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كلية الآداب و اللغات

DEPARTMENT OF LETTERS & ENGLISH LANGUAGE

قسم الآداب و اللغة الإنجليزية



**Embedding Sustainable Development Goals in Algerian English Secondary School
Textbooks: A Critical Analysis**

**A Dissertation Submitted to the Department of Letters and English Language in Partial
Fulfillment of the Requirements for the Degree of Master in Language and Culture**

BOARD OF EXAMINERS

Chairman: Dr Mourad ATY

University of 8 May 1945-Guelma

Examiner: Mrs Sabrina LASSOUAD

University of 8 May 1945-Guelma

Supervisor: Dr Abdelkrim DEKHAKHNA

University of 8 May 1945-Guelma

Submitted by:

Supervised by:

-Said AZZOUZ

-Dr Abdelkrim DEKHAKHNA

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DEDICATION

In the name of **Allah** Almighty my creator, my strong pillar, my source of inspiration,
Wisdom, knowledge and understanding.

It is with genuine gratitude and warm regard that I dedicate this work to my beloved family, **my father and mother** who were always guiding me to go through the right path. I also dedicate this work to my small family, **my wife** for continuous support and encouragement.

Without forgetting to strongly thank my lovely daughters “**Roumayssa, Roufeida and Ritedj**” and all persons who shared me difficult times all around the making of this works. Thank you so much.

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ABSTRACT

This dissertation investigates how the United Nations' Sustainable Development Goals (SDGs) are included in English language textbooks used in Algerian secondary schools. It emphasizes the importance of education in reaching global sustainability aims and seeks to understand the degree and manner of SDG integration in the textbooks. The study focuses on key themes such as Quality Education (SDG 4), Gender Equality (SDG 5), and Climate Action (SDG 13), which highlight environmental awareness and social equity. Using a detailed content analysis, the research examines both the obvious and subtle ways these SDGs are presented in the textbooks, evaluating whether their inclusion meets international educational standards for sustainability. The study also gathers qualitative feedback from teachers to learn how the inclusion of these themes affects language learning and critical thinking about sustainability. Ultimately, this research aims to provide useful insights for curriculum developers, educators, and policymakers in Algeria to improve English language education and promote awareness of sustainable development among students.

Keywords: Sustainable Development Goals (SDGs), English Language Textbooks, Algerian Secondary Education, Content Analysis, Global Citizenship, Curriculum Development

LIST OF ABBRIVIATIONS AND ACRONYMS

EFL English as a Foreign Language

ELT: English Language Teaching

ESD: Education for Sustainable Development

INRE: Institut National de Recherche en Education

SDG: Sustainable Development Goal

UN: United Nations

UNESCO: United Nations Educational, Scientific and Cultural Organization

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GENERAL INTRODUCTION

This thesis explores the integration of the United Nations' Sustainable Development Goals (SDGs) within English language textbooks used in Algerian secondary schools, aiming to assess their representation, relevance, and pedagogical effectiveness.

The dissertation has six chapters, starting with an introduction that explains the research background, goals, and importance. It discusses education's key role in global sustainability and analyzes how SDGs are included in textbooks and teaching methods. The study uses both qualitative content analysis and teacher surveys..

Key themes under investigation include SDG 4 (Quality Education), SDG 5 (Gender Equality), and SDG 13 (Climate Action), among others. The research addresses critical questions about the extent of SDG representation, the balance between explicit and implicit content, cultural relevance, and teachers' roles in mediating these materials. The findings aim to inform curriculum developers, educators, and policymakers, offering actionable insights to enhance the role of English language education in fostering global citizenship and sustainability awareness among Algerian students.

By bridging global frameworks with local educational contexts, this study contributes to broader discussions on sustainable development education, providing a model for similar analyses in other regions. The dissertation underscores the transformative potential of language education in addressing pressing global challenges while equipping students with the knowledge and skills needed for a sustainable future

1. Background and Rationale

The United Nations' Sustainable Development Goals (SDGs) are a global framework for addressing critical social, economic, and environmental challenges. Education plays a key role in advancing these goals by fostering knowledge, skills, and values for sustainability (UNESCO, 2017). Textbooks, as primary educational tools, help shape students' understanding of global issues (UNESCO, 2016).

