

Sustaining Quality Education in the 21st Century

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ABSTRACT

We are part of a globalized world that is reflected in problems associated with the development of the various dimensions of human endeavor. Intellectuals and scientists, who explain the complexity of the 21st century, emphasized on the fact that human beings swing between a strong consumer tendency and the capture of immediacy. There is a need for an ideal interconnected to values and ongoing actions tending towards sustainability. This is with the aim of legitimizing the various dimensions of human development where education forms a determining part. Taking into account the mentioned context, this work reflects on the work of the teacher, a key piece in the formation of students and institutional view. The literature will be reviewed and practical strategies will be proposed and focused on strengthening human understanding in global complexity. **This is because teachers are expected to become the strategists that avert the great challenges faced by education in the 21st century global society.** The converging impact of globalization, ICT and knowledge explosion has led to phenomenal changes in the modern society, which have challenged every aspect of our modern lifestyle.

To cope with these run-away changes we need to prepare workforce with the skills to handle a range of electronic technologies that characterize this digital era. To prepare citizens with cosmopolitan outlook, cross-cultural understanding, capable of working in multicultural settings on group projects and capacity to think creatively and critically a different approach to the delivery of education is required. This paper argues that nothing less than a radical change, especially in the developing countries, is required in the ways education is delivered to the 'digital natives' of today and tomorrow. Arguing that education is the engine room and strength of a nation is based on its quality education, it is crucial for a country to deliver calibrated education to prepare globally competitive citizens. The paper examines various educational reforms undertaken in some successful education systems, but it also serves a caveat that the developing countries like Indonesia or a region like ASEAN should learn from the experience of such systems. At the same time they should be aware of that an idea which works in one socio-economic setting may not be that effective in another setting as socio-political systems play their own part.

The UNESCO Regional Bureau for Education in Latin America and the Caribbean,

How to cite this paper: Dr. Asha Pandey "Sustaining Quality Education in the 21st Century"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-5, August 2021, pp.605-611, URL: www.ijtsrd.com/papers/ijtsrd43907.pdf



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OREALC/UNESCO Santiago, in collaboration with the Ministry of Education and Sport of the Republic of Argentina, organized the Regional Meeting of Ministers of Education of Latin America and the Caribbean – “E2030: Education and skills for the 21st century”. Ministers of Education and high-level representatives of the education sector of the Member States of LAC; bilateral, regional and multilateral organizations; United Nations agencies; representatives of civil society; stakeholders and UNESCO experts participated in the meeting, which was held on 24-25 January 2017 in Buenos Aires, Argentina. This was the first ministerial meeting to be organized within the framework of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), in particular SDG 4 – “Ensure inclusive and quality education for all and promote lifelong learning”. It provided a space for dialogue between ministers of education and other stakeholders to debate SDG 4 in the context of the 2030 SDG Agenda. Discussions and information sharing on various topics related to the SDG 4 targets, and on the coordination mechanisms and monitoring instruments conducive to the achievement of E2030 enabled LAC Member States to reach a common vision and understanding of E2030 in the region. This joint approach on E2030 for the region is laid down in

the Declaration of Buenos Aires, which ministers adopted at the end of the meeting.[1]

- The most important skills beyond basic literacy that students need today are the ability to consume information, think about it critically, and express their point of view effectively.
- We need whole systems to focus on these skills – not just individual teachers or departments – as the literacy needs and goals cut across all content areas, including STEM.
- When it comes to critical thinking, human interaction is required to develop sophisticated reading, writing, listening, and speaking skills and cannot be taught by machines alone.[2]

INTRODUCTION

The inevitability of lifelong learning in knowledge-oriented societies implies that school systems should have different objectives and characteristics than if education were considered to have been completed when a student leaves initial education. Yet in practice, there remains a tendency for school education to be assessed in terms of the achievements and targets that systems have set themselves, rather than their broader success in laying the foundation for lifelong learning. In the knowledge economy, memorization of facts and procedures is not enough for success. **Educated workers need a conceptual understanding of complex concepts, and the ability to work with them creatively to generate new ideas, new theories, new products, and new knowledge.** They need to be able critically to evaluate what they read, be able to express themselves clearly both verbally and in writing, and understand scientific and mathematical thinking. They need to learn integrated and usable knowledge, rather than the sets of compartmentalised and de-contextualised facts. They need to be able to take responsibility for their own continuing, life-long learning.[3]

