

Integrating Sustainability of English Textbook for Intermediate Classes (Grade XII) in Pakistan

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Abstract

The current study examined the representation of sustainability aspects in the English textbook for Grade XII by the Punjab Curriculum and Textbook Board, Lahore. Using Tavanti's (2010) Sustainability Framework, a qualitative content analysis facilitated by NVivo 12 software was used. According to the findings, a limited and indirect depiction of sustainability dimensions was explored. The environmental dimension needs to be addressed; the social aspect receives relatively more attention. The economic dimension is also discussed through a lesson; however, institutional, cultural, and value dimensions need to be added to the content. Generally, the analysis needs a more explicit and thorough incorporation of sustainability beliefs in the textbook. The findings emphasize the requirement for a more deliberate and complete incorporation of sustainability concepts through different dimensions, as per the global agenda regarding sustainable development.

Keywords: Sustainability, Textbook Analysis, Environmental Education, Social Dimensions.

Introduction

The pursuit of sustainable development is a rising international obligation that navigates national boundaries and infiltrates different domains of human activity. Recognizing the critical position of education in generating sustainable societies, the international society has repeatedly emphasized the infusion of sustainability principles into curricular materials and educational methods (UNESCO, 2017). Textbooks are vital educational resources that intensively transport knowledge, shape attitudes, and foster values that underpin sustainable development (Redman & Larson, 2011). Subsequently, scrutiny of textbook content using the lens of sustainability has received significant attention from scholars because it offers valuable insights into the extent to which the educational systems sync with the superior goals of sustainability.

Textbooks are a powerful form of communication that plays a significant role in molding the worldview and perspectives of learners (Pingel, 2010). However, many have argued that the knowledge found in traditional textbooks is a kind of knowledge without roots. Traditional textbooks often perpetuate outdated paradigms, particularly concerning sustainability. Subsequently, there is a growing need to explore fully the degree to which sustainability principles

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are integrated into educational materials. It is specifically critical in societies such as Pakistan, where the achievement of sustainability literacy remains a challenge.

In a developing country like Pakistan, where sustainability problems tend to be layered and knotted, the infusion of sustainability ideas into educational content becomes particularly salient. Pakistan's population is expanding at a rapid pace while the process of urbanization is galloping. The growth in both trends is putting strain on natural resources, deepening social and economic disparities, and intensifying degradation of the natural environment (Pakistan Economic Survey, 2020-21). These problems amplify the need to educate young Pakistanis about the critical importance of creating a more sustainable future and how exactly they can achieve it.

This study examines the English textbook for Intermediate Classes (Grade 12) published by the Punjab Curriculum and Textbook Board, Lahore, for the session 2018-19. This textbook was chosen because it is commonly taught throughout the schools of Punjab's most populous province. Furthermore, the English language is of utmost importance in academic and professional domains. Therefore, the study of English textbooks is important for shaping the discourse on sustainability. Applying Tavanti's sustainability framework, the present research aspires to give a holistic and multidimensional analysis of the degree of assimilation and manifestation of sustainability concepts in the selected English textbook for intermediate classes in Pakistan. The findings of the analysis may have implications for policymakers, educationists, and writers to ensure the appropriate choices of textbooks for students to teach a sustainable society.

Textbooks can be taken as the expanding glass to highlight the sustainability discussion and behave as an initiative to generate an impact on sustainable development for the next generations. By critically examining the presence, distribution, or representation of sustainability dimensions in an educational context, parents, educationists, writers, and stakeholders can look for inconsistencies, identify gaps, raise alarms, and look for more integrated and transformative approaches toward understanding, experiencing, and questioning sustainability education.

Literature Review

The attempt to incorporate sustainability principles within educational curricula and instructional materials has emerged as an area of prominent scholarly inquiry in recent years. Among educational resources, textbooks have been identified as a key tool in influencing students' perceptions, attitudes, and understanding of sustainability issues (Leal et al., 2023).