Integrating SDGs into language education is particularly valuable, as English—being a global lingua franca—allows students to engage with international sustainability discourses while developing intercultural awareness (Nabavi & Mohammadi, 2020). In Algeria, English education has expanded under recent reforms, creating opportunities to embed SDGs into curricula (Ministry of National Education, 2019). However, global research shows SDG integration in



Figure 1: The (17) Seventeen Sustainable Development Goals.

textbooks is often superficial, with limited teacher guidance (Leal Filho, 2018). This study examines how Algerian English textbooks incorporate SDGs, addressing gaps and enhancing sustainability education.

4. Research Problem

The need for systematic analysis of current textbook content is particularly acute given the evolving nature of both sustainable development discourse and English language teaching methodologies (Leal Filho, 2018). As global understanding of sustainability challenges becomes more nuanced and interconnected, educational materials must likewise evolve to reflect these complexities (UNESCO, 2016). Without comprehensive research examining the current state of SDG integration in Algerian English textbooks, curriculum developers and policymakers, lack the evidence base needed to make informed decisions about future revisions and enhancements (Leicht et al., 2018).

Effective SDG integration in language teaching materials faces numerous challenges that must be addressed through careful research and analysis (Tilbury et al., 2002). These include balancing global frameworks with local relevance (Barrow, 2007), avoiding superficial or tokenistic treatment of complex issues, and ensuring that sustainability themes genuinely enhance rather than detract from language learning objectives (Darwich, 2021). Additionally, materials must navigate potentially sensitive social and political dimensions of sustainable development while remaining accessible and engaging for diverse learners. Understanding how current textbooks navigate these challenges is essential for identifying best practices and areas for improvement.

A particularly significant aspect of the research problem is the potential disconnect between global SDG frameworks and local educational contexts (Tilbury, 2014). While the SDGs provide a universally applicable set of objectives, their meaningful integration into educational materials requires careful adaptation to specific cultural, social, and economic realities (UNESCO, 2016). In the Algerian context, this necessitates consideration of national development priorities, cultural values, and the lived experiences of students and teachers (Ministry of National Education, 2019). Without research examining how current textbooks negotiate this global-local interface, there is a risk that SDG content may appear irrelevant or disconnected from learners' realities (Freire, 2005), limiting its educational impact.

5. Objectives of the Study

The study aims to analyze the integration of Sustainable Development Goals (SDGs) in Algerian English secondary school textbooks. It will identify the presence and representation of SDGs, highlighting gaps or imbalances in coverage. The study will also evaluate the effectiveness of SDG integration in fostering awareness and understanding among learners, examining the framing, contextualization, and development of SDG-related content. It will also analyze the pedagogical approaches used for SDG integration, examining how these themes are incorporated into different aspects of language learning.

The study will also assess the cultural and contextual relevance of SDG content in the textbooks, examining how it connects meaningfully with Algerian cultural contexts, social realities, and development priorities. The research will also examine teachers' perspectives on SDG integration in textbooks, recognizing their crucial role in mediating textbook content and shaping learners' experiences. By incorporating teacher viewpoints on the accessibility, usefulness, and effectiveness of SDG-related materials, the study will provide a more

comprehensive understanding of how these resources function in practice and what support educators might need to maximize their potential.

6. Research Questions

This study explores the integration of Sustainable Development Goals (SDGs) in Algerian English secondary school textbooks through a series of key research questions:

