

Exploring Qualitative Insights on Achieving Sustainable Development Goals for Quality Education in Pakistan's Higher Education Institutions

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Received on: 25-10-2023

Accepted on: 30-11-2023

Abstract

This study explores the implementation of the United Nations' fourth Sustainable Development Goal (SDG), which centers on the quality of education within Higher Education Institutes (HEIs) for the 2030 agenda. Aligned with the guiding principles of the Higher Education Commission (HEC) of Pakistan, the research underscores the imperative of ensuring the sustainable delivery of quality education to future generations. Employing a qualitative approach, Senior Faculty Members and Experts underwent interviews using an open-ended protocol to elucidate measures taken for sustainability. Thematic analysis uncovered a readiness among Senior Faculty Members and Experts to implement SDGs at the university level, despite recognizing challenges such as resource limitations and the need for additional specialized

Keywords: Sustainable Development Goal (SDGs), Higher Education Commission (HEC) of Pakistan, Higher Education Institutions (HEIs), Education, Analysis, University

Introduction

The initiation of the Millennium Development Goals (MDGs) in 2000 marked a substantial advancement in enhancing global educational access, particularly through poverty alleviation initiatives. Despite positive efforts by nations, including developing countries like Pakistan, to achieve MDGs for overall progress, a critical issue persisted—educational quality

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remained unattended (Lee, 2019). Even as children enrolled in schools, their learning outcomes fell below the standards observed in developed nations. Many struggled with fundamental literacy and numeracy skills several years into their education, posing a significant challenge for nations, especially developing ones like Pakistan, in ensuring quality education for both teachers and students. The recognition of the need for sustainability for the well-being of future generations has become increasingly apparent. Within this context, the emergence of the concept of sustainable development is noteworthy, denoting progress that fulfills current requirements while safeguarding the capacity of succeeding generations to fulfill their own (Didham and Manu, 2013; Muhammad, S. K. P. (2023). Particularly, the linkage of the concept of sustainable development to educational excellence has been emphasized, to induce enduring transformations in the educational framework (Moyer and Hayden, 2020; Pathan, M. S. K. (2022). This investigation is centered on evaluating advancements in the execution of the Sustainable Development Goals (SDGs) agenda, placing specific emphasis on the fourth goal of the United Nations' Sustainable Development Agenda—improving the quality of education.

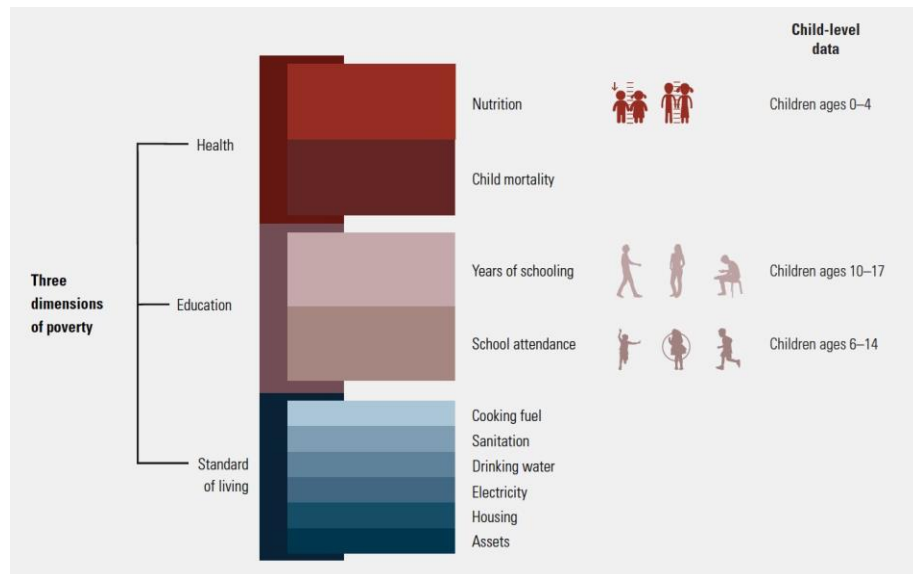
Acknowledging the pivotal role of Sustainable Development Goals (SDGs) in the country's progress, the Parliament of Pakistan officially embraced these goals as integral national objectives in the early months of 2016 (Siddiqui, 2018; Pathan, M. S. K. (2022). Spearheading the charge, the Planning Commission of Pakistan plays an active role in facilitating collaborations among the private and public sectors, as well as civil society, in a concerted effort to attain success in the implementation of SDGs. At the heart of this research lies a fundamental query: how can the enhancement of educational quality catalyze fostering sustainable growth in the context of Pakistan?