For many years, textbooks have been essential educational resources. They are considered authoritative sources of information, which in turn affect and shape the worldviews of learners for generations (Pingel, 2010; Redman & Larson, 2011). However, criticism of conventional textbook content for providing anthropocentric and obsolete models of how they refer to them and the complications and interrelations of sustainability threats have often been brought to the fore (Loh & Chib, 2019; Manni et al., 2013). The lack of sustainability principles in textbooks is a significant barrier to promoting sustainability literacy and building a culture of sustainability. Previous studies have, therefore, sought to investigate the content of textbooks from the perspective of sustainability, using various analytical frameworks and methodologies.

The framework that is popularly used for an analysis of sustainability is the Education for Sustainable Development (ESD) framework offered by UNESCO (2017). The education for sustainable development framework highlighted combining the principles of sustainability within different disciplines and educational stages. The focus is on the issues related to sustainability, like biodiversity, climate change, disaster risk reduction, water, and the oceans with sustainable lifestyle through ESD.

Education for Sustainable Development (ESD) is a great concern for many studies, leading to explore how ESD principles have been integrated into education curricula and material at different levels and disciplines. Silva et al. (2021) have reviewed the literature on the topic. This research indicated that there are numerous studies related to how integration of sustainability issues in the textbooks, but on the other hand, most of this literature pays attention just to the environmental dimensions of sustainability, which climate change and pollution issues are the main headlines in the studies related to ESD textbooks. The integration of the economic and social dimensions of sustainability in ESD textbook issues is nearly ignored by those researchers. The present research emphasizes the vital importance of the interdisciplinary approach, the interweaving of learning inside and outside the classroom, the critical thinking the students should master to solve the sustainable management of problems, the inclusive attitude, which means acknowledging the need for a cognitive-affective-behavioral approach should be furnished in ESD textbook (Lozano et al., 2013). Details of ESD textbooks should be better in connection to that speculation – textbooks for ESD are strongly required.

Studies into the illustration of sustainable development in educational materials have been conducted across different regions worldwide. Nishimura et al. (2021) examined how sustainability was represented in science textbooks used in Brazilian schools, revealing that environmental sustainability remained the dominant aspect, while the social, economic, and, most importantly, cultural dimensions of sustainability were yet to reach an average level of representation. Bandh et al. (2021) explored global climate change as a multidimensional aspect of sustainable development, while Tahtahoglu and Kulac (2019) stated that education for sustainable development is a necessary area of research in Turkey, but environmental activities related to sustainable development points are very low globally. Bromley et al. (2011) analyzed the representation of sustainability issues in social studies textbooks in the USA, finding that these issues were often explained as supplementary topics rather than as central themes within the curriculum. In contrast, Nkwetisama (2011) reported that awareness of environmental issues was raised through English language textbooks in Cameroon, although contextual evidence for explaining environmental issues in these textbooks was relatively weak.

The National Curriculum in 2006 aimed to integrate sustainability across different subjects, including the English Language (Ministry of Education, 2006). However, studies have yet to be conducted on the integration of sustainability in English language education in the Pakistani context. Khalil et al. (2023) studied the syllabus of BS English and recommended reviewing the well-established curriculum to incorporate sustainable development alongside 21st-century skills, applying a content analysis method.

The current studies were conducted with English textbooks from Grades V, VIII, IX, and X (Jamil, Anwar, et al., 2024; Jamil & Noorani, 2024; Jamil et al., 2024; Jamil et al., 2024). The studies were conducted using Tavanti's framework of sustainable development. Findings of the grade V revealed that sustainability has been viewed holistically consisting of environmental, social, economic, institutional, cultural, and values-based approaches. Environmental awareness, gender equality, social responsibility, financial literacy, national pride, cultural diversity, and values were incorporated into the textbook. The textbook was aligned with many aspects of sustainability.

Similarly, the grade VIII English textbook showed that various units promoted social, environmental, cultural, and value dimensions of sustainable development, whereas the institutional aspect needed to be added. The grade IX English textbook incorporated social, environmental, institutional, cultural, and value-based dimensions. Grade X English textbooks

were focused on just social and cultural aspects, and financial, environmental, climate change, and institutional dimensions were described less.

Comparable studies have been executed concerning sustainability in the textbooks of Pakistan Studies in the 10th and 12th grades (Jamil, Mehmood, et al., 2024; Jamil, Yousaf, et al., 2024). The 10th-grade Pakistan studies textbook was found to have partial coverage of economic, social, cultural, and value dimensions of sustainability with almost non-existent institutional and environmental dimensions. In the analysis of the grade XII textbook for Pakistan studies, the presence of social, cultural, and value-based sustainability was observed. In contrast, economic and institutional sustainability could have been more focused.

