



## Integrating Sustainable Development Goals in Saudi Arabia's Secondary Curriculum: A Qualitative Analysis of Selected Textbooks

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### ABSTRACT

Due to the mounting pressures of social inequity, unwanted ecological changes, and unceasing economic expansion, education systems around the globe have been tasked with the responsibility of teaching youth how to recognize and possess the skills needed to tackle these problems. This research analyses how the public 3rd Grade Secondary School Curriculum of the Kingdom of Saudi Arabia for the academic year 2022-2023 reflects three of the United Nations' Sustainable Development Goals (SDGs)—Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13). Employing qualitative content and discourse analysis, the study examines the presence, frequency, and instructional framing of sustainability-related concepts in ten official textbooks. The results showed Gender Equality with most references, followed by Quality Education, while Climate Action appeared least and was concentrated in Ecology and Biology. Other Humanities subjects, such as Arabic and Life Skills, were the dominant contributors to the integration of sustainability discourses, while a number of STEM subjects addressed them only marginally. The data indicates the increasing alignment of Saudi curriculum with the global sustainability agenda and the Vision 2030 priorities, although the integration remains subject fragmented across subjects. This research sheds light on the processes of curriculum integration with sustainability and reforming education in centralized systems for better global citizenship. Additional research should focus on how classroom practices implement these commitments and how these practices impact students learning.

### KEYWORDS

Education for Sustainable Development (ESD); Sustainable Development Goals (SDGs); Curriculum Analysis; Saudi Arabia; Secondary Education.

## INTRODUCTION

In educational discussions across the globe, the need to prepare learners for complex socio-economic and environmental problems has given rise to the concept of sustainability. This is often confused with terms like climate education or environmental education, but sustainability education is much more comprehensive: it integrates ecology with complementary civic, social, cultural, and economic responsibility (Sterling & Huckle, 2016). To explain, the United Nations's 2030 Agenda and the Education for Sustainable Development (ESD) programs advocated by UNESCO are international frameworks that emphasize the importance of schools and curricula in embedding sustainability into all aspects of learning (UNESCO, 2017). In both higher and secondary education, the need to instill values and competencies for the future has made sustainability-focused teaching an indispensable part of the curriculum (Sterling et al., 2010; Sterling et al., 2013).

Curricula and textbooks play a crucial role in advancing sustainability education. They determine which knowledge is considered valuable, how social issues are framed, and which skills students should learn. Especially in contexts in which centralized curriculum systems limit teacher autonomy, textbook analysis can provide powerful insights into how societies represent knowledge and values (Apple, 2014; Pingel, 2010). Identifying the presence, frequency, and framing of sustainability-related concepts within curricula can assist researchers in identifying how education systems operationalize international sustainability commitments.

Across the Saudi public system, curriculum design and content are centralized under the Ministry of Education (Hamdan, 2015; OECD, 2020). While reform initiatives such as Tatweer aim to modernize education and introduce global competencies, scholars note that implementation often retains top-down features and remains uneven in practice (Alyami, 2014; Essa & Harvey, 2022). In addition to serving as instructional resources, textbooks serve as vehicles for transmitting national identity and policy priorities (Al-Sharif, 2023; OECD, 2020). As part of Saudi Arabia's secondary education system, students typically attend secondary school for three years, with grade three being the final year, leading to a high school diploma (Tawjihyah) (Saudi Arabian Cultural Mission [SACM], n.d.). At this stage, official textbooks are especially significant, consolidating students' preparations for national examinations while simultaneously conveying broader ideological and developmental agendas aligned with Vision 2030 (Essa & Harvey, 2022).

Although global interest in sustainability education is well-established, empirical research in the Saudi context remains limited. For instance, Al-Jeddani (2018) investigated the integration of sustainable development themes within high school social studies and citizenship curricula, while Al-Sharif (2023) analyzed the representation of sustainability dimensions in intermediate science textbooks, revealing significant omissions and underrepresentation. Essa and Harvey (2022) examined Saudi policy documents and media discourse, highlighting the rhetorical yet vague treatment of sustainability under Vision 2030. Collectively, these studies demonstrate an emerging body of work, but also leave important gaps: most focus on single

subjects or intermediate levels, pay limited attention to discursive framing, and rarely examine how textbook representations align with broader policy objectives.

To address this gap, the current study examines the representation of three Sustainable Development Goals, namely (Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13)) in the public educational system of Saudi Arabia for the 2022-2023 academic year across 10 subjects for 3<sup>rd</sup> year secondary school students. It analyzes the presence or absence, frequency, and discursive framing of sustainability-related themes in official coursebooks and evaluates their alignment with the priorities of Vision 2030 and Ministry of Education policy documents.

### LITERATURE REVIEW

Education for Sustainable Development (ESD) has grown internationally as a paradigm that equips learners with the requisite skills for the complex challenges of the 21st century environment, society, and economy. A report published by UNESCO, *Education for Sustainable Development Goals: Learning Objectives* (2017), points out that ESD involves much more than the acquisition of knowledge; it also includes the acquisition of core skills, such as critical and reflective thinking, problem solving, collaboration, and systems thinking. Scholars suggest that ESD should not be treated as an individual subject but should be woven through the curricula, working in tandem with the mechanisms of how students learn and interact with world problems (Sterling & Huckle, 2016; Sterling et al., 2013). This integrated model maintains that education is a tool that fosters long-term global sustainability and wellbeing.

Despite strong international momentum, a notable gap remains between sustainability policy rhetoric and curricular practice. Moore et al. (2018) show that sustainability is frequently framed in broad, aspirational terms within national policies but is rarely translated into concrete curriculum design and pedagogy. Similarly, Ng (2019) highlights that, while sustainability has been incorporated into many national and institutional education policies, integration often remains superficial, with limited curricular depth or pedagogical transformation. A recent systematic review by Ramírez-Montoya et al. (2025) similarly found that although sustainability and the SDGs are increasingly discussed within emerging educational paradigms such as Education 5.0, their integration into structured curricula remains uneven and often technologically driven rather than pedagogically transformative.

