs, many of UNIDO's activities contribute to more than one SDG.

There were serious impacts and implications of the COVID-19 pandemic on all 17 SDGs in the year 2020.

•End poverty in all its forms everywhere”.[15] Achieving SDG 1 would end extreme poverty globally by 2030.

The goal has seven targets and 13 indicators to measure progress. The five “outcome targets” are: eradication of extreme poverty; reduction of all poverty by half; implementation of social protection systems; ensuring equal rights to ownership, basic services, technology and economic resources; and the building of resilience to environmental, economic and social disasters. The two targets related to “means of achieving” SDG 1 are mobilization of resources to end poverty; and the establishment of poverty eradication policy frameworks at all levels.

About 10 percent of the population live in poverty and struggle to meet basic needs such as health, education, and access to water and sanitation in spite of the ongoing progress.

A study published in September 2020 found that poverty increased by 7 per cent in just a few months due to the COVID-19 pandemic, even though it had been steadily decreasing for the last 20 years. [22]:9

- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

It has eight targets and 14 indicators to measure progress.[24] Ending hunger and improving access to food; ending all forms of malnutrition; agricultural productivity; sustainable food production systems and resilient agricultural practices; and genetic diversity of seeds, cultivated plants and farmed and domesticated animals; investments, research and technology are the five outcome targets.

- Good health and well-being.

Ensure healthy lives and promote well-being for all at all ages[27] .The major targets are reduction of maternal mortality; ending all preventable deaths under five years of age; fight communicable diseases; ensure reduction of mortality from non-communicable diseases and promote mental health; prevent and treat substance abuse; reduce road injuries and deaths; grant universal access to sexual and reproductive care, family planning and education; achieve universal health coverage; and reduce illnesses and deaths from hazardous chemicals and pollution. The death rate has increased during COVID pandemic period.

- Quality education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The major targets are free primary and secondary education; equal access to quality pre-primary education; affordable technical, vocational and higher education; increased number of people with relevant skills for financial success; elimination of

all discrimination in education; universal literacy and numeracy; and education for sustainable development and global citizenship. Many constraints are there in maintaining quality due to school and college closures during the pandemic period. But the authorities have tried their level best to provide online learning platforms for ensuring the quality to a certain extent.

- Gender equality Achieve gender equality and empower all women and girls.

It aims to grant women and girls equal rights, opportunities to live free without discrimination including workplace discrimination or any violence. This is to achieve gender equality and empower all women and girls.

- Ensure availability and sustainable management of water and sanitation for all.

The targets include Safe and affordable drinking water; end open defecation and provide access to sanitation and hygiene, improve water quality, wastewater treatment and safe reuse, increase water-use efficiency and ensure freshwater supplies, and restore water-related ecosystems.

- Affordable and clean energy – to ensure access to affordable, reliable, sustainable and modern energy for all.

To promote access to research, technology and investments in clean energy; and expand and upgrade energy services for developing countries are the targets . In other words, these targets include access to affordable and reliable energy while increasing the share of renewable energy in the global energy mix.

- Industry, Innovation and Infrastructure, has eight targets, and progress is measured by twelve indicators. The main targets are develop sustainable, resilient and inclusive infrastructures; promote inclusive and sustainable industrialization; increase access to financial services and markets; upgrade all industries and infrastructures for sustainability; enhance research and upgrade industrial technologies.

- Reducing Inequality, the Goal has ten targets to be achieved by 2030. The major targets are reduce income inequalities; promote universal social, economic and political inclusion; ensure equal opportunities and end discrimination; adopt fiscal and social policies that promotes equality etc. “Make cities and human settlements inclusive, safe, resilient, and sustainable”.

- Strong national and regional development planning; implement policies for inclusion, resource efficiency and disaster risk reduction; support least developed countries in sustainable and resilient building.

- Ensure sustainable consumption and production patterns. To ensure that plastic products are more sustainable, thus reducing plastic waste, changes such as decreasing usage and increasing the circularity of the plastic economy are expected to be required. An increase in domestic recycling and a reduced reliance on the global plastic waste trade are other actions that might help meet the goal.

- Climate action:Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy;

Life on land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Peace, justice and strong institutions is to: “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”.

Reducing violent crime, sex trafficking, forced labor, and child abuse are clear global goals. The International Community values peace and justice and calls for stronger judicial systems that will enforce laws and work toward a more peaceful and

just society.