Hinduja et al. (2023) and Kalsoom and Khanam (2017) conduct systematic research on sustainability in higher education institutions and pre-service teacher education in Pakistan. They found that the curriculum could be more extensive as it raises awareness of sustainability there. Still, it more is needed to find out what are the causes and consequences of sustainability. They advise managerial development to interlinked community-engaged content, action research, and critical reflection on sustainability in teacher education programs. Malik et al. (2019) analyze the awareness of sustainability of the students in the context of technology education. They found that sustainability dimensions should have been mentioned more in the syllabus.

Several studies have been conducted on sustainability in Higher Education Institutes (HEIs) in Pakistan (Habib et al., 2021; Hinduja et al., 2023), and teacher education for sustainability has been examined (Jumani & Abbasi, 2015). The study of sustainable development goal 4 (Quality Education) adaptability in changing problems representation for inclusiveness has been completed (Khushik & Diemer, 2020) and the effect of sustainable education on teachers' attitudes about sustainable development Jumani and Abbasi (2015), and (Nousheen et al., 2020). Nevertheless, the main barriers like weak governance, uncertainty, and limited resources for sustainability in Pakistan are the important identified factors (Bukhari et al., 2022).

Hussain and Hussain (2023) commented on the alignment between the Sustainable Development Goals (SDGs) and the Single National Curriculum (SNC) after its implementation in Pakistan. The SNC 2022 has changed the integration of sustainability (Hussain & Hussain, 2023). The study shows that sustainability principles were not completely integrated into the new curriculum and were absent in some school's subjects. Most emphasis was placed on social studies and science. While the SDGs and the SNC were well enough integrated, the research suggests that for sustainability to be effectively implemented, the change must dominate every school subject.

Objectives of the Study

The following are the objectives of the study:

- To analyse the English textbook for Intermediate classes regarding the integration of sustainability dimensions through the lens of Tavanti's sustainability framework.
- To identify gaps, limitations, and opportunities for enhancing the incorporation of sustainability principles within the textbook's content.

Research Methodology

In this study, a qualitative content analysis method was used to analyse the representation of sustainability dimensions in English textbooks for Intermediate Classes (Grade 12) prescribed by the Punjab Curriculum and Textbook Board, Lahore, for the academic year 2018-19. Qualitative content analysis is to key in large text data, its main points, and patterns in a general sense (Kyngäs, 2020). This method of data analysis has been used by many researchers (Jackson et al., 2019). It

helps to identify patterns, themes, and relationships in the data while not being burdened by its volume (Zamawe, 2015). Tavanti's (2010) sustainability framework was the analytical tool used, which presents six interconnected dimensions: Environmental, social, economic, institutional, cultural, and values. Purposive sampling was employed to select the textbook under analysis. Moreover, the vital importance of the English language in academic and professional domains analysed English textbooks as an inescapable venture to inform sustainability discourse. An extensive examination and reflection on the textbook's content, which includes narratives, lessons, and supplementary materials. This examination process was facilitated using NVivo 12, a qualitative data analysis software, allowing for efficient organization, coding, and analysis of the textbook content. Throughout the coding process, we examined relevant sections, paragraphs, and stories from the textbook to assign relevant codes supported to the corresponding dimensions of sustainability. Thus, data is coded, and categorized and patterns are identified alongside (Silver & Woolf, 2018). Through this process, we were able to systematically identify and categorize content in the textbook regarding sustainability dimensions.

Findings

Keeping in view the English textbook grade X analysis for sustainability, the following findings have been drawn with different dimensions of the framework:

Environmental Dimension

The textbook does not explicitly discuss environmental sustainability. No specific lessons or content focus on the conservation of biodiversity, atmospheric balance, soil productivity, or responsible utilization of natural resources. However, there is a brief mention of environmental issues in the lesson "Hunger and Population Explosion" (pages 33-37), which discusses the impact of population growth on food availability and the environment. For example, it states, "Not only is there not enough food, but each year there are many more people to eat it" (p. 34), indirectly indicating the strain on natural resources due to population growth. This passage indirectly suggests the environmental strain caused by rapid population growth, as more people utilize limited natural resources like food. However, it does not explicitly discuss environmental sustainability, conservation, or responsible resource utilization.