In the present day, there is a widespread focus on attaining excellence in education, with a particular emphasis on the pivotal role of educational institutions. The spotlight is on these institutions as they play a crucial part in cultivating graduates who actively contribute to the advancement of their countries in social, economic, political, and moral dimensions. In the Pakistani context, despite increased capital and investments in higher education institutions (Ali, 2018; Pathan, M. S. K. 2022), the challenge lies in ensuring quality education for all stakeholders. From 2002 onwards, the Higher Education Commission (HEC) has governed higher education through consecutive 5-year reform plans, resulting in a significant increase in student enrollment from 2010 to 2015. However, funding for higher education remains suboptimal, failing to meet international standards (Pakistan, 2017; Pathan, M. S. K. (2023). Global leaders embraced the Sustainable Development Goals (SDGs) within the framework of the 2030 agenda to institute an economy centered on knowledge, eliminate poverty, and confront inequality. This underscored the significance of ensuring an impartial education of high quality for the sake of sustainable development (Nhamo and Mjimba, 2020; Pathan, M. S. K., Khoso, A. A., & Ahmed, M. (2022)). A significant obstacle to attaining high-quality education lies in the inadequacy of adequately trained educators, feeble educational programs and methodologies, and insufficient government financial allocations. The role of investments is pivotal in the training of educators, providing professional development opportunities through workshops and seminars, and fostering overall institutional success. SDG4 emphasizes the objective of fair and excellent education (UNSDG4, 2015), promoting approaches rooted in values for sustainable development (De Leo, 2012; Muhammad, S. K. P.

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Figure 1: Health, Environment, and Nutrition in the three dimensions of the poverty

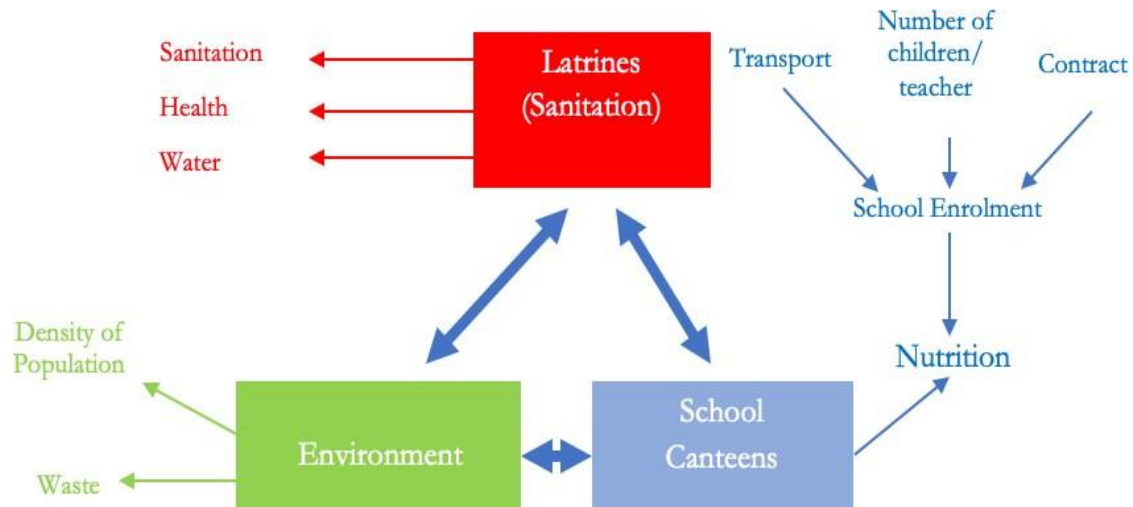


Source: Oxford Poverty and Human Development Initiative (2018)