Hess and Maki (2019) caution that climate education is at risk of being marginalized as a secondary theme rather than being integrated into the core of teaching and learning. These limitations are especially visible in education systems with centralized governance structures, where top-down control dictates curricular content, and teachers are required to follow prescribed textbooks with little autonomy (OECD, 2020). Thus, textbooks become not only instructional tools but also political texts, reflecting state-approved visions of society, identity, and knowledge. Comparable patterns have been observed in other centralized systems. For example, Silalahi and Yuwono (2018) show how Indonesia's national ideology, Pancasila, is

formally embedded in curricular reform yet struggles to translate into deep pedagogical transformation, underscoring the broader tension between ideological intent and classroom implementation.

Comparative and regional studies have reinforced this challenge (Molomo, 2023; Odularu, 2024; Olatoye & Fru, 2025; Sibanda, 2023). Chimbunde and Moreeng (2024) argue that meaningful teacher agency is essential for sustainable curriculum reform because reforms imposed in a top-down manner are unlikely to produce pedagogical transformation. This resonates with Ng's (2019) observation that policy-level commitments to sustainability, if not connected to classroom practice, risk becoming symbolic rather than substantive. Collectively, these findings underscore the value of textbook analysis in centralized systems where official curricular materials remain the clearest expression of national policy priorities.

Saudi Arabia provides a particularly relevant case study. Education reform has been a central pillar of the national Vision 2030 agenda, which explicitly links modernization and global competitiveness with sustainable development. However, like many centralized systems, the Saudi context reflects a tension between ambitious reform goals and the realities of standardized ministry-controlled curricula. Hamdan (2015) observes that initiatives such as the Tatweer program introduced student-centered principles and innovation but did not significantly expand teacher autonomy or curricular flexibility. Similarly, Alyami (2014) notes that, while Tatweer schools were envisioned as laboratories of development, implementation remained largely shaped by top-down control. The OECD (2020) reinforces this view, finding that Saudi curriculum reform has made progress in aligning with global competencies but continues to rely on highly standardized textbooks as primary instructional tools.

Recent empirical studies offer insights into how sustainability themes appear in Saudi curricula. Al-Jeddani (2018) examined the integration of sustainable development in high school social studies and citizenship education, that while themes were introduced, they were unevenly represented and lacked depth. In their analysis of policy documents and media discourse, Essa and Harvey (2022) reported that sustainability is often framed in vague terms, raising questions about its translation into practice. In a content analysis of third-intermediate science textbooks, Al-Sharif (2023) found that environmental and economic sustainability dimensions were underrepresented, highlighting the limited integration of ESD principles. Finally, in a study of gender representation in English language textbooks, Alqahtani (2024) revealed that while Vision 2030 emphasizes gender equity, textbook portrayals of women remain restricted and stereotypical. The persistence of gender stereotyping in educational materials is further illuminated by Omojemite et al. (2024), who, drawing on feminist and critical theory, argue that curricula often reproduce social norms and power structures unless explicitly challenged through interdisciplinary and justice-oriented approaches. Together, these studies highlight the progress in acknowledging sustainability but also reveal gaps in how such themes are embedded and framed in the Saudi curriculum.

Building on this body of work, this study situates itself within the broader literature by addressing a critical gap: the lack of systematic, cross-subject analysis of sustainability-related themes in final-year secondary education textbooks. Since grade three of secondary school is the last stage before higher education and vocational training (Saudi Arabian Cultural Mission [SACM], n.d.), it represents a crucial moment when national policy priorities, including Vision 2030, are consolidated in curricular content. Therefore, textbooks at this stage provide a vital lens for assessing how global sustainability goals, particularly Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13), are represented, emphasized, or marginalized.

### **CONCEPTUAL FRAMEWORK AND METHODOLOGICAL RATIONALE**

This study is guided by a conceptual framework combining Curriculum Theory, Policy Implementation perspectives, and ESD benchmarks. Apple (2014) argues that curricula and textbooks are never neutral; they embody official knowledge and transmit the ideologies and values of the state. Pingel (2010) extends this argument by noting that textbooks serve as powerful instruments of socialization and political messaging, particularly in centralized systems. These insights position textbooks as both pedagogical and ideological texts, making their analysis essential to understand how sustainability is represented in practice.

From a policy implementation perspective, there is often a gap between intended curriculum (as expressed in official policy documents) and enacted curriculum (what teachers deliver in classrooms). In centralized systems, such as Saudi Arabia, where teachers are expected to follow standardized textbooks with limited room for adaptation, the textbook itself becomes the most direct expression of the intended policy. This framework is particularly relevant in the context of Vision 2030, where ambitious reform goals risk remaining rhetorical, if not concretely, embedded in curricular materials (OECD, 2020; Essa & Harvey, 2022).

Finally, this study aligns with UNESCO's (2017) framework for ESD learning objectives, which provides international benchmarks for sustainability competencies and curricular integration. Document-based approaches, such as content and discourse analysis, are well established in curriculum studies (Pingel, 2010) and are particularly suited to centralized systems where textbooks are the primary instructional tools. By examining the visibility, frequency, and framing of sustainability-related themes across ten subjects, this study assesses how national and global sustainability priorities are embedded in Saudi secondary education, thereby filling a gap in the literature.

#### **Statement of the Problem and Objectives**

Despite the growing international momentum toward embedding sustainable development into education systems, the actual integration of sustainability principles into school curricula remains limited, inconsistent, or under-researched, especially in centralized educational systems. In Saudi Arabia, Vision 2030 outlines national ambitions aligned with the United Nations Sustainable Development Goals (SDGs), including Quality Education (SDG 4), Gender

Equality (SDG 5), and Climate Action (SDG 13). However, little is known about how these goals are translated into the textbook content used in Saudi public schools.

Saudi Arabia's education system is highly centralized, with textbooks playing a dominant role in shaping classroom teaching. Teachers have minimal flexibility to deviate from the prescribed content, making textbooks a powerful tool for understanding how sustainability themes are positioned in national education. While curriculum initiatives, such as the Tatweer Project aimed to modernize education, research indicates that these reforms have not significantly expanded classroom autonomy or produced sustained pedagogical transformation (Hamdan, 2015; Alyami, 2014). Although international and local studies have examined aspects of ESD integration (Al-Jeddani, 2018; Al-Sharif, 2023; Essa & Harvey, 2022; Ng, 2019; UNESCO, 2017), few have provided a systematic, cross-subject analysis of final-year secondary textbooks in Saudi Arabia. This gap raises critical questions about the degree to which Saudi Arabia's stated policy goals are being realized in practice through its formal curriculum.