Social Dimension

The textbook does not explicitly address social justice, resource allocation, poverty alleviation, or access to social services. However, some lessons touch upon social issues and the importance of education. For instance, the lesson "Why Boys Fail in College" (pages 8-12) discusses the challenges faced by students in pursuing higher education: "Nowadays, when most ambitious boys want to go to college, the financial pressure is a very serious one." (p. 9) while the lesson "First Year at Harrow" (pages 45-55) highlights the author's educational experiences. It is stated that "He [the teacher] taught it [English] as no one else has ever taught it. Not only did we learn English parsing thoroughly, but we also practiced continually English analysis." (p. 46). Additionally, the lesson "Mustafa Kamal" (pages 75-84) mentions his efforts in promoting education, particularly for women, in Turkey. For example, it is described as "Mustafa Kamal declared the old script to be abolished and replaced by the Roman script...The whole population went back to school." (p. 79). These passages indirectly relate to the social dimension of sustainability by emphasizing the importance of education and access to educational opportunities

Economic Dimension

The textbook does not directly cover economic sustainability or financial feasibility. However, the lesson "China's Way to Progress" (pages 28-32) briefly discusses China's economic progress and industrial development after its independence. It mentions factors like the establishment of factories, the banking system, and the reduction of public debt. For example, "In 1919, there were 150 factories in Turkey, in 1933, 2000, while the Turkish Five-Year Plan, inaugurated in 1934, encouraged heavy industry still further. The banking system was organized and the Ottoman public debt (taken over from the Sultanate by the new Republic) was reduced to one-tenth of its former size." (p. 79-80). This passage discusses Turkey's economic development and industrialization under Mustafa Kemal, which can be seen as related to economic sustainability, although the concept is not explicitly mentioned.

Institutional Dimension

The textbook does not explicitly address institutional capacity, willingness, cooperation, or the integration of sustainability into mainstream policy mechanisms. There is no discussion of institutional frameworks or governance structures related to sustainability.

Cultural Dimension

The textbook does not directly explore cultural values, worldviews, or the perspectives of indigenous peoples concerning sustainability. However, some lessons touch upon historical and cultural aspects of different societies, such as the lesson "The Jewel of the World" (pages 38-44), which discusses the cultural and intellectual achievements of the Muslim civilization in Spain.

Values Dimension

The textbook does not explicitly discuss values, spirituality, or their role in fostering societal, economic, and environmental sustainability. However, some lessons may indirectly touch upon moral or ethical values through their narratives or themes, such as the importance of education, hard work, and perseverance.

Discussion

The segment of the environmental dimension focuses on the preservation of biodiversity, balance of atmosphere, soil fertility, and responsible utilization of natural resources (Tavanti, 2010). This segment is the least represented in the extensive book's narratives. With only one movement where it touches upon environmental concern, the lessons on Hunger and Population Explosion (pp 33-37), the book discusses the world food supply challenged by the fast increase in population. Thus, the discussion of food availability remains shallow, and it fails to explore how population dynamics interacted with the depletion of resources and the environment. The exclusion of environmental sustainability from the textbook, which is contrary to the global breakthrough and Pakistani context, is a mistake. Pakistan is faced with a wide range of necessary environmental issues including water scarcity. Air pollution, deforestation, and biodiversity loss (Pakistani Economic Survey, 2020-21). Pakistan as a developing country bearing the brunt of climate change and large-scale environmental destruction requires that educational materials should serve to systematically allocate the knowledge, skills, values, and collective decision-making principles vital to addressing these problems and fostering a culture essential to environmental sustainability. The social dimension aspect, as its name suggests, covers social justice, fair distribution of resources, elimination of poverty, and access to social services (Tavanti, 2010). This part receives

