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Research Article

Holistic Education: A Catalyst for Actualizing Sustainable Development Goals in Primary School Curricula

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Abstract
Education begins the day a child is born to the time of death. Inculcating the right attitude and perception about sustaining development goals (SDGs) should start in earnest, immediately after a child is born. Primary education is crucial to achieving SDGs and serves as the bedrock that determines the sustainability of other levels of education. Holistic education at the primary level is an indispensable factor that can help implement and achieve all 17 sustainable development agenda. This paper: i) enumerates the benefits of teaching SDGs at primary level of education, ii) reveals the constraints bedeviling the actualization of SDGs at the primary level of education, iii) demystifies the integration and application of holistic pedagogy in teaching and learning of sustainability in lesson content, iv) introduces holistic strategies as effective means of teaching SDGs (1, 2, 3, 5, 6, 13, 14, 15, and 16), v) explains how and why holistic education is a lynch pin to the actualization of SDGs, vi) shows how to incorporate informal education into formal education in primary schools for sustainable development, and vii) presents language mix as a viable means to achieving SDGs. The paper concludes that to meet the 2030 SDGs agenda, primary education needs to prioritize: acquisition of sustainable development (SD) contents in classrooms; learning of SD-related skills; application of SDGs to life situations; inculcation of values and right attitudes towards SDGs; and utilization of learner-centred techniques in teaching and learning of SD topics. It was recommended that primary school teachers should expose pupils to holistic education that covers philosophical, social, environmental, economic, and emotional aspects, and pedagogical practices, rather than solely prioritizing the academic aspect for examination purposes.

Keywords: Curriculum, Education for Sustainable Development (ESD), Holistic Education, Language Mix, Primary Education, Sustainable Development Goals (SDGs)

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1. INTRODUCTION

The emergence of SDGs is a right target in the right direction because it aims to tackle various problems confronting countries of the world, especially the developing countries. Hlongwane and Chasokela (2025) explained that across the world, and Africa in particular, the planet Earth is befuddled with unprecedented pressing issues of natural disasters and climate change. These challenges pose serious threats to the health of the ecosystem and the well-being of humans and animals. Some of the problems are self-inflicted, leadership-inflicted, nature-inflicted, and system-inflicted. These problems are caused by ignorance, illiteracy, corruption, negligence, indifference, superstitions, culture, customs and traditions, and a bizarre value system, etc. These problems have led to poverty, hunger, health-related problems, illiteracy, terrorism, conflict, migration, inequality, unemployment, death, gender discrimination, economic retardation, climate change, environmental degradation, chaos, injustice, and underdevelopment. All these issues affect the way of life of the people.

The change we desire in society does not only come from corporate bodies, government, or the leaders alone; rather, it begins with every individual, including children. According to John Locke, the mind

of a child is a "tabula rasa' (the whiteboard), which implies the spirit of the newborn, with no signs or ideas at all; each step of human growth will make that board "filled" with experience and knowledge" (Dinh & Huynh, 2021, p.3159). Duschinsky (2012, p.516) noted that the mind of the newly-born is a state that "requires correct instruction in order to form representations of true moral principles." Adron (2014) reiterated the assertion of John Locke that mistakes are made in the process of raising children. He notes that the minds of children should be captured and taken care of in their due season, when "the mind has not been made obedient to rules, and pliant to reason, when at first it was most tender, most easy to be bowed" (Adron, 2014, p.75). If the mind of the child is without any ideas, then teachers have a significant role in moulding the character of the learner by teaching gradually how to confront the essentials of real life (Adron, 2014).

Irabor et al. (2019) noted that, in some quarters, education received at primary schools is targeted at the acquisition of a certificate; memorization of facts and information without proper understanding of concepts, and inability to transfer and practice concepts learnt in real-life situations. This form of learning is detrimental to curbing the world's problems. Adoption of holistic education is a veritable means of changing the narrative. Holistic education fosters the acquisition of the right knowledge, skills, attitudes, behaviour, and values necessary to correct the ills done in the past, teach acceptable practices today, and shape and maintain a sustainable future for all. Creating awareness about SDGs, breeding the right attitude towards SDGs, and teaching SDGS sustainably at the elementary stage in the four walls of the classroom have been major challenges. Education for and education about SDGs are what pupils need because through these, learners are systematically oriented to understand SDGs, and are allowed to understand the workings of education systems by engaging the hearts, minds, and actions of young folks to promote values of sustainability now and in the future. However, it is reported in the literature that young learners, in some countries, are aware of global challenges, but do not consider themselves as solution-providers. It is of the essence for pupils to know that human-concerted efforts are required to contend with the unpredictable natural challenges and socio-economic problems (Irish National Teachers' Association, 2021; Hlongwane & Chasokela, 2025).

Irish National Teachers' Association (2021) noted that large class size, overbearing workload, time pressure, and other extra paperwork are major impediments that deter teachers who have the knowledge of SDGs from getting excited about teaching lesson content on sustainability. Dealbert (2023) expressed that participants in his study did not have any professional training on Education for Sustainable Development (ESD), but the little knowledge garnered about ESD was occasioned by personal research and experience. Different studies have shown that lack of and insufficient teacher exposure to SDGs, teachers' low level of awareness and lack of knowledge of SDGs, and inability to harness the interdisciplinary approach of SDGs in classroom activities, more often than not, affect teachers' and students' understanding of SDGs (UNESCO, 2018; Evans et al., 2021).

A number of nations of the world acknowledge that introducing SDGs into the primary curriculum is pivotal, and they have begun their implementation, while some countries are still lagging behind. Reynolds (2016) explicated a number of schools that have commenced the SD agenda. It was reported that the youngest pupils in the nursery section of Torriano Primary School in London are aware of SDGs. The head teacher partnered with an external consultant to align SDGs with the current curriculum, dedicated days for staff training, and inspired the teachers to read widely about SDGs. At the school, one SDG theme is taught in each term to the entire school. In collaboration with their community, the school established a food waste café by gathering unutilized and nutritious food ingredients from the school kitchen, families, friends, and shops in the community, which they displayed at the school exhibition on climate change. Another school in India, D.A.V. Public School in Ludhiana, creatively addressed SDGs. Students in the school planned to hold Skype sessions with some schools to discuss SDGs, and also organized after-school debates on SDGs with schools in the neighborhood. The school developed a public Facebook page to sensitize the local community about SDGs, and planned to engage in the Smart Cities Challenge with other occupants of Ludhiana. Mokshein (2019) discussed and evaluated Malaysia's commitment to the integration of SDG 4 in the national policy frameworks and programmes. The study showed that the inclusion of the targets of SDG 4 in the Education Blueprints, and its integration in the national policy frameworks and programmes, are clear indications of Malaysia's commitment to the actualization of SDGs. However, the study advocates for speedy and full execution of the programmes and policies, monitoring of the implementation, and evaluation of the outcomes of the stated indicators.