Current and future citizens face new challenges, such as increasing complexity and uncertainty; growing individualization and social diversity; expanding economic and cultural uniformity; the degradation of the ecosystem services on which they depend and mounting vulnerability and exposure to natural and technological hazards [1]. Addressing complex challenges and current and future uncertainty are at the heart of Agenda 2030 and are therefore the focus of the 17 Sustainable Development Goals (SDG) originally conceived by the UN, with particular emphasis on SDG4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” [2]. SDGs address critical global

challenges, and to overcome them, everyone (youth and adults, men and women, citizens and professionals in all fields) requires key competences that enable them to engage constructively and responsibly with today’s world and to actively participate in the necessary transformations. The aim is to promote comprehensive Education for Sustainable Development (ESD) and Education for Global Citizenship (EGC) programs through 21st century skills, focused on providing sustainability education for future generations of professionals [3,4]. The creation of knowledge, as well as its acquisition, validation, and use, must be common to all people as part of a collective social endeavor.[4]

There has been a major shift in educational learning goals—as seen most recently by Goal 4.7 of the Sustainable Development Goals—focused on global citizenship education and education for sustainable development. The shift concerns recognition of the need for education systems to equip learners with competencies such as problem solving, collaboration, critical thinking, and communication. **The focus on these "21st century goals" is visible in education and curricular reform, and has been promoted by global discussion of changing work and societal needs. This paper describes global, regional, and national examples of this shift, and then focuses on implementation challenges.** The paper focuses most explicitly on the issue of assessment but asserts that any major reform in an educational philosophy shift must ensure alignment across the areas of curriculum, pedagogy, and assessment. The paper identifies several challenges to implementation of this educational shift. These include the need for clear understanding of the necessary skills—beyond mere identification of definition and description. This is essential if education systems are to reform curricula to integrate the new learning goals that the skills imply.[5]

A second challenge is the need for clear descriptions of what different levels of competencies in skills might look like. Although a few education systems have developed early frameworks which include increasing levels of competency, there are no generic examples that describe how some of these skills "progress." Such descriptions would enable teachers to know what to reasonably expect of a child in the early years of elementary school versus of a child in later years in terms of collaborative behavior or critical thinking. A third challenge lies in the obstacles that these first two hurdles pose to the development of assessments of 21st century skills (21CS). Without an absolutely clear understanding of a learning domain, or "construct," designing

assessment frameworks and tasks are impossible. Without an understanding of what increasing levels of competency in a skill look like, it is not possible to draft the assessment tasks that will target different levels. **Educational assessment is both ubiquitous and unpopular. Despite increasing visibility of concepts such as "assessment for learning" or "formative assessment," which describes the constructive use of assessment to inform teaching, the primary use of assessment by national education systems remains summative—for use in certification, identification of eligibility for education progress, and system accountability.** The assessment of 21CS, still in its infancy, does not lend itself easily to the modes of assessment that typically populate summative assessment approaches. The paper identifies possible assessment approaches, using examples to highlight effective strategies for assessment of the skills, while acknowledging the technical difficulties associated with "capture" of behaviors in scoring and reporting them. In order to appreciate the implications of the nature of the skills for assessment, the authenticity framework is used to evaluate the adequacy of specific assessment tools designed to measure these skills.[6] This leads into a discussion of use of learning progressions both to model the development of complex skills, and as a scoring and reporting mechanism. Both expert-driven and empirical approaches to development of learning progressions are described, making clear that these progressions are central to moving the 21CS agenda forward. A central issue in educational assessment concerns whether the same learning domain is being measured across the different populations where it may be administered. **According to the vision of the Sustainable Development Goals, this means that all assessments should be appropriately targeted for different ability levels, and also for individuals from different cultures and sub-groups.** Following a discussion of the cross-cultural issues relevant to assessment of 21CS, the paper looks at three countries—Australia, Kenya, and the Philippines—to identify how they are approaching the assessment and teaching of 21CS in their basic education sectors. The countries' varied emphases on curriculum, pedagogy, and assessment are of particular interest as a majority of countries around the world explore how to approach these challenges. These examples lead to the conclusion that learning progression models are key to ensuring alignment through the education delivery system. This requires a great deal of research both in academia and in the basic education sector before comprehensive programs are put in place, but it is a start.[7]