Therefore, this study aims to investigate the extent and manner in which sustainability-related themes are embedded in third-grade secondary coursebooks across selected subjects in Saudi public schools. Through content and discourse analyses, this study explores whether the curriculum reflects the country's educational policy goals and Vision 2030 priorities related to sustainable development. This study primarily seeks to:

- Examine the inclusion and representation of SDG 4 (Quality Education), SDG 5 (Gender Equality), and SDG 13 (Climate Action) in selected third-grade secondary school textbooks.
- Analyze the discursive framing of these themes across different subjects to identify patterns, emphasis, or marginalization.
- Evaluate the alignment between textbook content and national education policy, including Saudi Vision 2030 and official Ministry of Education documents.
- Contribute to the discourse on curriculum reform and sustainability education in centralized education systems by offering context-specific insights.

In line with the problem identified problems and the objectives outlined above, the present study seeks to answer the following research questions:

1. To what extent are the Sustainable Development Goals (SDGs)—specifically Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13)—represented in the third-grade secondary Textbooks in Saudi Arabian public schools for the academic year 2022–2023?
2. How are these sustainability-related themes discursively framed within the selected textbooks, and what pedagogical intentions (if any) can be inferred from their presentation?
3. To what degree do the findings align with or diverge from the goals of Saudi Arabia's Vision 2030 and official educational policy documents?

## METHODOLOGY

### Research Design

Owing to funding limitations and strict regulatory constraints on collecting empirical classroom data in Saudi Arabia, this study adopted a qualitative document-based research design. Specifically, it employed content and discourse analysis to conceptually examine how selected Sustainable Development Goals (SDGs), namely Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13), are represented in the national curriculum of Saudi Arabian public schools for the academic year 2022–2023.

This approach is well-suited to the Saudi context, where textbooks are standardized nationwide and constitute the dominant instructional resource in classrooms. As Apple (2014) and Pingel (2010) argue, curricula and textbooks are not neutral, but reflect official knowledge and state priorities, making them valuable sources for analyzing how global and national goals are framed. Similarly, document-based methods are widely recognized as effective in education research when direct classroom observation is impractical or restricted, as they provide insights into the institutional and ideological underpinnings of curricula (Bowen, 2009; Krippendorff, 2019).

This study is exploratory in nature. Rather than attempting to explain why specific topics are included or excluded, the goal concerns investigating the scale, scope, and nature of sustainability-related content across a sample of textbooks used in third-grade secondary education. The overarching research question guiding this inquiry is: To what extent do Saudi public school textbooks feature, frame, or omit themes related to SDGs 4, 5, and 13?

### Data Sources and Selection

The primary sources of this study were textbooks and curriculum documents officially published by the Saudi Ministry of Education (MOE). In Saudi Arabia, the MOE is the sole authority producing and approving textbooks, which are standardized and used uniformly across all public schools. Private publishers are not involved in textbook production, and the authorship process typically involves MOE-appointed committees composed of academics, subject experts, and senior educators. The textbook content is strictly regulated to ensure alignment with the state's educational priorities and policy frameworks.

At the secondary level, each course has a single official textbook, and in some cases, an accompanying teacher guide. Teachers are expected to closely adhere to these materials, leaving little room for supplementation or substitution. This makes textbooks an especially powerful and reliable lens for examining how national policy goals such as Vision 2030 are embedded in the curriculum.

The sample consisted of ten textbooks taught in the third grade of secondary education (final year of high school). These were *Arabic Language 4: Linguistic Competencies*, *Biology 3*, *Environmental Science*, *Life Skills and Family Education*, *Physics 4*, *Mathematics 6*, *Chemistry 4*, and three core Islamic Education subjects (*Fiqh 1*, *Hadith 1*, and *Tawheed 1*). These subjects were selected because they represent a cross-section of disciplines in which sustainability-

related content could reasonably appear, either explicitly (e.g., in *Environmental Science* or *Life Skills*) or implicitly (e.g., in *Islamic Education* or *Arabic Language*). The exclusion criteria included electives and specialized vocational courses, which are not universally taught at the secondary level.

The textbooks were accessed in both printed and PDF formats through MOE online repositories and school libraries. Digital copies were particularly useful for keyword searches, systematic coding, and validation. To ensure transparency, a full list of the analyzed textbooks is provided below in the APA format (English translations of the titles are provided in brackets for clarity). These are not included in the study's reference list but are presented here to clearly identify the data sources.

Ministry of Education. (2022/1444 AH). *اللغة العربية 4: الكفايات اللغوية* [Arabic Language 4: Linguistic Competencies]. Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *أحياء 3* [Biology 3] (Natural Sciences Track). Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *علم البيئة* [Environmental Science]. Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *كيمياء ٤ – مسار العلوم* [Chemistry 4 (Natural Sciences Track)] [الطبيعية]. Saudi Arabia: Ministry of Education.

Ministry of Education. (2022/1444 AH). *رياضيات 6* [Mathematics 6] (Natural Sciences Track). Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *فيزياء 4* [Physics 4] (Natural Sciences Track). Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *المهارات الحياتية والتربية الأسرية* [Life Skills and Family Education]. Riyadh: Ministry of Education.

Ministry of Education. (2022/1444 AH). *فقه ١* (Islamic Jurisprudence) [الفقه ١]. Saudi Arabia: Ministry of Education.

Ministry of Education. (2022/1444 AH). *الحديث ١* (Prophetic Traditions) [الحديث ١]. Saudi Arabia: Ministry of Education.

Ministry of Education. (2022/1444 AH). *التوحيد ١* (Islamic Creed / Monotheism) [التوحيد ١]. Saudi Arabia: Ministry of Education.