St Andrews International School Sukhumvit (2023) remarked that SDGs have become a part of the school as they have begun to teach them. Students are taught not only to progress academically but also to inculcate core values such as responsibility, resilience, and respect. Yaacob and Abdullah (2023) determined primary school teachers' knowledge, attitude, and practice of environmental education for sustainable development, as well as the relationship among them at Bentong, Pahang, Malaysia. The result indicated that teachers' knowledge and attitude to SD were high, meanwhile the level of their practice was moderate. There was a significant relationship between their knowledge and attitude towards SD, but there was a weak relationship between teachers' attitude towards and the level of practice on environmental education. This implied that teachers' possession of a high level of knowledge and attitude is not an assurance that teachers would practice tasks related to environmental education. Dealbert (2023) examined how Catalan primary teachers perceived the incorporation of the SDGs into the Catalan curriculum, as well as their experiences in the course of teaching about sustainability concepts. The results showed that all the participants were aware of the different areas of SDGs, especially the environmental and social aspects, and their connections with education. The aspects that were mentioned more times were gender inequality and climate change, but they did not have sufficient knowledge of the economic area.

Ali and Khan (2021) investigated Punjab primary school teachers' subject matter knowledge of and professional experience in teaching SDGs. Assessment of the respondents in the study showed that a significant number were not aware of SDGs, and the few who had knowledge of SDGs only focused on environmental and social aspects, but sidelined the economic aspect. Afrobarometer, cited in Hlongwane and Chasokela (2025), reported that there is a low level of awareness about climate change in Zimbabwe. Just a few (45%) are familiar with the meaning of climate change, and the majority of them were of the opinion that climate change is gradually making life unbearable for citizens. A significant number posited that it is the duty of the government to alleviate the effects of climate change, while 36% averred that individuals have a part to play in the problem. Lamanauskas and Malinauskienė (2024) investigated the understanding, importance, and implementation of education for SD in schools. Findings revealed that the integration of Education for Sustainable Development (ESD) is poorly implemented in schools. Participants in the study understood the importance of ESD, but had a lopsided understanding of ESD. ESD was misconstrued for social welfare, while the physical and natural environment was poorly understood. Participants took ESD as the usual teaching and learning process, and the application of habitual teaching methods and strategies. The study revealed that implementation of ESD remains complex due to the dearth of pre-service teachers' knowledge of the concept and inadequate preparation while in school.

Ahmad et al. (2022) analysed the position of ESD in four school subjects (Urdu, General Science, Islamic Studies, and Social Studies) in the primary school curriculum of Pakistan. Findings showed that some content that represented various aspects of SD was present in the curricula, but these curricula do not map out a clear notion of SD. The study showed that primary education curricula were not tailored to match the principles of SD. Of all the SDG aspects, the most represented was the environmental aspect, followed by the social aspect, and then the economic aspect was presented as the least. Vásquez et al. (2021) carried out a content analysis of a number of primary school mathematics textbooks in Chile. The study investigated the inclusion of ideas related to sustainability, levels of SDG reflections, cognitive demand, and genuineness. Findings revealed that there was a low inclusion of ideas related to sustainability, activities in the textbooks were not presented in a way that would develop any of the SDGs, rote learning was a dominant task in the textbooks, and there was no alignment between ESD and the teaching of certain topics in the textbooks.

Beasy et al. (2024) affirmed that although ESD is included in the policy context of Australia at all levels of the education system, the process of transferring policy to practice is not only inconsistent and at variance, but also missing in schools and across the education sector. Also Australian Institute for Teaching and School Leadership (2017) confirmed that ESD is conspicuously absent in the Australian Professional Standards for Teachers, which is the arm that governs accreditation, which, invariably, could let ESD be easily overlooked and untreated by pre-service teacher training providers. UNESCO (2021) claimed that out of 100 countries involved in national curriculum frameworks, 47% did not mention climate change, while those that had a reference to climate change only had shallow inclusion of the subject matter. Also, it was reported that 95% of teachers surveyed agreed that teaching the acuteness of climate change is very important; however, fewer than 40% had confidence in teaching it, and just one-third felt they could teach

well the effects of climate change in their locality. In the survey, 40% of teachers exuded confidence in teaching the cognitive domain of climate change, just about one-fifth can teach appropriately how to take decisive action about climate change, and not up to 50% of teachers reported that their school had put up a series of plans on climate change.

Koculu and Topcu (2024) explored middle schools' SDG knowledge at the K-12 levels. The results indicated that there is poor and limited students' knowledge of the 17 SDGs. Leiva-Brondo (2021) compared the level of knowledge possessed by primary pupils and university students about the SDGs. The study revealed that students at the university level had a higher level of knowledge of SDGs, while primary students had a moderate level. Yuan et al. (2021) confirmed that Chinese senior high school students' knowledge of the SDGs and their information sources is limited. Adedeji et al. (2021) affirmed that currently in Nigeria, there is a paucity of studies on students' knowledge, awareness, and perception of SDGs. Spychalski (2023) studied the act of shaping the pro-quality attitude of Polish students. Findings revealed that the Polish educational system is not fashioned towards shaping the pro-quality attitude of high school students. This is considered risky for achieving SDGs.

It is imperative to prepare the young folks for the change we need early in life to tackle sustainability crises, promote skills, and a positive attitude to resolve social, economic, and environmental challenges. Teaching of SDGs has vital roles to play by inculcating in learners the competencies needed to proffer solutions, changing the way people consume, and ensuring that societal transformation aligns with SDGs. Teaching SD will be at its peak if pupils experience the core elements – concepts, evidence, and values – in a non-fragmented, unified way. Primary school teachers play a key part in educating young learners to engage in and adapt to habits and practices that promote sustainable living. However, their preparation in the area of ESD remains insufficient and fragmented; its overview to some teachers is unclear, with no strategy to achieve it in sight, and therefore, teachers' ability to effect transformational changes remains slow (Lamanauskas & Malinauskienė, 2024).

Different studies have been carried out on how SDGs are taught in primary schools. Kuhn, cited in Mahmood (2023), mentioned how the introduction of Experimental and Investigative Science into the National Curriculum for England and Wales has reshaped the worldview of primary school pupils and reinforced holistic education into classroom activities. Primary science lessons encompass both inquiry and experiential learning. Pupils are taught physical forces, such as knowing how humans and plants grow, pushing and pulling, and why and how objects sink, float, or balance. This approach to learning helps learners activate prior knowledge and also construct a series of intuitive theories and ideas about how the world works. Mulyasari et al. (2021) investigated school activities that support the implementation of the SDGs in 54 primary schools in Indonesia. Findings in the study showed that some activities carried out by primary schools as extracurricular have helped to promote certain SDG-related programs: life on land (33%), quality education (55%), zero hunger, and good health & well-being (6%), while the majority of the activities do not conform to SDGs. Some of the yet-to-be included programs are advocacy for the use of public means of transportation, biking or walking, the use of energy-saving gadgets, and waste avoidance. Different activities that were introduced into the school programs impressed upon the learners character values such as nationalism, cooperation, religion, integrity, and independence.