DISCUSSION

Good quality education is an essential tool for achieving a more sustainable world. This was emphasised at the UN World Summit in Johannesburg in 2002 where the reorientation of current education systems was outlined as key to sustainable development. Education for sustainable development (ESD) promotes the development of the knowledge, skills, understanding, values and actions required to create a sustainable world, which ensures environmental protection and conservation, promotes social equity and encourages economic sustainability. The concept of ESD developed largely from environmental education, which has sought to develop the knowledge, skills, values, attitudes and behaviours in people to care for their environment. The aim of ESD is to enable people to make decisions and carry out actions to improve our quality of life without compromising the planet. It also aims to integrate the values inherent in sustainable development into all aspects and levels of learning.[8]

There are a number of key themes in ESD and while the dominant focus is on environmental concerns, it also addresses themes such as poverty alleviation, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, human rights, gender equality, corporate responsibility, natural resource management and biological diversity. **It is generally accepted that certain characteristics are important for the successful implementation of ESD, reflecting the equal importance of both the learning process and the outcomes of the education process (adapted from 'UN Decade of Sustainable Development' UNESCO Nairobi Cluster, 2006).[9]**

ESD should:

- **Be embedded in the curriculum in an interdisciplinary and holistic manner**, allowing for a whole-institution approach to policy making.
- **Share the values and principles** that underpin sustainable development.
- **Promote critical thinking, problem solving and action**, all of which develop confidence in addressing the challenges to sustainable development.
- **Employ a variety of educational methods**, such as literature, art, drama and debate to illustrate the processes.
- **Allow learners to participate in decision-making** on the design and content of educational programmes.

- **Address** local as well as global issues, and avoid jargon-ridden language and terms.
- **Look to the future**, ensuring that the content has a long-term perspective and uses medium and long-term planning.[10]

Classroom observations are being increasingly used in LMICs to improve education quality through information about current teacher/classroom practices or measuring change in practices over time (UNESCO, 2016). Yet in order to fully understand how we can best help teachers, we need to take a step back and learn to regard teachers as learners and to ensure that the learning we want to see in our children is taking place with our teachers. Learning as an active process is rooted in the educational philosophy of social constructivism which established the belief that knowledge itself is situated within a social context; an individual's ability to learn is regarded as a series of social processes that are inextricably shaped and influenced by his or her context. Though the perspective is rooted in and remains a predominantly Western ideology, it has taken hold in many countries around the world, and constructivist beliefs for education remain widely relevant for teachers across the globe. Nevertheless, constructivist perspectives should not be assumed as ubiquitous in education. For example, in cultures where verbal exchange is not the primary means through which knowledge is conveyed, we must be mindful of how such cultural variation and nuances affect ways of learning. Differences in sociocultural practices could dictate how children (or in this case teachers) may better learn through practices such as observation, listening, or sharing responsibilities rather than verbalization or actions [11].