Additionally, the general structure of the textbooks was noted during analysis. Most are organized into thematic units or chapters with a combination of expository passages, guided exercises, and end-of-unit review questions. Visual content is frequently integrated through diagrams, photographs, and illustrations; however, as explained in Section 4.3, this study focused on textual analysis. For illustrative purposes, Appendix A includes sample textbook pages (e.g., from Arabic and Life Skills) to provide readers with an overview of the materials examined.

## Analytical Procedure

This study followed a systematic, multiphase process to analyze the textual content of the selected textbooks. First, the researchers reviewed all coursebooks and policy documents to familiarize themselves with their structure and identify potential sustainability-related themes. Subsequently, a comprehensive list of keywords was developed based on United Nations ESD publications and SDG literature, translated into Arabic, and carefully checked for semantic accuracy. Using this list, both manual and digital searches were conducted across textbooks, and each keyword occurrence was documented, along with page numbers and notes on its instructional function. The relevant excerpts were subsequently translated into English and coded according to their thematic and pedagogical relevance. To ensure reliability, the coding process was independently cross-checked by two researchers, with any discrepancies resolved through collaborative discussion. Further validation was obtained through consultation with a curriculum expert.

It is important to note a limitation: while visual elements (e.g., images, diagrams, and illustrations) are central to how knowledge is conveyed in textbooks, this study focuses exclusively on textual content. This decision was made because of scope and resource constraints. We acknowledge that a combined analysis of text and images would have yielded a more nuanced understanding of how sustainability is represented. Future research should expand this methodology to incorporate multimodal analyses of both textual and visual content. To operationalize the analysis, a set of keywords and phrases was developed for each of the three focus SDGs, drawing on the UN ESD literature and national policy documents. Table 1 presents the final list of terms (translated from Arabic) that guided data extraction and coding.

**Table 1.**

*Keywords and Expressions Used to Identify Sustainability Themes (Translated from Arabic)*

<b>SDG Theme Keywords and Phrases</b>	
<b>Quality Education</b>	Education, learning, knowledge, educational process, learning technology, students, high school, curriculum, policymakers, Saudi Vision 2030, sustainable development, e-learning, learning methodologies, pedagogy, learning strategies, learning skills, learning outcomes, Ministry of Education, 21st-century skills, teaching, schooling, life skills, class environment, learning applications, future learning, learning approaches, content, social media, training.
<b>Gender Equality</b>	Justice, genderism, inequality, dissimilarity, males, females, women and men, bias, equal opportunities, social justice, human rights, United Nations, discrimination, non-discrimination, equitability, civil rights, tolerance, coexistence, generation, humanity, human beings, equal opportunity.
<b>Climate Action</b>	Weather, sustainable development, global heating, environment destruction, pollution crisis, temperature, carbon sequestration, emissions, renewable energy, non-renewable energy resources, desertification, drought, sea level rise, floods, green planet, safe planet, healthy life, clean energy.

### **Analytical Framework**

This study employed an integrated framework that combines content analysis (Krippendorff, 2019) to identify the presence and frequency of sustainability-related themes with discourse analysis to examine how these themes are framed within curricular narratives (Apple, 2014; Pingel, 2010). While primarily inductive, the analysis was deductively guided by international ESD frameworks (UNESCO, 2017) and Saudi policy priorities under Vision 2030.

To confirm the rigor of the study, the following measures were taken. First, researcher bias was very high in the front and center. The main researcher is involved in curriculum and policy studies in the context of Saudi Arabia, and thus has both a cultural and linguistic background that is both advantageous and a potential source of bias. This was somewhat mitigated by collaboratively analyzing the coding decisions alongside international standards (UNESCO, 2017). Next, to address validity and reliability, several steps were taken, including: (a) redundancy in the coding to enhance rigor by having two independent researchers analyze the data; (b) peer debriefs with a curriculum consultant external to the study; (c) triangulation where the textbook was correlated with policy and Vision 2030 documents; and (d) a transparent audit trail of the coding to capture, check, and balance the process. Collectively, these steps enhance the credibility and trust of the outcomes. The analysis was based on the outcomes of the three primary dimensions. First, it identifies the extent of different subjects at different levels where concepts of sustainability are integrated and discussed. Second, it evaluates the levels of pedagogy used and how learners were encouraged to engage with the concepts of sustainability from lower-to higher-order critical thinking. Third, it analyzes the relationship between the textbook, Vision 2030, and other national policy documents and their alignment.

### **FINDINGS**

This section presents the findings in direct response to the research questions, focusing on the representation and framing of SDG 4 (Quality Education), 5 (Gender Equality), and 13 (Climate Action) across ten secondary school textbooks in Saudi Arabia. Data were extracted through keyword searches, contextual reading, and discourse analysis of both the text and tasks.

#### **Overview of Frequency**

Table 2 (see appendix) summarizes the distribution of references across the textbooks. It presents the number of mentions identified for each SDG with the corresponding page numbers. Overall, Gender Equality was the most frequently referenced theme (36 mentions), followed by Quality Education (32 mentions), whereas Climate Action appeared less often (12 mentions). Arabic, Life Skills, and Fiqh textbooks showed substantial engagement with SDG 4 and 5, whereas Ecology was the clear leader in climate-related content.

#### **Illustrative Examples by Theme**

To complement this quantitative overview, the following excerpts illustrate how sustainability-related themes were embedded in the curriculum:

**Quality Education (SDG 4):**

- Arabic textbook (p. 52): *“Vision 2030 revolves around three main pillars ... including capacity building and development programs aiming at improving the quality of education, training, and attainment outcomes to reach world standards.”*
- Life Skills (p. 7): *“Today’s life needs people who develop their skills so that they have the abilities to build relationships, manage conflicts with others, and work in teams.”*
- Chemistry (p. 6): *“One aim of this textbook is to adhere to the Saudi Vision of developing advanced curricula ... improving outputs and keeping pace with global developments.”*

**Gender Equality (SDG 5):**

- Life Skills (p. 27): *“The Royal Decree of 1436 A.H. instructed relevant authorities to conduct educational sessions for those under 18 years of age to raise awareness of the social and health risks of early marriage.”*
- Fiqh (p. 32): *“A woman has the right to separate from her husband by resorting to what is called khul’, which requires her to provide compensation.”*
- Arabic (p. 71): *“In groups, discuss (both males and females) the problem of misuse of social media sites.”*