Mahmood (2023) worked on the need to revise primary and secondary education syllabuses in line with the current science and technology embedded in SDGs. The study found out that integrating current science and technology embedded in SDGs into primary and secondary education syllabuses could be a smooth-ride if the following can be done: a review of the 17 SDGs and identification of goals that are related to the curriculum; a review of the current curriculum and pinpointing areas where SDGs can be incorporated into existing lesson activities, lesson plans and assessments; development of novel content with a focus on SDGs; and creation of opportunities for pupils to engage in discussions, hands-on tasks and projects which can be applied within the classroom and in the larger community. Wals and Kieft (2010) highlighted some methodologies that can help educate individuals or collectively on SD-related capacities. The methodologies include: helping to understand complexities related to SDG; seeing association and interconnectedness between SDGs and contents discussed; engaging in communal decision-making processes; and viewing narratives through different lenses by interrogating established and conventional practices that are apparently unsustainable.

Aada (2024) explained that recalibration of teaching methodologies, school curricula, and school practices has been projected as a catalyst and formidable force for transformative change. St Andrews International School Sukhumvit (2023) noted that holistic education is encouraged in primary school classrooms because teachers perceive situations from the children's perspectives and assist them in understanding things they do. Habimana (2024) explored the importance of nurturing a child beyond just academic attainments, challenges, and implementation of holistic education in schools, and the significance of utilizing assessment methods that support holistic education. Outcomes in the study showed that teaching holistic education hinges on four educational motives: preventive approach, holistic development, self-discovery, and realistic transformation, which should constantly guide teachers whenever they plan classroom lessons or engage in a learning sequence. St Andrews International School Sukhumvit (2023) submitted that harnessing the three core constituents of holistic education, experiential learning, individualized instruction, and social-emotional development helps learners achieve their full potential and develop the whole child. Exposing them to experiential learning means that pupils are exposed to simulations, projects, field trips, and hands-on activities. Individualized instruction is the process of tailoring learning activities to meet the individual needs and interests of each learner. Social-emotional development promotes problem-solving, positive relationships, and self-awareness.

From the studies reviewed in this paper, it is observed that teaching SDGs holistically is an invaluable means of actualizing SDGs at the primary education level, yet these studies reflect limitations in their area of coverage. Some of the reviewed papers focused on primary school teachers' knowledge of and attitude to teaching SDGs, others worked on aspects of SDGs that teachers emphasize in classrooms, while some focused on environmental studies. Others who worked on holistic education merely focused on its importance, benefits, and general overview. Nonetheless, the present study seeks to introduce another novel dimension that the reviewed papers have not considered. Building on the investigation of the Irish National Teachers' Association (2021), it is posited that a serious challenge schools encounter is how to harmonize the interdisciplinary content of ESD in different school subjects in a holistic manner. Therefore, the present paper demystifies how to integrate and apply holistic pedagogy in teaching and learning of sustainability in lesson content that is related to SDGs 1, 2, 3, 5, 6, 13, 14, 15, and 16 in primary school subjects. This paper delineates related subjects where SDGs are already embedded and how they can be modified as topics. Using an interdisciplinary approach, the present study also extracted some SDG-related content taught at primary schools that cut across different school subjects and expatriated on how they can be taught in classrooms to promote pupils' knowledge and understanding of SDGs.

Furthermore, the paper discusses SDG-related skills and how they can be applied in and outside the classroom. The study reveals values to be learnt and attitudes to exude after being exposed to SDG-related content. The paper showcases relevant learner-friendly classroom strategies and activities that could foster the teaching and learning of SDGs topics. In addition, the paper discusses the advantages of teaching for sustainability at primary level of education, reveals the constraints bedeviling the actualization of SDGs at the primary level of education, introduces holistic education as an effective means of teaching SDGs (1, 2, 3, 5, 6, 13, 14, 15, and 16), explains how and why holistic education is a lynch pin to the actualization of SDGs, shows how to incorporate informal education into formal education in primary schools, and presents language mix as a viable means to achieving SDGs.

The present study makes significant contributions both theoretically and practically. The theoretical discourse targets value-based and interdisciplinary education by emphasizing the integration of cognitive, emotional, and ethical learning at the foundational level of education. Practically, the study serves as a valuable resource for policymakers, curriculum planners, and teachers by delineating specific SDG-related topics and demonstrating how they can be modified and taught through age-appropriate, learner-friendly strategies at the primary level. From a policy perspective, the study highlights the need for national education systems to prioritize the integration of SDGs within early education frameworks. In terms of curriculum design, the study identifies specific topics, values, skills, and attitudes that can be embedded across subjects, offering curriculum developers a roadmap for contextualizing global sustainability challenges in locally relevant ways. Furthermore, the paper exposes teachers to holistic pedagogy, integration of informal education practices, and strategic use of language mix to accommodate diverse learners. This paper equips teachers with the knowledge, pedagogical strategies, and cultural competencies needed to teach for sustainability. These findings can significantly enhance the quality and relevance of primary education in support of the 2030 Agenda.

1.1. What is Primary Education?

Primary education is the education given to children aged 6-12 years (Federal Republic of Nigeria, 2014). It is the education that is made compulsory for boys and girls. Using the standard of the Nigerian Universal Basic Education (UBE), the primary education is the first six years of the nine years of basic education, where primary school pupils are under the tutelage of a class teacher. The teacher, at times, may be supported by specialist teachers in specific content areas. Primary education is the bedrock of any education, which determines the sustainability of other levels of education. Hence, the reason why the international community gives precedence to the completion of primary school education. The UBE targets that at the end of nine years of continuous education in primary education, every pupil should acquire appropriate knowledge, relevant skills, and values that will make them useful citizens in order to contribute their quota to the national development. These objectives are in tandem with the focus of SDGs (Ekele & Isah, 2020).