However, addressing the education challenge goes beyond a mere examination of curricula; in numerous developing nations, the caliber of education is influenced by the prevailing social, political, religious, and economic milieu. Commuting to school poses time constraints for both students and educators. Disparities persist between urban and rural areas. In primary schools, class sizes can soar to as high as 80 children. Despite official guidelines in developing countries stipulating a maximum of 35 or 50 students per class, the actual circumstances often thwart the successful implementation of pedagogical innovations—such as critical pedagogy, mindfulness, and project-based approaches—linked to education for sustainable development.

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Figure 2: ESD, SDG, and Socio-political Context



Source: Diemer (2015)

The Sustainable Development Goals (SDGs) established for the timeframe 2015-2030 highlight the significance of learners attaining information and competencies conducive to fostering sustainable development. These encompass learning aimed at sustainable development, the observance of human rights, the promotion of gender equality, the cultivation of a culture of peace and non-violence, the fostering of global citizenship, and the appreciation of cultural diversity (SDGs, 2015-2030). Educators equipped with appropriate training are recognized as valuable contributors, with an emphasis on their proficiency in contributing to sustainable development (Peng et al., 2014; Knoepfel et al., 2005). The Government of Pakistan prioritizes SDGs, placing significance on "fair quality in education" for sustainable development (Government of Pakistan, 2018; Muhammad, S. K. P. (2023). In consonance with the United Nations resolution in September 2015, the Higher Education Commission acknowledges and underscores the pivotal role of high-quality sustainable education in empowering developing nations to compete with more advanced countries.

Research Objectives

This study aimed to investigate the fourth theme of the Sustainable Development Goals (SDGs), which emphasizes providing equitable and high-quality education to encourage continuous learning for everyone. The research focused on evaluating the current progress in implementing the SDGs agenda, specifically to ensure the delivery of quality education within higher education institutions in Pakistan. The study had two main objectives:

1. Evaluate the progress in implementing quality education objectives related to the SDGs by enhancing curricula and organizing teacher training activities. The aim was to deliver high-quality education within Pakistan's higher education institutions.
2. Identify obstacles that impede the provision of equitable and quality education in higher education institutions in Pakistan for sustainable development. This involves improving curricula and providing training based on practical application to faculty members.

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Literature Review

In the contemporary landscape, societies face a spectrum of global challenges spanning education, economics, social dynamics, and culture, each pivotal for a nation's advancement to stand shoulder-to-shoulder with developed counterparts (Rieckmann, 2012; Muhammad, S. K. P. (2023). The focal point, especially post the formulation of Sustainable Development Goals (SDGs) in September 2015 by the United Nations, revolves around the pursuit of lifelong learning through quality education to ensure sustainability. This agenda is paramount to support developing nations globally and equip them to confront future challenges, with a particular emphasis on providing high-quality education.

Acknowledging education as a foundational instrument in molding a nation's overall framework to maintain competitiveness against technologically advanced peers, Leal et al. (2022); Muhammad, S. K. P. (2023) propose the development of competencies in knowledge for sustainable development in Pakistan and neighboring Asian nations. Their research highlights the significance of superior tertiary education in generating proficient human resources crucial for attaining the goals of sustainable development through education.

Additionally, Azhar et al. (2022); Muhammad, S. K. P. (2023) underscore the importance of certain Sustainable Development Goals (SDGs), including wellbeing, economic growth, quality education, communities, and climate control. They emphasize the implementation of these priority areas as an inevitable goal for countries like Pakistan. The adoption of sustainable procurement practices, facilitated by advancements in quality education, is posited as a means to reduce health, energy, and environmental costs while introducing modern technology for the benefit of future generations.