1. What SDGs are represented in Algerian English secondary school textbooks? It investigates which of the 17 SDGs are represented in the textbooks, analyzing their frequency and contextual framing
2. How are these goals presented (explicitly or implicitly)? It examines how these goals are presented -whether explicitly named and explained or implicitly addressed through broader sustainability themes.
3. What pedagogical approaches are used to integrate SDGs in textbook content? It assesses the pedagogical approaches used to incorporate SDG-related content, considering how these strategies influence student engagement and learning outcomes.
4. How culturally and contextually relevant is the SDG content? It evaluates the cultural and contextual relevance of the SDG material, analyzing whether sustainability issues align with Algerian development priorities and whether examples reflect local perspectives alongside global frameworks.
5. what are teachers' perspectives on the effectiveness of SDG integration? It explores teachers' perspectives on the effectiveness of SDG integration, including their views on the accessibility, usefulness, and practical impact of these materials in the classroom. Together,

these questions provide a comprehensive understanding of SDG representation in Algerian textbooks, addressing content, presentation, contextualization, and educator experiences. The findings aim to inform curriculum development, teacher training, and policy decisions to enhance sustainable development education in Algeria.

6. Significance of the Study

This study provides a comprehensive analysis of how Sustainable Development Goals (SDGs) are integrated into English language textbooks, offering valuable insights for curriculum design and policy enhancement in Algeria. It aims to identify strengths and gaps in SDG coverage, enabling more strategic approaches to incorporate sustainable development themes in future materials. This evidence-based approach could significantly improve Algerian students' engagement with global sustainability challenges through language education.

The findings also hold implications for teacher training and professional development programs. By identifying pedagogical approaches used for SDG integration and examining teachers' perspectives on implementing this content, the study can guide the development of targeted professional development initiatives that equip teachers with the knowledge, skills, and confidence needed to effectively engage students with sustainability themes.

The study also holds particular relevance to Algeria's national sustainable development priorities, as the country faces diverse sustainability challenges such as water scarcity, desertification, youth unemployment, and economic diversification. By examining how national priorities are reflected in educational materials, the research can contribute to more coherent approaches to sustainable development across educational and policy domains.

By providing detailed analysis from the Algerian context, the study contributes to broader scholarly conversations about the role of language education in promoting sustainable development.

8. Structure of the Dissertation

This dissertation is organized into six chapters to systematically explore the integration of Sustainable Development Goals (SDGs) in Algerian English secondary school textbooks. The General Introduction outlines the research background, objectives, and significance, setting the stage for the study. Chapter One reviews relevant literature on SDGs in education, EFL teaching, and the Algerian educational context, establishing the theoretical foundation. Chapter Two details the research methodology, including qualitative content analysis and teacher surveys, ensuring a robust mixed-methods approach. Chapter Three presents findings from the textbook analysis, examining SDG representation, pedagogical integration, and cultural relevance. Chapter Four explores teachers' perspectives on SDG implementation, challenges, and suggestions for improvement. Chapter Five synthesizes key findings, discusses implications for curriculum development and teacher training, and addresses the research questions. Finally, the General Conclusion summarizes the study's contributions, limitations, and recommendations for enhancing SDG integration in Algerian English education. This structured approach ensures a comprehensive examination of the topic, bridging global frameworks with local educational practices.

Chapter One

Literature Review

Introduction

This chapter delves into the existing body of knowledge relevant to the integration of Sustainable Development Goals (SDGs) within English language education, particularly focusing on the Algerian context. It begins by exploring the historical evolution of sustainable development concepts in education and the pivotal role of the UN 2030 Agenda. The review then examines theoretical frameworks that inform the understanding of SDGs in educational settings, including critical pedagogy and systems thinking. Furthermore, it discusses the intersection of language teaching, global citizenship, and sustainability, highlighting the unique potential and challenges of using English language instruction to foster awareness of global issues. Finally, the chapter situates the research within the specific context of the Algerian education system and identifies gaps in the current literature regarding SDG integration in Algerian English language textbooks, thereby establishing the theoretical and contextual foundation for the present study.

1.1 Overview of the SDGs in Education

The integration of Sustainable Development Goals (SDGs) into education represents a significant evolution in how educational systems approach global challenges and prepare students for an increasingly interconnected world. This section examines the historical development of sustainable development in education, the UN 2030 Agenda's educational implications, global and local perspectives on SDG integration, and theoretical frameworks for understanding SDGs in educational contexts.