1.2. Sustainable Development Goals

On the 25th September 2015, United Nations initiated a novel global framework called Sustainable Development Goals and projected that by 2030, if all hands are on deck, nations of the world would no longer be impoverished, safeguard their environment, live in peace, be safe, and free so that social, economic and environmental development will be sustained (UNESCO, 2017; de Villiers et al., 2021). SDGs will not only serve as ground plans for development, but will also promote, preserve, and sustain the development of the goals. All nations of the world, especially African countries, need to take the SDGs as a clarion call and take urgent, decisive actions by changing the narrative from projected SDGs to accomplished goals by 2030. Museveni (2008) defines development as a process of structural change in the economic, political, social, and cultural domains of individuals, communities, and nations. This can be realized if African countries can tailor their own goals towards the 17 SDGs of the 2030 Agenda. The SDGs are intertwined and require individual and societal awareness, knowledge, involvement, pecuniary resources, ingenuity, and technology in every clime. All the SDGs are targeted at achieving sustainable development through economic development, social improvement, and environmental protection. All the SDGs are important; however, one of the most remarkable goals is the provision of inclusive, equitable, and quality education with life-long learning (SDG 4).

1.3. Benefits of Teaching SDGs in Primary Schools

The teaching of SDGs to pupils is advantageous because it:

i. reinforces the development of core skills and competences and life-long learning.
ii. shows the interrelatedness of the SDGs and helps pupils to connect different concepts, topics, and skills needed for a 21st-century competitive labour market as embedded in school subjects.
iii. helps learning across the curriculum and engages learners in holistic learning through exploratory, creative, and innovative involvement.
iv. enables pupils to see themselves as stakeholders in matters that concern them, their immediate community, and the world at large.
v. empowers pupils to think critically and be objective to any fallacious ideas and speculations.
vi. makes pupils see that change begins with them, even at the primary level, and that they can take proactive moves to manage and handle global challenges.

1.4. Constraints Bedeviling the Actualization of Sustainable Development Goals at the Primary Level of Education

Curriculum is an educational programme that contains a list of subject matter to be learnt; a programme of activities that learners would do in order to acquire skills, knowledge, and attitude, and teachers' line of action that can help learners become useful to themselves and society. A curriculum reflects the needs of society; however, it is the responsibility of the school to translate the educational proposal into practice (Dada, 1999). Teaching and translating the 17 SDGs as educational programmes from proposal

into practice at the pre-primary level of education will make the SDGs workable, feasible, and sustainable. Observation of the researchers coupled with the past research carried out by Ateş and Eryilmaz (2011), Shizha (2014), and Nziku (2018) has shown some of the constraints bedeviling the smooth actualization of targets in schools. They are ineffective teaching methods, teachers and learners unawareness about the SDGs, ignorance and unwillingness of teachers on how to incorporate or teach the SDGs, unwholesome attitude and perception of SDGs, inability of the teachers to relate the topics to students' daily experiences, inability of the learners to transfer topics taught in classroom to life realities, and theorizing the SDGs in classroom without matching the lessons up with practice.

Other notable constraints are over reliance on foreign curricula which do not capture the realities, experiences, culture, and need of the local milieus, segregating against local experts' indigenous knowledge in schools, dominance of conventional education (which is product-oriented and treating school subjects as separate and unrelated subjects) rather than holistic education (which focuses on the process of learning and taking different school subjects as one interrelated whole), jettisoning of indigenous language and indigenous knowledge that capture African peculiarities in classrooms, and undue emphasis on written examination and rote learning rather than on project-based learning, manipulative and experimental projects. Lack of problem solving skills, teachers' perceptions, interest, attitude, and knowledge of SDGs, digital literacy skills, poor adaptability of interdisciplinary topics in school subjects, lack of pedagogical knowledge and professional training to teach SDGs, dearth of subject matter on SDGs, lack of infrastructural facilities, insufficient/lack of instructional materials, concerns about modalities of assessing SDGs, and lip service to the implementation of SGDs-related policies (Corney, 2006; Cebrián &Junyent, 2015; Alkaher & Carmi, 2019; Munkebye et al., 2020; García-González et al., 2020; Edwards et al., 2020; Kwee, 2021; Conway et al., 2021; Nakidien et al., 2021; Hamwy et al., 2023).

1.5. Teaching Sustainable Development Goals (1, 2, 3, 5, 6, 13, 14, 15, and 16) at the Primary Level across Curricula Using Holistic Education

Education is an essential tool needed for the actualization of people's potentials through its transformative power that regenerates people's minds. SDG 4 is clearly stated as a separate entity, yet education is a key factor in actualizing other SDGs because of its relatedness to other SDGs. Holistic education does not only target academic feats alone, but also aims at preparing pupils to cope with any difficulties they may encounter in life and fortify them with survival mechanisms. Holistic education encompasses all aspects of human development by going beyond a person's intellectual potential to a transformative, postmodern, ecological, cosmic, and spiritual type of education that addresses global issues (Miseliunaite, 2022). Miller, cited in Miseliunaite (2022, p.2), explains that holistic education is based on three fundamental principles: balance, inclusion, and connectedness. Holistic education seeks to:

> *balance the individual with the group, educational content with processes, knowledge with imagination, rationality with intuition, quantitative with qualitative assessment, and competition with collaboration. Inclusiveness is achieved through a combination of different knowledge construction approaches: transmission, transaction, and transformation. The teacher must find a balance between the different methods of transmitting knowledge using their experience and intuition. Connectedness is achieved through the development of relationships between: linear thinking and intuition, the mind and the body, the various fields of knowledge, the individual and the community, the earth and our soul.*

Holistic education enhances experiential learning. Experiential learning shifts the focus of learning from the passive traditional teaching methods to participatory methods of teaching, such as play-based learning, reflective learning, visualization, cooperative learning, outdoor learning, etc. Holistic education entails the use of learner-friendly and innovative teaching methods (that foster the use of indigenous and traditional knowledge systems, resilience, independence, interactive forums and spaces, open-book exams, and practical) and curricula which accommodate vocational and entrepreneurial skills, artistry, digital expertise, creative and critical thinking, which are indispensable for future prospects, employability, and sustained development. John (2017) indicated that learning to learn, learning to do, learning to live together, and learning to be learning are the four pillars of holistic learning in the 21st century.

Holistic education covers a wide range of philosophical aspects and pedagogical practices. It focuses on the completeness of the human experience. Through holistic education, pupils learn about themselves

and connect to the world; learn about life experiences and basic skills; cultivate healthy relationships; develop an ecological consciousness; imbibe positive social behaviours; embrace diversity of culture and nature; develop intellectually, creatively, socially, and emotionally, and also learn to pursue the truth at all times (John, 2017). It is important to distinguish between 'education about' the SDGs and 'education for' the SDGs. Being 'educated about' SDG topics means pupils learn about SDG topics and themes and their interconnectedness to all curriculum subjects and areas. Pupils can get involved in 'education for' SDGs when they move from learning about SDGs and thinking to taking action for sustainable development and well-being, whether at a school, local community, or global level (Oxfam, 2019). However, the bone of contention is: are primary school teachers aware of the 17 SDGs? How knowledgeable are they of the SDGs? How do they teach topics related to SDGs? Do they teach for sustainability? Do they teach to cover the syllabus or for pupils to pass their examinations? How do they assess the SDGs content? In order to create awareness of SDGs in the classroom, teachers need to have a positive attitude towards teaching and learning of SDGs in classes. A number of studies reviewed in Dealbert (2023) explained that holistic learning, through projects, fosters interdisciplinary thinking and connects different subjects. Through projects, learners engage in experiential learning, research and collaboration, skill exploration, problem-solving, and application of theoretical knowledge to real-life contexts (Sass et al., 2020). Teachers need to utilize participatory tasks, activity-based, and learner-centered teaching techniques that would help pupils change their behaviours, and take actions for sustainable development are required (Ekwueme et al., 2016).