**Climate Action (SDG 13):**

- Ecology (p. 53): *“Global Issues: mark those that affect us the most. Write a fact for each issue you chose and an effect for that fact.”*
- Ecology (p. 13): *“The Line City aims to preserve 95% of environmental resources and is linked to Vision 2030.”*
- Biology (p. 142): *“Climate change impacts ecological succession, altering the stability of bio-communities.”*

**Interpretation of Results**

The inclusion of sustainability-related themes revealed a policy-driven integration pattern:

- Quality Education is presented in ways that emphasize Vision 2030, capacity-building, and general skills.
- Gender Equality receives notable attention across both secular and religious subjects and is often framed through Islamic law and social reform narratives.
- Climate Action is less frequent, but in instances where it appears (primarily in Ecology), it is elaborated on in detail, linking environmental issues to Saudi national projects and global climate discourse.

**DISCUSSION**

Framed by the research questions, this section analyzes the representation, instructional context, and policy alignment of SDG content in digitalized Saudi secondary school textbooks. The outcomes are positioned in the context of Education for Sustainable Development (ESD), and the geopolitics of curriculum concentration and Vision 2030. It is then juxtaposed with scholarly works in the region and the world.

### **Quality Education (SDG 4)**

References to educational quality were present in both humanities and science textbooks, particularly *Arabic Language*, *Life Skills*, and *Chemistry*. Themes such as lifelong learning, active listening, capacity building, and 21<sup>st</sup>-century skills were explicitly linked to Saudi Vision 2030, framing education as a tool for both national development and labor market preparation. However, STEM subjects, such as *Mathematics* and *Physics* contained only marginal mentions, mostly limited to introductory statements rather than embedded tasks.

These findings reinforce the observation that the Saudi education policy emphasizes quality improvement through centralization and Vision 2030 alignment (OECD, 2020; Essa & Harvey, 2022). Similar dynamics have been observed in other centralized education systems, where national ideologies are embedded in curricular reform but often struggle to translate into substantive pedagogical transformation (Silalahi & Yuwono, 2018). Similar patterns are also noted in Al-Sharif's (2023) content analysis of Saudi science textbooks, which found sustainability references to be present but unevenly distributed. At the international level, Ng (2019) highlights the importance of systematically embedding ESD into curricular structures, while Sterling et al. (2013) warn that without pedagogical reform, quality education risks remaining aspirational rather than transformative. Thus, the Saudi case reflects global challenges: policy rhetoric on educational quality is strong, but integration into STEM content remains limited. This pattern aligns with recent global analyses suggesting that while sustainability and SDGs are increasingly referenced within emerging educational paradigms, their systematic integration into disciplinary curricula remains inconsistent (Ramírez-Montoya et al., 2025).

### **Gender Equality (SDG 5)**

Gender equality themes were among the most prominent and appeared across *Arabic*, *Life Skills*, and Islamic subjects (*Fiqh*, *Hadith*, *Tawheed*). These references addressed issues such as early marriage, shared family responsibilities, and women's rights under Islamic jurisprudence, including the right to *khul'*. Importantly, textbooks increasingly employed inclusive discourse (e.g., dual pronouns "male and female"), signaling a shift toward broader recognition of gender equity. From a theoretical perspective, gender representations in curricula often reproduce or challenge dominant social norms, depending on how power and ideology are framed within educational discourse (Omojemite et al., 2024).

These results suggest a gradual departure from earlier portrayals of rigid gender roles documented in the Saudi curricula (Alhazmi, 2018). Essa and Harvey (2022) argue that Vision 2030 has reframed the gender discourse in public policy, a trend mirrored in curricular materials. Evidence from other cultural contexts similarly suggests that educational messaging plays a significant role in shaping women's attitudes toward participation in higher education and public life (Putri et al., 2023). Internationally, Sterling and Huckle (2016) emphasize that sustainability requires both social justice and equity dimensions, whereas Ng (2019) stresses the alignment of ESD with the human rights discourse. The Saudi case appears to blend global

human rights language with Islamic principles, reflecting broader trends across Gulf education reforms (Essa & Harvey, 2022).

### **Climate Action (SDG 13)**

Climate-related content was the least frequent, with most references concentrated in *Ecology* and, to a lesser extent, *Biology*. The material addressed biodiversity, climate hazards, water scarcity, and sustainability projects like *The Line*. While specific concepts such as recycling and ecological succession were mentioned, they were largely confined to environmental science contexts and rarely connected to broader socio-economic or ethical dimensions.

This concentration supports Sterling et al's (2013) observation that sustainability content is often siloed in environmental subjects. International studies (Mochizuki & Fadeeva, 2010; Sterling & Jickling, 2017) emphasize that effective ESD requires cross-disciplinary integration, linking climate change to social, cultural, and economic issues. Locally, Al-Sharif (2023) found similar patterns in intermediate science textbooks, where environmental sustainability was present but narrow in scope. Thus, while Saudi curricula pay increasing attention to climate action, the framing remains technical rather than holistic.

## **CONCLUSION**

The aim of this study was to assess the representation of Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13) in three public grade secondary school textbooks in the Kingdom of Saudi Arabia for the academic year 2022-2023. Qualitative content and discourse analytical methods were employed in this research on ten subjects in the humanities, sciences, and Islamic education to address the degree to which the curriculum captures the essence of sustainability.

The findings indicate that while sustainability themes are increasingly present, their distribution is uneven. Gender equality and quality education were referenced most frequently, particularly in Arabic, Life Skills, and Islamic education, whereas climate action was concentrated almost exclusively in Ecology and Biology. This pattern highlights both progress and persistent gaps: Saudi curriculum reform, guided by Vision 2030, reflects a clear alignment with international calls for Education for Sustainable Development, yet integration remains more implicit than explicit in STEM fields and is largely compartmentalized within certain subject areas.