Partnership for the goal

Strengthen the means of implementation and revitalize the global partnership for sustainable development”. Goal 17 is included to assure that countries and organizations cooperate instead of compete. Developing multi-stakeholder partnerships to share knowledge, expertise, technology, and financial support is seen as critical to overall success of the SDGs. The goal encompasses improving north-south and South-South cooperation, and public-private partnerships which involve civil societies are specifically mentioned.

To achieve sustainable development, three sectors need to come together: The economic, socio-political, and environmental sectors are all critically important and interdependent.[88] Progress will require multidisciplinary and trans-disciplinary research across all three sectors. This proves difficult when major governments fail to support it.

According to the UN, the target is to reach the community farthest behind. Commitments should be transformed into effective actions requiring a correct perception of target populations. Data or information must address all vulnerable groups such as children, elderly folks, persons with disabilities, refugees, indigenous peoples, migrants, and internally-displaced persons.

Impacts of COVID-19 pandemic

Our socio-economic assessments, based on findings from more than 70 countries and five regional reports, show that while most developing countries are in the early stages of the pandemic, they are already dealing with its negative effects(UN report).

The COVID-19 pandemic in 2020 has offered countries an opportunity to build recovery plans that will change current trends and also change consumption and production patterns towards

achieving a more sustainable future. The pandemic has proved that weaknesses emerge from our systems, and to meet sustainable development goals, responsibility should begin from our governments down to other civil servants.

The pandemic presents both an enormous challenge and tremendous opportunities for reaching the 2030 Agenda and the Sustainable Development Goals (SDGs).

Our socio-economic assessments, based on findings from more than 70 countries and five regional reports, show that while most developing countries are in the early stages of the pandemic, they are already dealing with its negative effects. The economic crisis caused by the COVID pandemic is expected to contribute to global unemployment of more than 200 million people next year, with women and youth workers worst-hit, UN labour experts . With the increase of domestic responsibilities due to school closures, unemployed women face the threat of falling back into their traditional homemaking roles, which may reverse several decades of feminism.

On the other hand, women are not the only group predominantly affected by the pandemic. Making up a high proportion of the workforce, youth workers also faced massive layoffs, as well as cut wages due to the pandemic. In a study by the UN labour agency, it was reported that more than one in six young people has stopped working since the pandemic.

We have seen that more countries report infection and lockdown, more domestic violence helplines and shelters across the world are reporting rising calls for help. In many countries like Argentina, Canada, France, Germany, Spain, the United Kingdom government authorities, women's rights activists and civil society partners have flagged increasing reports of domestic violence during the crisis, and heightened demand for emergency shelter. Helplines have registered . Confinement is fostering the tension and strain created by security, health, and money worries. And it is increasing isolation for women with violent partners,

separating them from the people and resources that can best help them.

UNESCO estimates about 1.25 billion students are affected by lockdowns. UNDP estimates 86 percent of primary school children in developing countries are not being educated. The pandemic has highlighted the need of digital divide and the right to internet access , particularly for those in rural areas.

Scientists have warned for years that unrestricted deforestation, the illegal wildlife trade, and diseases that cross from animals to humans would unleash an uncontrollable pandemic. That's why investing in green economies is crucial to restore the balance between people and planet and help countries recover. Like a double helix, the SDGs and the COVID-19 pandemic response are intertwined and cannot be tackled by a piecemeal approach. UNDP is breaking with the past. The pandemic has given us permission to do what was once almost unimaginable—redesign the way we work.

For the first time in a hundred years, the world is focused on a common goal: beating coronavirus. COVID-19 is already testing us in ways most of us have never previously experienced, providing emotional and economic shocks that we are struggling to rise above. The violence that is emerging now as a dark feature of this pandemic is a mirror and a challenge to our values, our resilience and shared humanity. We must not only survive the coronavirus, but emerge renewed, with women as a powerful force at the centre of recovery.

In times of crisis, violence against women and girls is likely to increase . The same is the situation during this pandemic period.

The studies conducted by UN reported that under a high damage scenario with little recovery, the number of people in poverty in 2050 is estimated to be 800 million, approximately 220 million more than the expected Covid Baseline. School closures and distance learning worsen student performance . It is a fact that the Covid-19 pandemic has

drastically impeded student's learning progress in schools and further increased disparities in society. The uneven access to technological devices and wifi have made constraints to student learning, leaving many underprivileged students across the globe behind in their academic studies, which may, in turn, delay their education and negatively affect their future.