1.6. Strategies for Actualizing SDGs at the Primary Level of Education

Teachers as well as pupils must have the knowledge and understanding of what these SDG concepts mean, execute SDG tasks and learn their applications within and outside the school premises, and must derive values and right attitudes to the SDGs. Presently in Nigeria, coincidentally, content in the primary school curricula is related to the SDGs. Although most of these SDGs are interrelated and are existing topics taught presently in primary school subjects in Nigeria, the researchers observe that primary school teachers need to ensure that they lay emphasis on the SDGs. Teachers need to elaborate on the SDG topics, relate the SDGs to students' daily experiences, strictly adhere to all the learner-centred strategies and activities that would foster the teaching-learning of sustainable development topics, and actively engage pupils by matching the lessons with practice. Pupils, on the other hand, need to transfer the SDG topics learnt in the classroom to life realities, starting from the school vicinity. These actions will make the instructional activities holistic. The existing curriculum can be modified into three parts, namely, knowledge and understanding, skills and application, and values and attitudes. The table below shows how SDG 4 can be worked on to help actualize other SDGs at the primary level, and also reveals how some content in the school curricula can be taught in relation to SDGs.

Using Osman et al. (2017)'s framework, the researchers modified a format for how to infuse SDGs into primary school curricula.

SDGs	**Knowledge and understanding of SDG contents** (*The following are the age-related and simplified SDGs that pupils should be exposed to at the primary level in schools*)	**Skills and application** (*Pupils must be exposed to the under-listed SDGs skills and be able to apply them where necessary*)	**Values and attitudes** (*Pupils should exhibit the under-listed traits, values, and attitudes after acquiring knowledge about SDGs)*	**Existing subjects in schools** (*Related subjects where SDGs are already embedded and can be modified as topics)*	**Learner-centred techniques and instructional materials** (*Classroom strategies and activities that could foster the teaching/ learning of SDGs topics)*
SDG 1 End Poverty	Using simple vocabulary with high sensitivity, the teachers can teach **SDG 1** by doing the following:	i. Differentiate between wants and necessities and state which is necessary. ii. State the consequences of	i. Create awareness of the different causes of poverty ii. Participate in school activities such as	i. Social Studies ii. English Language and Literature (comprehensio n passages	Questioning, discussion, and exploratory methods through: i. play away ii. songs

	i. ask pupils what poverty means to them. ii. introduce the topic 'poverty'. iii. explain what poverty is not. iv. explain how poverty affects pupils, school activities, and learning performance v. teach respect, empathy, compassion, and dignity to everyone living with or without poverty	hunger to kids, the family, and society. iii. Suggest how poverty can be reduced/stopped in kids.	gardening, clothing, and textiles, etc. (under the tutelage of the teacher). iii. acknowledgement of individual differences about poverty iv. Advocacy for policies that address poverty.	related to poverty) iii. Home Economics iv. Agriculture v. Cultural and Creative Arts vi. Language of the immediate environment	iii. storytelling, iv. visualization: flashcards, videos, pictures v. reading of literary piece: short novels, drama, and poems vi. hands-on learning carried out under the tutelage of invited resource persons (indigenous and trained experts)
SDG 2 End Hunger and Achieve Food Safety	To teach **SDG 2**, questions in the form of prompts can be asked, e.g. Have you been hungry before? i. Teachers can link this prompt and pupils' responses to: the definition and causes of hunger and problems of hunger (momentary and chronic hunger) and malnutrition. ii. Ask students about why food is important in their lives. iii. The need for food safety through food management and preservation iv. Teach love, care and diligence to everyone whether hungry or not. v. connection between poverty and hunger	i. Raising awareness about hunger and creating clubs advocating the eradication of hunger in the school. ii. Combining classroom learning with practical learning activities for the food drive. iii. Cultivating the habit of growing fruits and vegetables in school gardens (under the guidance of the teacher) and farming (under the guidance of their parents/guidance). iii. Stop food wastage by advocating : a) operation "Don't throw away your food" (b) food preservation through refrigeration, salting, sun-dry, smoking.	i. Willingness to find solutions to hunger and malnutrition. ii. Empathize with those experiencing hunger. ii. Instilling the belief that pupils can stop hunger by participating in food safety in their own little way. iii. Admit that all hands are not equal and so deserve help. iv. Wastefulness is a bad habit.	i. Agriculture ii. Home Economics iii. Basic Science iv. Cultural and Creative Arts v. English language and Literature vi. Language of the immediate environment vii. Social Studies	Questioning, participatory, discussion, and exploratory methods through: i. simulation, ii. videos, iii. hands-on practice, iv. reading of literary piece: short novels, drama, and poems v. hands-on activities carried out under the tutelage of invited resource persons (indigenous and trained expert)