Malik et al. (2022) posit that Higher Education Institutions (HEIs) wield significant potential in societal transformation to achieve sustainability goals. Proposing the integration of environmental education and sustainable development into higher education institution (HEI) curricula, he advocates for heightened awareness at the tertiary level. It is crucial, according to him, to establish sustainable development as a fundamental component across all HEIs operating under the Higher Education Commission (HEC). This entails promoting sustainable experiences on campuses and delivering ongoing training to educators to enrich the teaching-learning process, supplemented by enhancements in the curriculum.

Bertossi et al. (2021) contend that sustainable development in higher education is still in its early stages, aiming to secure a sustainable future for the next generation. Muhammad, S. K. P. (2023) this is deemed essential to prepare them for active leadership roles in navigating diverse realms such as the environment, economy, social structures, and cultural influence.

Throughout the past decade, substantial global investments have been directed toward fostering competencies that contribute to improved social outcomes through quality education. The fourth goal of the United Nations' Sustainable Development Goals revolves around quality education, delineating ten targets to attain sustainable development. Notably, five of these targets focus explicitly on enhancing the quality of education for individuals across various age groups, placing a substantial responsibility on higher education institutions in Pakistan to monitor and adapt to global developments in addressing emerging challenges.

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Research Design

To pursue the outlined objectives in the current research, a qualitative research design was employed, complemented by the deliberate integration of a triangulation design. The study unfolded in two distinct yet simultaneous phases, utilizing a mixed methods research design with triangulation, as recommended by Briedenhann and Wickens (2005) and Creswell (2007). In order to engage in meaningful discussions with esteemed Senior Faculty members and Experts, meticulously crafted semi-structured interviews were conducted. These interviews aimed to delve into their viewpoints on improving curricula and their ongoing strategies in delivering high-quality education within the ambit of Sustainable Development Goals (SDGs). An intricately developed interview schedule was utilized to scrutinize prevailing practices in training programs and curriculum instruction. The primary objective of these semi-structured interviews was to glean insights from Senior Faculty Members and Experts regarding the assurance that curricula and teaching methods effectively equip all learners with the knowledge and skills necessary for advancing sustainable development.

The interviews centered on comprehending the approaches utilized to propel education for sustainable development and foster sustainable lifestyles. Additionally, they explored diverse facets, encompassing human rights, the promotion of non-violence and a culture of peace, gender equality, global citizenship, acknowledgment of cultural diversity, and the influence of culture in sustainable development.

The comprehensive exploration of the alignment between curricula, teaching practices, and the overarching goal of promoting sustainable development was facilitated through extensive semi-structured interviews with Senior Faculty members and Experts. These interviews scrutinized the particulars of curricula and instructional methodologies, giving prominence to crucial components such as "education for sustainable development, sustainable lifestyles, human rights, advocacy for non-violence, culture of peace, gender equality, global citizenship, appreciation of cultural diversity, and the impact of culture on sustainable development.

Data Analysis and Key Interpretations

In the initial phase of the study, an examination of the undergraduate program curricula focused on the alignment of education quality with Sustainable Development Goals (SDGs). Employing both thematic analysis and content analysis techniques, the content analysis, specifically addressing the seventh target of quality education for SDGs, delved into the curricula of Higher Education Institutions (HEIs). This scrutiny aimed to assess the extent to which curricula ensured that learners acquired knowledge and skills essential for promoting sustainable development. Additionally, the analysis sought to uncover curricular emphases on sustainable development education, lifestyles, human rights, nonviolence promotion, peace culture, gender equality, global citizenship, appreciation of cultural diversity, and the contribution of culture to sustainable development.

Thematic analysis facilitated the identification of overarching themes, while content analysis calculated the frequency of these emerged themes. The combined use of both content and thematic analyses enhanced the study's outcomes, strengthening their reliability and validity (Braun & Clarke, 2006; Yin, 2003).