However, this study has certain limitations. It focused on theoretical frameworks; consequently, it fails to account for instructional practices by teachers and practical engagements by students. In addition, the analysis was confined to ten basic subjects and neglected elective and vocational courses that might also contain elements of sustainability. The study concentrated primarily on the textual content of the textbooks and did not systematically examine visual elements such as images and graphics, even though these play an important role in shaping how sustainability is communicated. Moreover, it is limited to the academic year 2022–2023, and any subsequent changes to the curriculum could affect the depth and breadth

of sustainability discourse. Future inquiries should go beyond document analysis to include teacher and student experiences as well as classroom practices; in order to better understand how curricular commitments are enacted in practice. This would deepen our understanding of the strategic reforms in Saudi Arabia and provide useful comparative insights for other centralized education systems seeking to integrate the United Nations SDGs into their curricula.

## REFERENCES

- Al-Jeddani, A.A. (2018). *Incorporating Sustainable Development in Social Studies and Citizenship Education Curriculum: A Collaborative Community of Practice Case Study in a Saudi High School Context*. [Doctoral dissertation, University of Exeter]. ProQuest Dissertations Publishing.  
<https://www.proquest.com/openview/2a03a49508046d1a1562d4ef96ce4bae/1?pq-origsite=gscholar&cbl=51922&diss=y>
- Alqahtani MH. (2024). Women in Saudi secondary school EFL textbooks: a critical study of women's empowerment as enshrined in the Saudi Vision 2030. *Frontiers in Sociology*, 25(9), 1307623. doi: 10.3389/fsoc.2023.1307623
- Al-Sharif, M. (2023). Content analysis of Saudi third intermediate science textbook in the light of sustainable development dimensions. *Journal of Umm Al-Qura University for Educational and Psychological Sciences*, 15(3), 1–18.  
<https://doi.org/10.54940/ep63356615>
- Alyami, R. (2014). Educational reform in the Kingdom of Saudi Arabia: Tatweer schools as a unit of development. *Literacy Information and Computer Education Journal*, 5(2), 1515–1524. DOI: [10.20533/licej.2040.2589.2014.0202](https://doi.org/10.20533/licej.2040.2589.2014.0202)
- Apple, M. W. (2014). *Official knowledge: Democratic education in a conservative age* (3rd ed.). Routledge.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Chimbunde, P., & Moreng, B. B. (2024). The sustainability of curriculum reform and implementation through teacher participation: Evidence from social studies teachers. *Journal of Curriculum Studies Research*, 6(1), 83–98.  
<https://doi.org/10.46303/jcsr.2023.6>
- Essa, S., & Harvey, B. (2022). Education for Sustainable Development in Saudi Arabia: A Critical Discourse Analysis of Media and Government Policy Documents. *Interdisciplinary Journal of Environmental and Science Education*, 18(2), e2266. <https://doi.org/10.21601/ijese/11519>
- Hamdan, A. K. (2015). Reforming higher education in Saudi Arabia: Reasons for optimism. In D. B. Jones, R. Moogan, & R. Sabouni (Eds.), *Higher education revolutions in the Gulf* (pp. 26–40). Routledge. <https://doi.org/10.4324/9780203796139-7>

- Hess, D. J., & Maki, A. (2019). Climate change belief, sustainability education, and political values: Assessing the need for higher-education curriculum reform. *Journal of Cleaner Production*, 228, 1157–1166. <https://doi.org/10.1016/j.jclepro.2019.04.291>
- IMPACT-se. (2023). *Updated Review of Saudi Textbooks 2023-24*. [Report]. Accessed on 10 september 2025 at [IMPACT-se](#)
- Krippendorff, K. (2019). *Content analysis: An introduction to its methodology* (4th ed.). SAGE.
- Molomo, P. (2023). Renewal in Educational Spaces as a Relational Aspect: Making Way for a New Culture of Reasoning Innovation and Sustainability. *Journal of Curriculum Studies Research*, 5(1), 82-94. <https://doi.org/10.46303/jcsr.2023.7>
- Moore, D., Almeida, S. C., & Barnes, M. M. (2018). Education for Sustainability Policies: Ramifications for Practice. *Australian Journal of Teacher Education*, 43(11). <https://doi.org/10.14221/ajte.2018v43n11.6>
- Ng, A.W. (2019). Sustainability and Education Policy. In: Leal Filho, W. (eds) *Encyclopedia of Sustainability in Higher Education*. Springer, Cham. [https://doi.org/10.1007/978-3-319-63951-2\\_482-1](https://doi.org/10.1007/978-3-319-63951-2_482-1)
- OECD. (2020). *Education in Saudi Arabia*. Reviews of national policies for education. OECD Publishing. <https://doi.org/10.1787/76df15a2-en>
- Odularu, O. (2024). Is It Germane to Sustain Higher Education Research in The Post-Covid-19 Era?. *Research in Social Sciences and Technology*, 9(3), 194-209. <https://doi.org/10.46303/ressat.2024.55>
- Omojemite, M., Ciske, E. N., & Zibongiwe, M. (2024). Gender stereotyping and social norms: Exploring theoretical perspectives and educational implications. *Research in Social Sciences and Technology*, 9(3), 77–92. <https://doi.org/10.46303/ressat.2024.48>
- Olatoye, T., & Fru, R. (2025). A Pedagogical Approach Towards Ameliorating the Global Effects of Covid-19 Pandemic Through Forest Restoration and Environmental Sustainability. *Research in Social Sciences and Technology*, 10(1), 159-178. <https://doi.org/10.46303/ressat.2025.9>
- Pingel, F. (2010). *UNESCO guidebook on textbook research and textbook revision* (2nd ed.). UNESCO.
- Putri, M. L., Suminar, J. R., Hadisiwi, P., & Rachmawati, T. S. (2023). Gender equality in education: Relationship between communication patterns and women’s attitudes toward higher education. *Journal of Social Studies Education Research*, 14(4), 51–74. <https://jsser.org/index.php/jsser/article/view/4007/641>
- Ramírez-Montoya, M. S., Tariq, R., Roza-García, H., & Casillas-Muñoz, F. (2025). A look at sustainability through the lens of the Sustainable Development Goals and Education 5.0: A systematic review of the literature. *Journal of Social Studies Education Research*, 16(1), 32–57. <https://jsser.org/index.php/jsser/article/view/5720/720>
- Saudi Arabian Cultural Mission (SACM). (n.d.). *Public school education in Saudi Arabia*. SACM. <https://www.sacm.org/ksa/education-in-saudi-arabia/public-school>