SDG 3 Ensure Healthy Life and Well-Being	Sensitization about making the right decisions about health and well-being. A healthy life can be achieved through the teaching of: i. personal, community, and food hygiene, ii. sanitation, iii. disease and infection transmission(causes, prevention and control) iv. What constitutes a healthy and poor diet and associated risks v. Basics about legal and illegal harmful substances (smoking, drug abuse, alcohol, etc.) vi. safety and precautions (at home, on the road, recreational centres etc.) and the use of first aid. vii. issues like emotions: feelings, isolation, bullying, loneliness, unhappiness, anger, nervousness, anxiety, fear, depression, rejection should be addressed and related to healthy life and wellbeing. viii. immoderate use of ICTs and electronic devices ix. mental ill health	Bringing to use the knowledge of healthy life and wellbeing through: i. daily physical exercises, self-care techniques, good nutrition, ii. form and follow the rules and regulations of personal hygiene and etiquette before, during, and after eating, iii. interpret/illustrate road use and signs; iv. educate family members and people around them about healthy living practices v. debate issues related to children's health and sanity vi. examine pressures pupils face (peers, relatives, society, ICTs, and electronic devices) and how they will resist them. vii. observe sufficient sleep and rest vii. practice strong ties of friendship as a social being to think about the needs of others rather than self needs alone. ix. joining organized and structured activities and groups like the boys' and girls' brigade and scouts movements	i. Imbibe positive individualistic habits for health and well-being, such as hobbies and interests. ii. Create awareness and possible assistance that foster wellbeing and healthy practices about: i. personal, community, and food hygiene, ii. communicable and incommunicable diseases, iii. seasonal and tropical diseases v. critical thinking about psychological problems such as emotions, mental ill health, and the consequences of harmful behaviours vi. appreciate the merits of physical exercises, time outdoors, community participation, voluntary and service-based tasks .	i. Basic Science ii. Physical and Health Education iii Social Studies iv. English language v. Language of the immediate environment	i. Pupils' participation in activities that encourage fun, health, and development of Psychomotor skills, such as in sports, cultural activities, dance, arts, music, theatre, discussions, debates, excursions, sanitation, etc. ii. case analysis, brainstorming, group work, educational games, simulations, storytelling iii. audio and visual laboratories iv. advocacy against discrimination and stigmatization of health-related issues. v. reliable counseling centres where pupils can seek help and advice.
SDG 5 Gender Equality	Teachers should: i.succinctly teach pupils that both male and female are equal, neither is superior to the other in any way. ii. Pupils should be able to differentiate between 'rights' and	i. Avoid segregation in classroom arrangement. ii Engage all pupils in sport, gardening, and other activities. iii. Educational materials should not be gender	i. Girls and boys show respect to one another in classroom discussions and activities. ii. Sensitize friends and family about the dangers of	All school subjects	i. Project-based learning ii. Involvement of pupils in stereotyped gender-related subjects such as Mathematics, Basic Science and

	'equality', 'gender roles' (socially constructed behaviours, activities and roles assigned to males and females), and 'biological sex'. iii. Pupils should learn how gender roles can negatively affect the identity and rights of girls and boys.	sensitive and be applicable to all genders in equal measure. iv. Pupils should think critically, mention socially associated gender roles and Stereotypes (in classroom activities, occupations, sports, farming, and family) v. Examine and criticise how gender roles and stereotypes affect them and proffer solutions to them.	gender roles and Stereotypes. iii. Equal involvement of girls and boys in extracurricular activities. iv. Create awareness of socio-cultural and religious practices that affect girls' and women's rights in society. vii. Collaboration between boys and girls in classrooms and school activities. vii. developing a positive attitude to perceived stereotyped gender-related subjects.		Technology, Information Technology, Physical and Health Education, Home Economics, Agriculture iii. Involvement of pupils in stereotyped gender-related psychomotor skills, such as in sport, cultural activities, dance, arts, music, theatre, iv. Invitation of resource persons.
SDG6 Clean Water and Sanitation	Pupils should be exposed to water literacy, such as: i. use of water in household activities(bathing, washing, cleaning, drinking, cooking, everyday lifestyles and norms); agriculture(farming, fisheries, horticulture); industry; and fun and recreation. ii. sources of water (well, rain, stream, river, tap, ocean, etc.) iii. analyses of how water is perceived by friends, family, and society, and how these perceptions have affected their lifestyles and daily routines. iv. possible effects of dirty water and a dirty environment on human beings and society (poor health, diseases, and death)	i. Safe handling of drinking water, such as how to prepare water for consumption (boiling, etc.) ii. Connection between safe disposal of wastewater, human excreta, solid waste, and household sanitation and food hygiene. iii. Developing a good disposition to personal hygiene and cleanliness; washing of hands, brushing of teeth, etc. iv. Correcting superstitions and beliefs about water v. Understanding how water moves through environmental systems, interacts with other substances, and dissolves and moves certain	i. Interest in changing the pattern and lifestyle of unsustainable water usage. ii. Reasonable and sustainable water usage. iii. Appreciate personal hygiene and cleanliness (taking bath, combing of hair, taking of finger and toe nails, washing hands, brushing teeth, washing of cloths and dishes) and safe use of toilets and urinals, etc. iv. Passion for responsible and sustainable water consumption in the school and society. v. Create or join an advocacy group for clean water and sanitation.	i. Basic Science ii. English language iii. Physical and Health Education iv. Social Studies v. English language vi. Language of the immediate environment	i. brainstorming ii. documentaries, iii. videos, iv. simulations, v. discussion, vi. demonstration, vii. charts viii. pictures

	v. indiscriminate disposal of waste vi. elementary knowledge of the water cycle.	substances underground.			
SDG 13 Climate Action	i. Explanation of concepts like climate change, weather, and other related terms like gas effects. Greenhouse, emission, carbon cycles, etc. ii. Explain the physical impacts of climate change around us. iii. Discuss human beings and climate change iv. Explain human activities and climate change v. Myths and beliefs about climate change. traditional/indigenous knowledge and culture.	i. Disregarding traditional beliefs and misconceptions about climate change. ii. Illustrate climatic action and other related terms discussed. iii. Debate how human beings have contributed to climate change. iv. Examine the physical and socio-economic impacts of climate change around us (natural disasters like floods, earthquakes, extreme weather, sea-level rise, etc.). v. Creatively debate how human beings can adapt, mitigate, or avert the adverse effects of climate change.	i. Self-consciousness about the impacts of human activities and the consequences of personal actions on climate change. ii. Making the right decision to protect living things and their surroundings.	i. Basic Science ii. Social Studies iii. English language iv. Language of the immediate environment	i. Experiments, ii. Simulation, iii. Invitation of resource persons, iv. Visualizations: pictures, videos, sketches, etc.
SDG 14 Life Below Water	i. Explain the terms and roles of water, like ocean, river, stream, etc. ii. Relate that some animals have their habitats in oceans, e.g., fish, crabs, crayfish, etc. iii. Explain that disrupting the lives of these animals could cause harm to the climate, food, medicine, and energy. iv. Explain how the problems facing aquatic animals have affected local seafood and seafood sellers' livelihoods. iv. Expose them to the economic benefit of preservation of life below water (e.g.,	i. Involving deep and critical thinking about how pupils and society have contributed to the extinction of animals below water and endangered species (water pollution through the application of chemicals and by-products, drilling and mining of crude oil). ii. Application of critical thinking skills to how the pupils will protect water and life below water. iii. Consultation with local sellers of seafood to ascertain their	i. Showing commitment to respect and care for the environment and ocean life. ii. Developing positive dispositions towards ocean animals for sustainable practices and creating awareness in society.	i. Basic Science ii. English language iii. Indigenous language iv. Social Studies v. Language of the immediate environment	i. Documentaries ii. Invitation of resource persons, iii. Visualizations: pictures, videos, sketches, etc.