The concept of sustainable development in education has evolved considerably over the past several decades. The roots of this evolution can be traced to the 1972 United Nations Conference on the Human Environment in Stockholm, which first recognized the interconnections between environmental protection and human development. However, it was the 1987 Brundtland Commission report, "Our Common Future," that provided the foundational definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition established the intergenerational equity principle that continues to underpin sustainable development education today.

The 1992 Earth Summit in Rio de Janeiro marked another significant milestone, with Chapter 36 of Agenda 21 explicitly recognizing education as "critical for promoting sustainable development and improving the capacity of people to address environment and development issues." This recognition led to the UN Decade of Education for Sustainable Development (2005-2014), which aimed to integrate the principles, values, and practices of sustainable development into all aspects of education and learning. The decade catalyzed numerous initiatives worldwide, from curriculum reforms to teacher training programs, establishing education for sustainable development (ESD) as a distinct pedagogical approach (Tilbury et al., 2002).

The adoption of the UN 2030 Agenda in 2015, with its 17 Sustainable Development Goals, represented a watershed moment for sustainable development education (United Nations, 2025). Unlike previous frameworks, the SDGs explicitly recognize education both as a standalone goal (SDG 4: Quality Education) and as a means to achieve the other goals. SDG 4.7 specifically calls for ensuring that "all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable

development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (UNESCO, 2017).

This dual positioning of education within the SDGs has profound implications for educational systems worldwide. It necessitates not only improving access to quality education (the focus of most targets under SDG 4) but also transforming educational content and pedagogies to address sustainability challenges. UNESCO's framework for implementing SDG 4.7 emphasizes that this transformation requires attention to cognitive, socio-emotional, and behavioral learning domains, enabling students to understand sustainability issues, develop empathy and critical thinking, and take action in their communities (Leicht et al., 2018).

Global perspectives on SDG integration in education reveal diverse approaches and priorities. High-income countries often emphasize environmental sustainability and global citizenship, with extensive curricular resources and teacher training programs supporting these emphases (Leal Filho, 2018). For example, Finland has integrated sustainable development across subject areas through its phenomenon-based learning approach, while Australia has developed detailed sustainability cross-curriculum priorities. Middle-income countries frequently focus on connecting sustainable development to economic growth and social inclusion, as seen in Brazil's emphasis on environmental education linked to social justice or [Thailand's Sufficiency Economy Philosophy] in education.

Low-income countries, meanwhile, often prioritize basic education access and quality while seeking to address immediate sustainability challenges such as climate adaptation or gender equality (World Bank, 2022). For instance, Kenya has integrated climate change education into its curriculum, while Bangladesh emphasizes disaster risk reduction education in vulnerable

coastal areas. These diverse approaches reflect different national contexts, priorities, and resources, highlighting the importance of contextually appropriate implementation of SDG education.

Local perspectives on SDG integration are equally important, as they determine how global frameworks are translated into meaningful learning experiences for students in specific contexts. Research indicates that effective SDG education connects global issues to local realities, enabling students to see the relevance of sustainability challenges to their own lives and communities (Darwich, 2021). This connection requires careful adaptation of educational materials to reflect local environmental conditions, cultural values, economic realities, and social structures.

In the North African context, including Algeria, local perspectives on sustainable development education often emphasize water conservation, desertification, youth employment, and cultural preservation alongside global environmental and social concerns. Studies from Morocco, Tunisia, and Egypt indicate that successful SDG integration in these contexts requires balancing international frameworks with national development priorities and cultural values, particularly regarding gender roles, economic models, and governance structures (Ministry of National Education, 2019).

Theoretical frameworks for understanding SDGs in educational contexts provide important lenses for analyzing how sustainable development is conceptualized and implemented in learning materials. Critical pedagogy approaches, drawing on Freire's work, emphasize the importance of problematizing unsustainable development patterns and empowering students to envision and create alternatives (Freire, 2005). These approaches highlight the political

dimensions of sustainable development and the need for education that fosters critical consciousness about power relations and structural inequalities.

Systems thinking frameworks emphasize the interconnections between environmental, social, and economic dimensions of sustainability, encouraging students to understand complex causal relationships and feedback loops (Tilbury, 2014). These frameworks are particularly relevant to SDG education, as the 17 goals are explicitly designed as an integrated and indivisible whole, with progress on one goal affecting others.