Social constructivism puts greater emphasis on context and also highlights the important role of culture and how knowledge derived from social processes also exist within cultures. Culture becomes a great influence into not only what patterns of social processes can emerge within a context but also how they emerge [12]. **This perspective calls us to think more carefully, not only about social processes (e.g. classroom interactions) and the knowledge that is generated through those processes, but also about how highly dependent those processes are on the cultures and context in which they reside.** For example, a study of a teacher in-service program in South Africa calls attention to how situational constraints, particularly in low-resource contexts, can heavily hinder the ways in which teachers can develop alternative practices that are more learner-centered; the authors draw a critical distinction

between the “form” (i.e. techniques such as questioning or group work) versus the “substance” (i.e. content such as engaging with learners' ideas and interests) of learner-centered teaching. Based upon this work and her own in Tanzania, Vavrus set forth the notion of a contingent constructivist pedagogy, which considers the pedagogical spectrum between formalism and constructivism and calls for the adaptation of pedagogy to the material conditions, local traditions, and the cultural politics of a context. Such considerations as the ones outlined here have large implications on how social processes could best be measured.[13]

Quality education is essential for organisations which act at both the international and local level. Education is a fundamental human right and therefore should be addressed by all individuals, public and private entities, governments, and civil society. Thus, organisations can guide their action to contribute to global education, provide training actions to their employees to increase their qualifications and support or participate in education initiatives in the local community. **Globalisation implies an increasingly international scope of work which in turn requires a better understanding of education and sustainable global challenges.** Thus, organisations can support international projects focusing on quality education and they must commit themselves to global education in different contexts that are involved. For organisations, education can be a source of innovation, facilitating access to new markets or new partnerships and strengthening their leadership. Thus, a skilled workforce is required to address these challenges. Organisations should give lifelong training opportunities to improve skills for all their employees. At the local community level, organisations can develop a social responsibility strategy to empower local communities, taking into account ethics values. This strategy could include the establishment of local partnerships to promote inclusive quality education opportunities for all, through the creation of programmes (e.g. internships, work-study programs, traineeships...) or supporting local initiatives dealing with this issue.[14]

RESULTS

As the Global Cities Education Network has demonstrated, education systems worldwide have similar goals with respect to 21st century competencies but different paths to implementation because of differences in their local contexts. Nevertheless, as the cities discussed their experiences, it was clear that there are similar underlying challenges and gaps that need to be addressed, including:

- **Mindset:** Many parents and teachers are more focused on traditional academic subject matter and university entrance than on these broader 21st century competencies. There is still a need for a greater advocacy and discussion among all stakeholders about the purposes of education in the 21st century in order to create consensus for action.
- **Teachers:** To develop 21st century competencies in young people, teachers must be exposed to opportunities to develop their own competencies. Surveys show that teachers generally approve of 21st century competencies but spend little classroom time on them. Ongoing peer learning communities that help teachers understand how these competencies support achievement and how to integrate them into their teaching are essential, in addition to the shifts in accountability and assessment noted below.
- **Assessment:** There is a huge disconnect between these new goals and what is measured. Current US accountability systems and Asian university examination systems are obstacles to the advancement of 21st century competencies. Work on new forms of assessment, including student self-assessment, is underway, but we don't yet have adequate measures for many of the 21st century competencies.
- **Innovation and research:** Since this is a newly developing area, we need to test different strategies for redesigning schools and informal learning contexts, and for better connecting the two toward the development of 21st century competencies. Data to inform program and policy improvements is a missing link.[15]

While no single city has solved all of these challenges, there is robust work in progress across all of the cities on these elements. Sharing and synthesizing this work across systems will be essential if we are to move 21st century competencies from rhetoric to reality—and close the gap between what young people will need tomorrow and what today's school systems can deliver. As depicted in the rights-based educational model, the ultimate goal is to achieve an inclusive and equitable education system that prepares all people to succeed in the 21st century. In addition to increasing globalisation, today's societies are also in the midst of transitioning from a carbon-based economy to a green economy which has huge implications for how students are educated and how societies function.

This transition has become necessary due to global warming, deforestation and desertification, among

other factors, which, in turn, have huge impacts on delicate interconnected ecosystems, food chains and overall quality of life.

In addition, new demands for food, water, sanitation and other basic living requirements, brought about by rapid growth in urbanisation and the world's population, require not only innovative technological solutions but also a new humanistic paradigm and way of thinking that address these problems on a global scale.[15]

Thus, educational institutions must implement new teaching and learning approaches, which are all inter-related and inter-dependent, to more effectively deal with these changes:

- Inquiry-based learning (problem-based and research-based learning).
- Creative learning (experiential and product-based learning).
- Meaningful learning (relevant and holistic learning).
- Humanistic learning (inclusive and equity-based learning).