	recreation, job creation, etc.)	position on their treatment of animals living in water and possible solutions to the problems raised.			
SDG 15 Life on Land	i. Give an elementary explanation of biodiversity and its types (the natural world around us and the variety of all different kinds of life on earth, including terrestrial ecosystems, etc.) ii. Note the interconnectedness of biodiversity. iii. Explain the aftermath of harmful human impact on land, especially the ones peculiar to primary school pupils	i. Relate the existence and importance of terrestrial ecosystems to human survival ii. Break down how harmful human acts have negatively contributed to biodiversity loss and ecosystem degradation. iii. Analyze how an injurious act to an aspect of biodiversity could affect other aspects (e.g., deforestation leads to habitat loss, erosion, flood, mining, illegal dumping, and littering). iv. Analyse the various harmful acts perpetrated by primary school pupils at home, in the school, and in the environment	i. Debate the need why biodiversity should be conserved. ii. Reiterate their commitment to conserve biodiversity. iii. State how they will put an end to the various harmful acts perpetrated by primary school pupils at home, in the school, and in the environment	i. Basic Science ii. English language iii. Language of the immediate environment iv. Social Studies	i. Documentaries ii. Invitation of relevant resource persons, iii. Visualizations: pictures, videos, sketches, etc.
SDG 16 Peace, Justice and Strong Institutions	i. Discuss the terms peace, justice, and institutions. ii. Discuss how peace and justice can build strong institutions. iii. Identify factors that can enhance peace and justice in society. iv. Explain what happens to individuals and society that lack peace and justice. v. Discuss the concept of patriotism. vi. State the means of showing patriotism vii. Elaborate on how religious and	i. Ability to appreciate others' viewpoints; ii. Showing understanding of ethnic and religious matters irrespective of your own religious and ethnic affinity. iii. Ability to politely and respectfully disagree on matters of interest.	i. Belief in an individual's identity, culture, language, and self-worth. ii. Appreciation of teamwork and Esprit de corps. iii. Showing interest and involvement in school, society, and civic responsibilities. iv. Showing respect for religious and cultural differences. iv. Be an advocate of patriotism, fairness, and peace to local,	i. Civic Education ii. Social Studies iii. Religious Studies (Christian and Islamic Studies) iv. Cultural and Creative Arts v. English language vi. One indigenous language accepted in the community	i. Drama, ii. Songs, iii. Riddles iv. Stories, v. Visualizations: pictures, videos, sketches, etc. vi. Documentaries vii. Invitation of resource persons (lawyers, law enforcement agents, religious leaders, and traditional rulers, etc.)

	cultural tolerance can lead to peace, justice, love, and patriotism.	national, and international unity.

(Adapted from Osman et al., 2017)

A. Primary school teachers should acknowledge that all school subjects can be related to SDGs. Then:
   i. teachers can start by listing all the subjects offered in primary schools (using Nigerian subjects as an example) English language, One Nigerian language, Mathematics, Basic Science, Basic Technology, Information Technology, Physical and Health Education, Christian Religious Studies/Islamic Studies, Social Studies, Civic Education, Security Education, Home Economics, Agriculture, French language, Cultural and Creative Arts (Federal Government of Nigeria, 2014).
   ii. from all the subjects listed above, teachers could figure out all the topics in each subject that are related to the 17 SDGs in the curriculum. Teachers can broaden, emphasize, and prioritize the scope of the related topic to capture the objectives of the SDG in each subject, although this could be tasking, but the interrelationship between subject areas makes the integration of the SDGs flexible and easier.
   iii. teachers should not play down or deviate from the behavioural objectives of the lesson stated in the curriculum, but come up with synergistic strategies to link the behavioural objectives with associated SDGs.
   iv. all the SDGs could be conspicuously written on a chart and placed on the wall.
   v. students could watch films, animated videos, documentaries, and practice the stated objectives promoting the SDGs during lessons or as opportunity presents themselves.
   vi. teachers could divide the class into groups, ask them to choose the most preferred SDGs, and give practical suggestions on how the chosen goals could be achieved.
B. Sensitization about the SDGs, discussing societal systems and personal behaviours to meet SDG targets, differentiating between individual actions and society-based actions that could jeopardize the SDGs, could be discussed on the assembly ground as the focus of the day. In addition, SDGs could be incorporated into the whole school activities, such as extracurricular activities.
C. Curriculum experts could work out the modalities on how to incorporate the SDGs into the curriculum if it is not enshrined.
D. The government can organize training, seminars, and workshops for teachers.
E. A teacher could be a team leader of the SDGs project and supported by subject teachers whose subjects are directly related to the goals to teach topics related to the SDGs, and could discuss one SDG per month on the assembly ground or during extracurricular activities.
F. Proprietresses/proprietors could liaise with other schools in the community and organize a competition, debates, or discussions on themes related to the SDGs.
G. A series of meetings could be scheduled for parents, teachers, and pupils in the school on the need to sensitize the parents and community about the SDGs.
H. During Parents and Teachers' Association meetings, parents should be encouraged to cooperate with their children to be good ambassadors of the SDGs at home.
I. The community heads and members of the community should be engaged as stakeholders on the affected issues, connecting the school and the immediate local community.
J. Textbook writers, as well, could help to reiterate the SDGs in textbooks with various classroom and home activities.

1.7. Incorporating Informal Education into Formal Education in Primary Schools as a Dimension of Holistic Education

Before the advent of colonialism in Nigeria, people had an indigenous education which was transmitted from one epoch to another (Museveni, 2008). The advent of colonialism and modernity has eroded some of its features. Indigenous education, which is also known as informal education, is a pre-literate system where young people are taught skills and abilities for healthy living, hands-on learning for livelihoods, personality and moral development, governance, technology, cultural values, conflict

resolution, social justice, home science, child development, and communication skills, etc. Informal education is a life-long education given to young ones by parents, grandparents, family members, clergy, and community members as the occasion arises. Informal education has neither institutionalized syllabi nor written examinations. It is acquired through some processes such as imitation, questioning, discussion, storytelling, apprenticeship, learning by doing, observations, direct teaching, rituals and ceremonies, self-directed and initiated learning, and unconscious absorption of values and virtues (Borode & Ayeni, 2019). Informal education begins from the family to the outside community, where children acquire knowledge, skills, attitude, and values needed for everyday survival to become useful for themselves and society.

Formal education is obtained in schools from primary level to tertiary level, where learners are exposed to subjects like business, arts, technology, and science, from which they develop basic learning skills, attitude, knowledge, and academic tasks. After each stage, learners obtain awards, degrees, and certificates after all the requirements are met. However, Sharma and Raghuvanshi (2019) explain that to meet the 21st-century demand, knowledge acquired through formal education alone may not be sufficient. The idea of using cognitive domain, certificates, exams, degrees, and grades as yardsticks for academic achievement should be readdressed. To keep along with the various advancements in technology, demand of industry, education, science, and future challenges, formal learning in education is not enough to meet the required skills needed for job creation and self-reliance.