While the benefits of Covid-19 on education may seem scarce, there is still hope. Indeed, the pandemic has created a space for educators to rethink educational models for school including shifting educational focuses away from formal assessments, and increasing integration of curriculums that hold a focus on resilience, leadership, and critical thinking skills

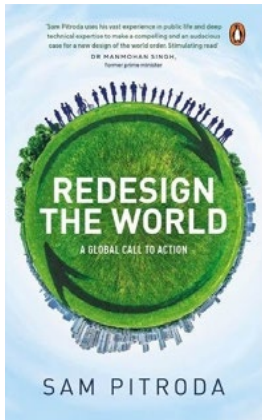
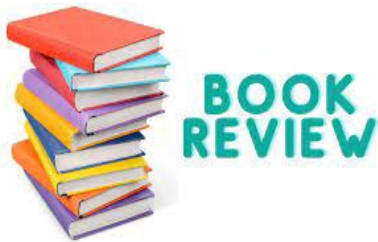
Conclusion

Getting “back to normal” is simply not feasible—because “normal” got us here. The crisis has shown us how deeply connected we are to others and to the planet. COVID-19 is forcing us to revisit our values and design a new area of development that truly balances economic, social and environmental progress as envisioned by the 2030 Agenda and the SDGs. Integrated solutions are the only way in which we'll be able to build a greener and more inclusive future to help countries meet the 2030 goals.

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Redesigning The World: A Global Call to: A Global Call to Action
by Sam Pitroda (Author)

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Review of Redesign the World by Sam Pitroda
Glen T. Martin

This book is by the key person who revolutionized the telephone system in India. Sam Pitroda grew up in modest circumstances in India and was deeply influenced by both the simple wholesome values of this own family and by those of Mahatma Gandhi, who was assassinated in 1948 when Sam was six years old. Sam was educated and worked in both India and the USA, and, by his own testimony, “by age thirty-eight, I had made enough money to attain the financial independence to pursue my dreams.”

The first thing Sam did after this was to return to India to spend the next ten years connecting India through developing its telephone system. He worked with Prime Minister Indira Gandhi and closely with her son Rajiv Gandhi to give India connectivity. Today, he has a vision of “hyperconnectivity” to connect the entire world. In this book he expresses his vision for such hyperconnectivity, declaring that it can “empower people from the bottom up.” Contemporary communications technology can revolutionize democracy, economics, politics, and our common human future.

Sam Pitroda analyses the current world system that has been in place for 75 years, since the founding of the United Nations. He recognizes the pressure of the immense planetary population (today 8 billion people) on the environment and recognizes the “looming global water crisis” for humanity. In addition, “three billion people still live in poverty.” And a third of humanity lives under political systems where individual freedom is restricted and monitored. There have been perpetual wars and arms-races for these past 75 years. The reason for this chaos, he says, “lies in the present design of the world and the lack of global leadership.”

He sees that there have been several “tipping points” indicating the emergence of a changing world, as well as the need to redesign the order established 75 years ago. These include the decolonization of many former colonies, the rise of China as a global economic power, and the fall of the Soviet Union. They also include the rise of the “war on terror” after 9/11, the increasing inequality in the world, and the COVID-19 pandemic, all of which portend that we must be thinking in new ways, exploring the power of connectivity and the need for a world design focused on the five fundamental principles that he identifies.

He says that it is time to “take democracy to a new level” and redesign the world according to five fundamental “pillars” that constitute “a radically new form of humanism.” The five pillars are inclusion, human needs, new economy,

conservation and sustainability, and non-violence. Inclusion means a new level of democracy that is opposed to “exclusion.” We need to bring the people of Earth together and empower them from the ground up. This means focusing on addressing human needs, in the form of ending poverty and creating a system that works for all persons, and not only for the few as now. It means a new economy that “upshifts our present capitalism model to a regenerative and circular economy based on decentralization, localization, networking...and equitable distribution of wealth.”

The results of this shift to inclusion, human needs, and a new economy will also include conservation and sustainability as well as non-violence. This takes us beyond capitalism’s “demand for endless growth” to a world in which we “slowly defund militaries of the world” in our movement toward a truly redesigned world system. He declares: “It is time to spend more on saving lives than killing people.” Drawing on the immense potential of hyperconnectivity, we must “start a global conversation” concerning “the global constitution and global government.”