In analyzing interviews with esteemed Senior Faculty members and Experts, with a focus on the perspective of SDGs' quality education, a blend of thematic and content analysis

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techniques was applied. The initial phase involved coding the data, leading to the development of subthemes and main themes. Following Creswell's guidelines (2012), the content analysis process entailed counting these themes. Thematic analysis drew inspiration from Braun and Clarke (2006), and Yin's evidence method (2003) informed the presentation of respondents' responses. To ensure reliability and validity, an inter-rater method was implemented, involving individual analyses by researchers followed by collaborative reviews within the team.

The outcomes of the study are delineated in three segments, commencing with the examination of curricula through a thematic analysis. The subsequent sections expound on outcomes derived from the thematic and content analyses of interviews, encompassing practices, challenges, and matters pertinent to furnishing high-caliber education within the framework of SDGs. The thematic analysis of curricula discerned four principal themes integral to dispensing quality education per SDGs, as delineated in Table 1. This delineation is derived from the amalgamation of thematic and content analyses conducted on undergraduate program curricula and discussions with Senior Faculty Members and Experts.

S.No.	Areas of Analysis	Main Themes
1.	Analysis of Undergraduate Program Curricula	International Standards Deficiency: Curricula fall short of meeting international standards. Outdated Course Content: Course outlines/content is outdated. Resource Limitations: Curricula suffer from limited resources and lack variety. Technological Underutilization: Insufficient integration of technology in both content and resources.
2.	In-depth interviews with Esteemed Senior Faculty Members and Experts	Subpar Teaching Practices: Teaching practices do not meet expected standards. Curriculum Review and Evaluation: Insufficient reviews/evaluation and infrequent curricular changes. Technology Integration Deficiency: Lack of technology integration in teaching methodologies. Resource Scarcity: Inadequate resources affect the delivery of quality education.
3.	Analysis of Undergraduate Program Curricula and In-Depth Interviews with Senior Faculty Members and Experts	Insufficient Integration of Sustainable Development: Both curricula and practices exhibit a lack of emphasis on ensuring that learners acquire the knowledge and skills necessary for promoting sustainable development. Limited Emphasis on Sustainable Lifestyles and Human Rights: Both curricula and practices inadequately address sustainable lifestyles and human rights.

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		Scarce Attention to Non-Violence and Peace Culture: There is a notable absence of emphasis on the promotion of non-violence and peace culture in both syllabus and practices. Insufficient Focus on Key Themes: Both curricula and practices demonstrate a lack of sufficient emphasis on critical aspects such as gender equality, global citizenship, appreciation of cultural diversity, and the role of culture in contributing to sustainable development.
4.	Challenges in Delivering Quality Education about Sustainable Development	Inadequate Infrastructure: Lack of proper infrastructure hinders the delivery of quality education. Funding Insufficiency: The provision of funding is lacking. Unqualified/Untrained Faculty: A shortage of qualified and trained faculty members poses a challenge.

Analysis of undergraduate program curricula revealed several notable themes. Firstly, the investigation found that a substantial 61% of programs did not conform to international standards. The second theme highlighted that in 57% of programs, course outlines and content were outdated, necessitating comprehensive revisions. A pressing need for the inclusion of diverse and up-to-date resources in curricula was underscored, as 71% of programs exhibited limited and monotonous resources. Moreover, the analysis indicated a noticeable deficiency, with 79% of programs showing a lack of integration of technology in both content and resources.

Turning to the examination of teaching practices through interviews, the primary theme elucidated that teaching practices in 37% of departments were deemed subpar. Notably, only 20% of Senior Faculty Members and Experts managed to modify curricula in line with international standards, but encouragingly, 80% of Senior Faculty Members and Experts were contemplating modifications. Despite the challenges, the majority (83%) acknowledged the difficulty of such modifications without adequately trained faculty members. Furthermore, a pervasive complaint, raised by 83% of Senior Faculty Members and Experts, centered on the deficiency of foreign-qualified faculty to support their colleagues.

Another theme emerging from interviews related to the change in syllabi, specifically concerning the subject of quality education aligned with sustainable development goals. Muhammad, S. K. P. (2023) Surprisingly, only 29% of Senior Faculty Members and Experts demonstrated a clear perception of the necessary curriculum changes. However, encouragingly, 77% exhibited positive attitudes towards implementing changes in curricula to align with sustainable development goals, indicating a willingness to enhance existing teaching practices.