The targets of both formal and informal education are the 5ps of SDGs: people, planet, prosperity, peace, and partnership. Since pupils spend much time in school compared to other places, hence, there is a need to synchronize both types of education into the school curriculum. Sharma and Raghuvanshi (2019) list ways by which informal learning could be incorporated into formal education in schools:

i. conversation with co-learners, teachers, and community leaders for better comprehension of content by learning from different perspectives.
ii. giving assignments and exposing learners to workshops and seminars so as to develop self-learning, decision making, and critical thinking.
iii. invitation of skilled experts with indigenous knowledge from informal learning spaces, in conjunction with educated field experts, can be harnessed for knowledge exploration on hands-on tasks.
iv. team spirit, healthy competition, games, and social skills can be developed through physical-mental indoor and outdoor indigenous gamifications.
v. volunteering to work within the school and for community development by discharging voluntary tasks during events makes learners become responsible, resilient, and patriotic.
vi. pragmatics which is learning by doing, is an essential learning technique to develop skills. It erodes rote learning completely through apprenticeship and internship in practical classes. It helps learners to transfer what they have learnt to real-life experience. This closes the wide gap between the expected and the reality.
vii. many things can be learnt anytime and anywhere through e-Learning. Students can be given a task to advance technology and science at a specific time and space using different online applications.
viii. theory must be matched with practical knowledge during learning. Learners should be given the opportunity to work on simulating machines and learn manipulative skills, or, under comprehensive guidance, they may be guided to work on machines appropriate for their age and maturation.
ix. xi. simulation is one of the major learning techniques where a model can be used to teach learners how certain things are done as practice for real life. This develops students' thinking, situation handling, and practice.
x. xii. mnemonics and local content like indigenous songs, proverbs, riddles, fables, drama, storytelling, and tongue-twisting, etc., can be harnessed as techniques for disseminating SDGs.
xi. xiii. team work, such as group work, cooperative and collaborative learning, is essential.

1.8. Language Mix: A Viable Means to Teaching Sustainable Development Goals

It should be noted that all the stated tasks above can be best achieved when the medium of instruction in the primary school is carried out in a language well understood by the pupils. It is expected of a child to develop curiosity, manipulative ability, spontaneous flexibility, initiative, and manual dexterity at primary school. These skills and attitudes could be acquired through a comprehensible medium of instruction in primary schools. Fafunwa et al. (1989) expressed their distaste for the predicament of the

underdeveloped countries. They noted that the state of underdeveloped countries like Nigeria has lingered mainly because of the imposed medium of communication (English), unlike some leading countries like Europe, China, and Japan, etc., whose children go through all their levels of education and carry out their daily routine in their own language. However, in Africa, children are taught in languages that are not indigenous.

Switching and mixing, occasionally, to indigenous languages in the classroom is motivating. It can help pupils comprehend and retain scientific and technological concepts easily. It spurs the spirit of inquiry, creativity, reflective thinking, and craftsmanship in becoming functional citizens, which are the targets of holistic education (Jimola, 2019). In addition, the use of translanguaging in the classroom promotes home-school knowledge connection to have a fuller and deeper comprehension of the content. This gives the learners the sense of belonging that their home languages are a veritable means of interaction. Translanguaging exposes learners to opportunities in other languages and promotes the significance of bilingualism and multilingualism in classrooms (Marrero-Colón, 2021). Since the English language is an international and a second language used in Nigeria, this paper is not advocating its eradication, but calls for occasional use of language mix, such as code switching, code mixing, and translanguaging to teach topics or concepts that may appear strange to the local context, difficult to comprehend, or unknown to the pupils in English. Inability of pupils to comprehend, integrate, and apply what they have been taught in practical situations hinders the learning of new knowledge and makes pupils passive (Deutschmann & Klymenko, 2023).

2. CONCLUSION

This study reiterates the need to bridge the gaps among the stated 17 SDGs, obtainable practices about SDGs in schools, and the implementation practices about SDGs at the primary level of education. Acquisition of SDG contents in classrooms, transmission of SDG skills, application of SDGs to life situations, inculcating values and attitudes acquired on SDGs, and teachers' use of learner-centred techniques in teaching and learning of SDG topics are pivotal to curriculum implementation practices for sustainable development. There is a need to overhaul teaching and learning tasks to a more encompassing fundamental principles of holistic education: balance, inclusion, and connectedness, which are catalysts for actualizing sustainable development goals at the primary level of education.

3. LIMITATION AND FURTHER RESEARCH

This study has contributed to knowledge and has shown how to integrate and apply holistic pedagogy in teaching and learning of sustainability in lesson content that is related to SDGs (1, 2, 3, 5, 6, 13, 14, 15, and 16) in primary school subjects. However, the paper has limitations because it is an opinionated paper supported by studies in the literature. To broaden the scope of the research, future research could be empirical studies, descriptive, or quasi-experimental research, which could examine how holistic education is practically implemented to support SDG learning outcomes. Future studies could be cross-cultural investigations that compare different curricular models.

4. RECOMMENDATIONS

Based on the conclusion of the study, the following recommendations were made that:

i. primary school teachers should expose pupils to holistic education that covers philosophical, social, environmental, economic, and emotional aspects and pedagogical practices rather than tilting to the academic aspect alone.
ii. there is a need for comprehensive teacher training programs that prepare educators to deliver SDG content using inclusive, learner-centered methods.
iii. textbook writers should ensure that real-life phenomena are discussed in the textbooks.
iv. all the practical activities that pupils are expected to carry out after being exposed to teaching should be strictly done as stated in the curriculum.

v. educational objectives should treat difficulties pupils may encounter in life and expose them to survival mechanisms.
vi. teaching of SDGs in all school subjects should not treat school subjects as separate and unrelated subjects; rather, they should be taught as one interrelated whole.
vii. teaching of SDGs should kick start in earnest with emphasis placed on the 17 agenda. The teaching of SDGs should be simplified to fit pupils' age, class, and experience.
viii. occasional use of code switching, code mixing, and translanguaging should be encouraged to teach concepts that may appear unfamiliar in the local context of the pupils.
ix. primary school teachers should make use of learner-centred techniques and instructional materials that would foster the teaching/learning of SDGs topics.
x. government should provide the needed materials and facilities, while local communities should partner with primary schools and provide support where needed

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Research Ethics. The research did not involve primary research on human participants, human data, or animal subjects, yet it adhered strictly to fundamental publication ethics principles.

Data Availability Statement. The research, being a perspective paper, was based on existing statistics, facts, real-life examples, and published research to support the authors' arguments. However, the materials used for the study are available.

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