quite a lot of attention in this book. The stories such as “Why Boys Fail in College” (pages 8-12) and “First Year at Harrow” (pages 45-47) show us how education is important and whether people gain access to it or not. Furthermore, the story “Mustafa Kamal” (pages 75-82) presents his efforts in the field of education, especially female education in Turkey. Although the statement is made of the social dimension of sustainability in these descriptions, they are limited in scope and do not explore the diverse aspects of social justice, resource distribution, or access to basic services. In a country like Pakistan, where social disparities and gender inequities persist, not to mention uneven access to education and health (Pakistan, Social, and Living Standards Measurement Survey, 2019-2020), a stronger and more nuanced representation of social sustainability in educational material is crucial. This aspect has been explored in previous recent studies for example, in the English textbook for Grade 8, environmental aspect coverage has been provided through text (Jamil, Rasool, et al., 2024); noise pollution and environmental issues are discussed in the units (Jamil, Anwar, et al., 2024). There is insufficient coverage of the environmental aspect of English and Pakistan Studies textbooks for grade X (Jamil, Mehmood, et al., 2024; Jamil, Nosheen, et al., 2024) in the Pakistani context.

The economic dimension is an element in a socially and environmentally sustainable development that includes financial feasibility (regarding the fruits of Capitalism), “Social Capital” (about the dividends of development policies), and “Natural Capital” (i.e. Resources), (Tavanti, 2010), receives a passing mention in the passage, “China’s Way to Progress,” (pages 28-32). This interpretation lightly touched on Turkey’s industrialization and economic growth under Mustafa Kemal, examining factory development, westernizing banking systems, and limiting his heavily indebted economy. As per previous studies, in the English textbook of grade 8, the text promotes harmony, tolerance, and respect in social values (Jamil, Rasool, et al., 2024). Social issues like women's rights and drug addiction are addressed in the textbook English for Grade IX to promote empathy, equality, and social responsibility (Jamil, Anwar, et al., 2024). Similarly, the English textbook for grade 10, equality, Promoting Justice, and Moral Values in Society focused on highlighting trust, honesty, and keeping promises. In another book of Pakistan Studies textbook for grade X, different aspects like healthcare and education are mentioned (Jamil, Mehmood, et al., 2024).

Despite this, the textbook does not explicitly make such connections to economic sustainability in an explicit manner that would link these economic developments with wider principles of economic sustainability, which demand a delicate equilibrium between economic growth, social welfare, and ecological integrity. In a fast-developing country like Pakistan, where economic growth and industrialization have often transpired in tandem with environmental degradation and social inequities (Pakistan Economic Survey, 2020-21), more extensive coverage of economic sustainability within learning resources is indispensable. In the previous studies for English textbooks for grades 8,9, and 10, there is no absolute emphasis on economic sustainability (Jamil, Anwar, et al., 2024; Jamil, Nosheen, et al., 2024; Jamil, Rasool, et al., 2024). Another study, on the other hand, for the Pakistan Studies textbook for grade 10, has a unit about economic development but lacks in-depth aspects of sustainability (Jamil, Mehmood, et al., 2024).

The institutional dimension in a nutshell refers to institutional capacity, willingness, cooperation, and bringing sustainability into mainstream policy mechanisms (Tavanti, 2010). In the narratives of the textbook, the institutional dimension is hardly present, and it is quite troublesome considering that institutional frameworks and governance structures are the key to supporting the transition to sustainable development (UN, 2015). In the context of Pakistan, where significant barriers to sustainable development have been acknowledged as weak institutional capacity,

corruption, and lack of policy coherence, the integration of institutional dimensions into educational materials is crucial. This integration becomes pivotal to imparting knowledge and forming an understanding of the institutional mechanisms that are indispensable for achieving sustainable development goals in a generation of learners. In the previous studies by Jamil et al. (2024), there is no address of institutional integration. In another study of an English textbook for grade 9, the textbook discovers environmental protection agencies for enforcing environmental standards that highlight the institutional dimension of sustainability (Jamil et al., 2024). In another study by Jamil, et al. (2024), the role of institutions and governance is described for justice. Textbook of Pakistan Studies grade 10, explores limited conversation on Pakistan's institutions' promotions about sustainable development in economic, social, and environmental aspects (Jamil et al., 2024).