Persons familiar with the Constitution for the Federation of Earth will recognize that the Constitution deeply embodies all five of these pillars for redesigning the world. It is based throughout on the principle of unity in diversity, making it a premier document of “inclusion.” The Constitution is specifically based on addressing human needs for all persons on Earth, in large part because it moves beyond the antiquated “war-system” of the world to a system of measured and practical disarmament. The Constitution also addresses human needs and inclusion comprehensively because it founds a new economic system based on debt-free global public banking, banking that is no longer run by consortiums of private banks that systematically exploit peoples and nations who need money to survive—all of which both enriches them and drives nations and people ever deeper into debt.

It is also through these integrated ways that the

Constitution moves the world into a sustainability mode, since debt-free public banking alone can transcend the capitalist imperative for growth now destroying our planetary environment. It is the same for non-violence. The present world (of the past 75 years) is based on scarcity and needless competition: resulting in the economic deprivation of nations and billions of persons. Such a world requires violence and struggle for scarce resources. A world of plenty and sustainable flourishing can only be premised on an Earth Constitution that truly brings these five values to fruition as an integrated, holistic system.

This is precisely what it means to integrate inclusion, human needs, a new economy, sustainability and non-violence into a cohesive system. Sam Pitroda has produced a wonderful book. Now is the time to truly “redesign the world” based on the Constitution for the Federation of Earth.



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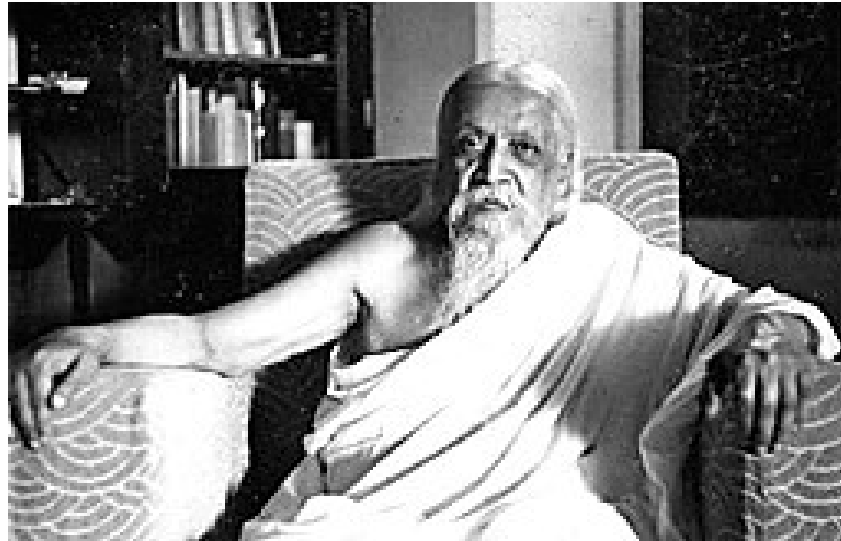
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Sri Aurobindo's Dream of World Federation



.....The third dream was a world-union forming the outer basis of a fairer, brighter and nobler life for all mankind. That unification of the human world is under way; there is an imperfect initiation organised but struggling against tremendous difficulties. But the momentum is there and it must inevitably increase and conquer. Here too India has begun to play a prominent part and, if she can develop that larger statesmanship which is not limited by the present facts and immediate possibilities but looks into the future and brings it nearer, her presence may make all the difference between a slow and timid and a bold and swift development. A catastrophe may intervene and interrupt or destroy what is being done, but even then the final result is sure. For unification is a necessity of Nature, an inevitable movement. Its necessity for the nations is also clear, for without it the freedom of the small nations may be at any moment in peril and the life even of the large and powerful nations insecure. The unification is therefore to the interests of all, and only human imbecility and stupid selfishness can prevent it; but these cannot stand for ever against the necessity of Nature and the Divine Will. But an outward basis is not enough; there must grow up an international spirit and outlook, international forms and institutions must appear, perhaps such developments as dual or multilateral citizenship, willed interchange or voluntary fusion of cultures. Nationalism will have fulfilled itself and lost its militancy and would no longer find these things incompatible with self-preservation and the integrality of its outlook. A new spirit of oneness will take hold of the human race.