- Sibanda, J. (2023). Naming for Sustainability: Interrogating the Efficacy and Sustainability of COVID-19 Metaphor and Nomenclature. *Journal of Culture and Values in Education*, 6(3), 228-245. <https://doi.org/10.46303/jcve.2023.30>
- Silalahi, R., & Yuwono, U. (2018). The sustainability of Pancasila in Indonesian education system. *Research in Social Sciences and Technology*, 3(2), 58–78. <https://doi.org/10.46303/ressat.03.02.4>
- Sterling, S., & Huckle, J. (2016). *Education for sustainability* (Rev. ed.). Routledge. (Original work published 1996). <https://www.routledge.com/Education-for-Sustainability/Sterling-Huckle/p/book/9781853832567>
- Sterling, S., Jones, P., & Selby, D. (Eds.). (2010). *Sustainability education: Perspectives and practice across higher education*. Earthscan. <https://www.taylorfrancis.com/books/edit/10.4324/9781849776516/sustainability-education-stirling-jones-selby>
- Sterling, S., Maxey, L., & Luna, H. (2013). *The sustainable university: Progress and prospects*. Routledge. <https://www.routledge.com/The-Sustainable-University-Progress-and-Prospects/Sterling-Maxey-Luna/p/book/9780415627740>
- Uleanya, C. (2023). The role of policy, governance, and education for sustainable development in rural Africa. *Journal of Education Research and Rural Community Development*, 5(1), 16–27.
- UNESCO. (2017). *Education for sustainable development goals: Learning objectives*. United Nations Educational, Scientific and Cultural Organization. <https://doi.org/10.54675/CGBA9153>
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. <https://sdgs.un.org/2030agenda>

## APPENDICES

### Appendix A – Sample Textbook Pages


This appendix presents sample pages from the analyzed textbooks. The table below summarizes the subject, textbook structure, and sample images to illustrate the types of materials examined. The first five entries are from Arabic, the following four are from Life Skills, and the final three are from Hadith.

Subject			
Arabic	<b>Publisher &amp; Structure:</b> Ministry of Education (2022) Units integrate readings, activities, and review tasks; emphasis on policy-linked texts		
	<b>SDG Themes</b>		
	Quality education- Sample Illustrative Images	Gender equality	Climate action

<p>P.52</p>	<p>أقرأ النص الآتي قراءة صامتة متأنية، ثم ناقش محتواه مع زملائك، ثم حمله إملالاً حسب ما يطلب منك:</p> <p>اعتمدت رؤية 2030 على ثلاثة محاور رئيسة لتعزيز وبناء ركائز القوة لدى المملكة، وهي: المجتمع الحيوي والاقتصاد المزدهر والوطن الطموح. ووضع مجلس الشؤون الاقتصادية والتنمية منظومة من البرامج التنفيذية المترابطة لتمثل خطة السير لهذه الرؤية، ومنها: برنامج تنمية القدرات البشرية وهدفه تحسين مخرجات التعليم والتدريب، حتى تصل إلى المستويات العالمية، من خلال برامج تعليم وتأهيل وتدريب تتلاءم مع سوق العمل المحلي والعالمي واحتياجاته ومتطلباته المتجددة ومتطلبات الثورة الصناعية الرابعة، كما يسهم هذا البرنامج في تطوير المعلمين والمدربين وأعضاء هيئة التدريس والحكومة وأطقمها التنويرية والجودة والمناهج والبرامج التعليمية والمهنية، والبيئة التعليمية والتدريبية، لتنسجم مع التوجهات الحديثة. كما سيؤمّن البرنامج - منطلقاً من الأسس الإسلامية والتربوية والاجتماعية والمهنية - باستحداث سياسات ونظم تعليمية وتدريبية تعزز من كفاءة الرأسمال البشري بما يحقق الشمولية والجودة والمرونة وخدمة شرائح المجتمع تعزيزاً لريادة المملكة إقليمياً وتنافسها دولياً، (الموقع الإلكتروني لرؤية المملكة 2030 - بصرفه).</p> 	
<p>P.87</p>	<p>وحسن الإصغاء ضرورة من ضرورات التعلم، يل إن أول التعلم حسن الإصغاء وثانيه جودة الفهم، من أجل ذلك يتعين على المؤسسات التعليمية أن تعلم من يرثاها كيف يُجيد الإصغاء قبل أن تُعلمه ضروب المعرفة، لأن الإصغاء فن من فنون الحياة، وعن طريقه نستفيد من تجارب الآخرين، ولنتفح بأرائهم، فما أحوج مجتمعنا إلى طالب إذا أقبل على العلم أجاد الامتاع والفهم ممن يُعلمه. والى صديق وفي إذا اشكى صديقه وجده يسمع شكواه، ويخفف وهمها عليه! ألا ترى - بعد هذا كله - أن في الإصغاء وفاقاً ومودة بين الإنسان وأخيه الإنسان؟ وأن بالإصغاء تتجاوب النفوس، وتتلاقى الأفكار؟ ويفضله يخرج الإنسان إلى دائرة أوسع من الأخوة والصداقة والهدف الإنساني.</p>	
<p>p.88</p>	<p>أصبح الحديث عن الحياة غريباً، لأن الناس أخطأوا في فهم الحرية وتقدير معنى الشجاعة الأدبية، وأسأوا فهم معنى احترام الآخرين وتحسين العلاقة معهم، وساء الاجترار على الفصح أحياناً، وتحدي الآداب والأخلاق في بعض الظروف والأحوال، ولكن مع كل هذا يظل الحياة هو الأديب العالي لكل الناس على مختلف مراتبهم ومناصبهم، وللرجل الكبير والشاب والصغير، وللمرأة والفتاة، ويضمن الإنسان عادة لمن يُلمس منه خلق الحياة، وإذا لم تسمع فاضع ما شئت.</p>	
<p>P.101</p>	<p>السرعة الفكرية مطلب أساسي، يساعدنا على الاحتفاظ بتوازننا في عصر تحاسرتنا فيه المعلومات، وتغيرنا فيه وبشكل تلقى المعرفة بسيل جارف من المعلومات المتعددة والمتلاحقة كل يوم وكل ساعة، وحتى كل ثانية تقريباً.</p> <p>فإذا كنا مستعجلين بسرعة يمانية في القراءة فسيكون مخرجنا من قراءة المد الأمنى مما يجب علينا قراءته ومتابعته. إن الوسيلة الوحيدة التي تمكننا من متابعة سيل المعلومات الجارف لما هي سرعة.....</p> <p>الفهم والتكوين المعنى من الموضوع المكتوبة هو غاية القراءة، فإذا كنا نقرأ بسرعة أو ببطء دون أن نفهم فما قيمة القراءة؟</p> <p>إن القراءة التي نريدنا نكتسبها بصفحتين أساسيتين، هما: السرعة و.....</p> <p>أنت تعلم أن للفهم درجات وأصنافاً متفاوتة، فهناك الفهم (الحرفي) أي فهم ظاهر النص منطوقه، ماذا يقول النص؟ وهناك الفهم (التفسيري) وهو (صحيح من دوافعه، وفيه يقوم القارئ بتفسير المقروء وتحليله واستخلاص النتائج منه. وهناك الفهم (الإنمائي) (التألق) وهو أصعب من الفهم التفسيري، وفيه يحكم القارئ على معلومات النص وأسفوه وبنائه، ويعبر فيه بين الحقائق والآراء، ويثبت إلى ما وراء طينهم حلولاً واقتراحات، بعيدة، ويتبين خصوصاً في صنوفه، يستفيد منه في حل مشكلات مشابهة.</p> <p>وحتى ذلك أن بعض القراء يظنون عند أول درجات الفهم، وبعضهم يفتد إلى ما بين سطوحه الفهم، أو يعمد إلى ما وراء السطوح.</p>	