The cultural dimension, giving thought to the importance of respect and preservation of cultural diversity, values, and worldviews, especially indigenous communities (Tavanti, 2010), lacks mostly from the textbook's content. Although a few narratives such as "The Jewel of the World" (pg. 38 - 44), touch upon historical and cultural aspects of different societies, they fail to explore explicitly the core connection between cultural wealth and sustainable development. Given Pakistan's cultural diversity - the traditional ecological knowledge of the indigenous communities has quite substantially contributed towards sustainable resource management, hence the need to integrate the cultural dimension into educational material to foster appreciation and understanding of the contributions of these communities to sustainable development. As per previous researchers, there is cultural diversity through aspects like national address, culture, language, and historical perspective (Jamil, Rasool, et al., 2024), different chapters of the book discussed national identity, cultural heritage, and shared values (Jamil, Anwar, et al., 2024). Traditional and cultural values are narrated in different units (Jamil, Nosheen, et al., 2024). In another study of Pakistan Studies textbook grade X, a unit highlights different aspects such as religious uniformity, social values, and cultural heritage (Jamil, Mehmood, et al., 2024).

The textbook's descriptions hardly address the values dimension, a key piece of sustainability. None of the narratives truly dwell on themes of moral or ethical values, although in many cases the ethical values necessarily reigning within the context of particular social institutions can be identified by a careful reader. In a country such as Pakistan, where religious and spiritual values impose a significant sway on societal norms and individual behavior, the integration of values dimension in educational resources assumes a crucial role in breeding ethical foundations required by a future generation of learners to negotiate complexities of sustainable development. Previous studies focused on spirituality, moral values, personal development, righteousness, integrity, and moral justice (Jamil, Anwar, et al., 2024; Jamil, Nosheen, et al., 2024; Jamil, Rasool, et al., 2024). In another study for the textbook of Pakistan Studies grade 10, no discussion on the spiritual and value dimensions of sustainability is presented (Jamil, Mehmood, et al., 2024).

The results of this analysis highlight the importance of a more thoughtful and thorough integration of sustainability concepts across different facets within educational resources, specifically textbooks. While the textbook in question does address some peripherally connected elements of sustainability, it fails to deliver a complete and many-sided depiction of sustainable development. To bridge these gaps and surmount the limitations that our analysis has focused on, the stakeholders active within the Pakistani educational domain should pour all their efforts into producing a more holistic and transformative textbook that addresses every aspect of sustainability pertinently. A beneficial role of a teacher is when they are translating textbook contents into meaningful learning experiences, and replenishing them with knowledge, skills, and pedagogical

strategies, which are basics in sustainability education, are essential. Moreover, the discoveries of this analysis underscore the necessity for perpetual probing and assessment to weigh up the implementation of sustainable integration among educational resources. An extensive examination of the fallout of ecological-minded textbooks on scholars' understanding, disposition, and demeanor regarding sustainable development can bestow valuable enlightenment to the constant enhancement and planning.

Conclusion

A limited and shattered representation of sustainability dimensions is found in the analysis of the English textbook for Grade XII. The environmental dimension is hardly considered, and it is just briefly mentioned in the textbook that population growth leads to a lack of food and resources. The social dimension is given more space when compared to the other two dimensions by some narratives arguing the significance of education and access to education. Talking about Turkey's industrialism and development Mustafa Kamal is brought up and therefore this part relates to the economic dimension but as a result, the concept of economic sustainability does not find any grounds to settle. The institutional, cultural, and values dimensions of sustainability are strikingly excluded in the content of the coursebook. The research findings overall highlight the importance of a deliberate and inclusive integration of sustainability principles in the Grade XII English textbook across different dimensions supporting the global educational agenda of education for sustainable development.

Recommendations

Keeping in view the findings of the study, the following recommendations are made.

- There should be a thorough evaluation and modification of the English textbook for Intermediate Classes (Grade 12) regarding missing aspects of sustainable development.
- There should be collaboration with subject experts, professionals of sustainability, and teachers to develop textbook content related to sustainable development.
- Teacher training programs and professional development opportunities should be conducted with the knowledge, skills, and pedagogical strategies for effective sustainability education.
- Interdisciplinary and cross-sectoral collaboration should be conducted among curriculum developers, policymakers, teachers, and stakeholders from different areas.

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