The third theme emphasized a dual insufficiency, exposing a shortfall in both curricula and practices regarding the emphasis on preparing learners with knowledge and skills for

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sustainable development. This lack extended across different dimensions, Muhammad, S. K. P. (2023) encompassing "environmentally conscious living, human rights, conflict resolution without violence, fostering a culture of peace, gender equity, worldwide civic responsibility, and acknowledgment of cultural variety, along with the influence of culture on sustainable development.

In addressing technology integration in teaching, the fourth theme revealed that 79% of teachers were perceived as not integrating technology effectively. This poses a significant challenge to modernizing teaching methodologies.

The issues and problems hindering quality education were explored further in interviews. The first theme unveiled that 81% of Senior Faculty Members and Experts perceived the lack of infrastructure as the main impediment to positive changes in their departments. A second prominent theme underscored the lack of funding, with 80% of respondents viewing this as a major barrier to achieving sustainable development goals. Finally, the third theme highlighted the dearth of qualified faculty members, with 43% of Senior Faculty Members and Experts identifying this as the primary challenge in providing quality education.

Despite these challenges, the study identified a positive outlook among Senior Faculty Members and Experts. An impressive 83% demonstrated a positive attitude towards contributing to the improvement of existing curricula. Additionally, Muhammad, S. K. P. (2023) 79% expressed a willingness to provide training to their faculty members, contingent upon the Higher Education Commission of Pakistan ensuring funds and human resources. This proactive approach aims to equip faculty members with modern technologies and e-learning methods, enhancing the overall attractiveness of the teaching-learning process for students.

Discussion & Conclusion:

The conclusions derived from this study are grounded in its overarching objectives, centering on how DAIs, HEIs institutions of Pakistan respond to the enhancement of tertiary education quality within the context of sustainable development goals intended for lesser developed countries. It is observed that a majority of heads of higher education institutions, Senior Faculty Members, and Experts demonstrate a positive inclination towards enhancing existing curricula across various programs under their purview. This proactive approach involves encouraging faculty members to incorporate inventive content and adopt technology in the educational process, aligning with the commitment to high-quality education for lasting development and preparing for forthcoming challenges. This stance aligns with the proposition by Gholami et al. (2020); Muhammad, S. K. P. (2023), who advocate for the pivotal role of Higher Education Institutions (HEIs) in societal transformation to achieve sustainability goals.

Notably, the study highlights that a significant portion of program contents is outdated, necessitating revisions and changes. The limited and monotonous nature of resources in the curriculum also comes to the fore. Concurrently, it is established that teaching practices within the curriculum fall short of expected standards. The heads of institutions face challenges in modifying curricula without the support of adequately trained faculty members, echoing the suggestion by Peng et al. (2014); Muhammad, S. K. P. (2023) that trained teachers contribute more effectively than less experienced counterparts.

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Moreover, the research underscores that only 29% of senior faculty members and academic experts possess a clear perception of the required curriculum changes for achieving quality education goals. However, the positive attitudes of the majority of heads towards implementing changes in curricula to align with Sustainable Development Goals (SDGs) are noteworthy.

The research also determines that a significant portion of senior faculty members and academic experts express their commitment to offering training to faculty members with the goal of enhancing their knowledge and skills to align with international standards. This proactive approach extends to meeting new and emerging requirements, particularly in equipping faculty members with online teaching skills, which holds profound implications for the entire educational landscape of the country. Acknowledging the critical role of training, Gholami et al. (2021); Muhammad, S. K. P. (2023) emphasize its essential nature for sustainable development in the realm of quality teaching and faculty affairs.

Nevertheless, the absence of adequate funding and technological resources emerges as a notable impediment to sustainability, as highlighted by the majority of department heads. This underscores the necessity for comprehensive support to guarantee the long-term success of initiatives focused on promoting quality education in line with sustainable development goals.

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