<p>Subject</p>			
<p>Life Skills</p>	<p><b>Ministry of Education (2022)</b></p>		
	<p>Modules on civic, health, social, and environmental competencies.</p>		
	<p><b>SDG Themes</b></p> <p><b>Quality education</b></p>	<p><b>Gender equality</b></p>	<p><b>Climate action</b></p>

P.7	<p>مع تغير ظروف الحياة العامة وما نتج عنه من تغير في ظروف العمل وتزايد متطلباته أصبح من الضروري جداً تدريس المهارات الحياتية بشكل عام والمهارات الشخصية والاجتماعية بشكل خاص والتدريب عليها. لقد أضحت الحياة - اليوم - تحتاج إلى أفراد يطورون مهاراتهم بشكل يساعدهم في بناء علاقاتهم وإدارة الصراع مع الآخرين والعمل ضمن الفريق وغيرها من المهارات التي تهيئ كل واحد ليكون فاعلاً ومنتجاً؛ سواء في حياته العامة أو الخاصة أو في حياته العملية، ولهذا تأتي أهمية تدريس هذه الوحدة والتدريب عليها ضمن مواقف قريبة أو جماعية من أجل تحقيق هذا الهدف.</p>		
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Life Skills	Quality education	Gender equality	Climate action
P.27		<p>Prohibition of marriage before 18 years of age whether male or female</p> 	
P71-72-73-75		<p>Gender equality in discourse</p> <p>مجموعتك ناقش/ي مشكلة سوء استخدام مواقع التواصل الاجتماعي</p> <p>(١) اكتب/ي مرادفات لكلمة (مشكلة).</p> <p>(٢) هات/ي أمثلة لمشكلات في المجالات الآتي ذكرها:</p> <p>ارصد/ي اهداف المحصول على شهادة الثانوية العامة لبعض زملائك/زميلاتك ثم صنف/ي الاهداف التي تم رصدتها من حيث كونها مادية، مهنية، دينية، اجتماعية.</p> <p>حدد/ي الهدف الأقوى والمناسب لقدراتك وإمكاناتك.</p> <p>فسر/ي النتيجة.</p>	
P.32		<p>Emphasize respect for male and female tendencies and wishes both in the family</p> <p>والحياة الأسرية مجموعة تفاعلات بين الأفراد ذكور وإناث لكل منهم ميوله واهتمامه ورغباته، تكون في وحدة واحدة هي الأسرة، ويقدر تعاونهم وتفاهمهم يكون نجاحهم في توفير حياة</p>	

Subject	
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Hadith	Ministry of Education (2022)		
	Moral/religious guidance with didactic exercises.		
	SDG Themes		
	Quality education	Gender equality	Climate action
P.74			
P.79			
P.83			

Table 2.

## SDG Mentions in Textbooks

Subject	Quality (Mentions / Pages)	Education Gender (Mentions / Pages)	Equality Climate Action (Mentions / Pages)
Arabic	7 / pp. 6, 52, 64, 75, 79, 87, 101	9 / pp. 24, 40, 61, 88, 100, 132, 157, 159, 169	–
Life Skills	4 / pp. 7, 62, 109, 113	9 / pp. 27, 32, 69, 71, 72, 73, 125, 129, 131	–
Hadith	4 / pp. 7, 71, 74, 75	4 / pp. 53, 56, 66, 83	–
Fiqh	4 / pp. 8, 21, 169	7 / pp. 31, 48, 52, 53, 56, 66, 183	–
Tawheed	2 / pp. 50, 123	4 / pp. 115, 120, 125, 126	–
Chemistry	2 / pp. 6, 7	1 / p. 4	–
Physics	3 / pp. 4, 5, 182	1 / p. 3	–
Biology	2 / pp. 3, 4	–	2 / pp. 134, 142
Ecology	3 / pp. 3, 4, 16	–	10 / pp. 52, 53, 54, 59, 91, 96, 114, 121, 130, 133
Mathematics	2 / pp. 5, 84	1 / p. 105	–
<b>Total</b>	<b>32</b>	<b>36</b>	<b>12</b>