Moving beyond basic literacy and numeracy

Traditionally, educational systems have mainly focused on literacy (reading and writing) and numeracy (mathematics and quantitative reasoning) as the main focus of educating students. In other words, traditionally, teaching and learning has been focused mainly on the consumption of existing knowledge and skills, which is depicted as levels one and two of Bloom's Taxonomy of Educational Objectives. Education enables upward socioeconomic mobility and is a key to escaping poverty. Over the past decade, major progress was made towards increasing access to education and school enrolment rates at all levels, particularly for girls. Nevertheless, about 260 million children were still out of school in 2018 — nearly one fifth of the global population in that age group. **And more than half of all children and adolescents worldwide are not meeting minimum proficiency standards in reading and mathematics.** [16]

In 2020, as the COVID-19 pandemic spread across the globe, a majority of countries announced the temporary closure of schools, impacting more than 91 per cent of students worldwide. By April 2020, close to 1.6 billion children and youth were out of school. And nearly 369 million children who rely on school meals needed to look to other sources for daily nutrition. Never before have so many children been out of school at the same time, disrupting learning and upending lives, especially the most vulnerable and marginalised. **The global pandemic has far-reaching consequences that may jeopardize hard**

won gains made in improving global education. In an effort to foster international collaboration and ensure that education never stops, UNESCO is mounting a response with a set of initiatives that include the global monitoring of national and localized school closures.[17]

To protect the well-being of children and ensure they have access to continued learning, UNESCO in March 2020 launched the COVID-19 Global Education Coalition, a multi-sector partnership between the UN family, civil society organizations, media and IT partners to design and deploy innovative solutions. Together they help countries tackle content and connectivity gaps, and facilitate inclusive learning opportunities for children and youth during this period of sudden and unprecedented educational disruption.

Specifically, the Global Education Coalition aims to:

- Help countries in mobilizing resources and implementing innovative and context-appropriate solutions to provide education remotely, leveraging hi-tech, low-tech and no-tech approaches;
- Seek equitable solutions and universal access;
- Ensure coordinated responses and avoid overlapping efforts;
- Facilitate the return of students to school when they reopen to avoid an upsurge in dropout rates. [18] UNICEF also scaled up its work in 145 low- and middle-income countries to support governments and education partners in developing plans for a rapid, system-wide response including alternative learning programmes and mental health support.

CONCLUSION

21st Century skills are 12 abilities that today's students need to succeed in their careers during the Information Age.

The twelve 21st Century skills are:

1. Critical thinking
2. Creativity
3. Collaboration
4. Communication
5. Information literacy
6. Media literacy
7. Technology literacy
8. Flexibility
9. Leadership
10. Initiative
11. Productivity
12. Social skills

These skills are intended to help students keep up with the lightning-pace of today's modern markets. Each skill is unique in how it helps students, but they all have one quality in common. They're essential in the age of the Internet. One of the UN's other main goals around education is to increase the population of qualified teachers, especially in the least developed countries and small island states, around the world. While many teachers receive training, it's not always in line with the best education models, or it's not tailored to teaching in fragile contexts. For our education programming, we want to focus on educating the next generation, but we also care about educating the educators. **Our work in Mother Tongue education means ensuring that teachers have bilingual training in both the national and mother tongues of their classrooms.** We've worked with teachers from Afghanistan to Zimbabwe on giving them the resources and training, especially in literacy pedagogy, to make sure success on both sides of the classroom desk. [19]

Education for sustainable development (ESD) was a United Nations program that defined as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all. **ESD aims to empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development.** ESD is the term most used internationally and by the United Nations. Agenda 21 was the first international document that identified education as an essential tool for achieving sustainable development and highlighted areas of action for education.[20]

ESD is a component of measurement in an indicator for Sustainable Development Goal 12 (SDG) for "responsible consumption and production". SDG 12 has 11 targets and Target 12.8 is "**By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.**"[21]

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