Transformative learning theory, associated with Mezirow and others, focuses on how education can challenge and transform students' assumptions and worldviews, leading to new perspectives and behaviors. This theory is especially relevant to sustainable development education, which often requires shifts in deeply held values and beliefs about consumption, growth, and human-nature relationships (Creswell, 2014).

Postcolonial and decolonial perspectives offer critical insights into how sustainable development education can either reinforce or challenge global power imbalances (Barrow, 2007). These perspectives highlight the importance of including diverse knowledge systems, including indigenous and traditional knowledge, in educational approaches to sustainability. They also caution against imposing Western conceptions of development and sustainability on diverse cultural contexts.

These theoretical frameworks provide valuable tools for analyzing how SDGs are integrated into educational materials, including English language textbooks. They highlight the importance of examining not only what sustainability content is included but also how it is framed, whose perspectives are represented, what assumptions underlie the presentation, and

what kinds of learning and action are encouraged (Nabavi & Mohammadi, 2020; Parvez & Awan, 2021).

1.2 EFL Education and Global Citizenship

EFL Education and Global Citizenship intersection of English as a Foreign Language (EFL) represent a fertile ground for exploring how language learning can contribute to broader educational goals related to sustainable development. This section examines the role of language education in promoting sustainability awareness, critical perspectives on global citizenship education, language as a medium for sustainable development discourse, and pedagogical approaches to integrating global issues in language teaching. Language education, particularly English language teaching, occupies a unique position in promoting sustainability awareness due to several factors.

First, language learning inherently involves engagement with diverse cultural perspectives and worldviews, providing natural opportunities for exploring how different societies understand and address sustainability challenges. Second, communicative language teaching approaches emphasize authentic, meaningful content, making global issues like climate change, poverty, or gender equality potentially valuable contexts for language practice. Third, the global status of English provides access to international discourses on sustainable development, enabling learners to participate in global conversations about shared challenges.

Research has demonstrated various ways in which language education can promote sustainability awareness. Studies by Cates (2014), Jacobs (2018), and others have shown that content-based language instruction focusing on environmental or social issues can simultaneously develop language skills and environmental literacy. Stibbe (2014)'s work on ecolinguistics

highlights how language both reflects and shapes our relationships with the natural world, suggesting that critical language awareness can contribute to ecological consciousness. Meanwhile, Pennycook (2018) and other critical applied linguists emphasize how language education can address issues of social justice and inequality, key dimensions of sustainable development. However, the relationship between language education and sustainability is not without tensions and contradictions. The global spread of English has been linked to ecological and cultural homogenization, raising questions about whether English language teaching inherently promotes unsustainable Western consumption patterns and values. Additionally, the carbon footprint of international language education, including student mobility and materials production, presents challenges to environmental sustainability.

These tensions highlight the importance of critical approaches that acknowledge the complexities of language education's role in sustainable development. Critical perspectives on global citizenship education provide important insights for understanding how EFL education might contribute to SDG implementation. While global citizenship education is often presented as an uncontested good, scholars like Andreotti (2021) distinguish between "soft" approaches that focus on cultural awareness and tolerance without challenging structural inequalities, and "critical" approaches that address power imbalances and promote transformative action. This distinction is particularly relevant to language education, which can either reinforce or challenge existing global hierarchies. Similarly, Pashby (2021)'s work highlights tensions between universalist and relativist conceptions of global citizenship, questioning whether global citizenship education promotes genuine diversity or merely extends Western liberal values globally.

These critiques are especially pertinent to English language education, given the language's historical associations with colonialism and its current connections to globalization processes. They suggest the need for approaches that balance universal principles of human rights and sustainability with respect for cultural diversity and local knowledge systems. Language itself functions as a medium for sustainable development discourse, shaping how sustainability issues are understood and addressed. Critical discourse analysis of sustainable development texts reveals how linguistic choices frame problems and solutions, include or exclude certain voices, and construct relationships between humans and the natural world. For example, Stibbe (2014)'s analysis of environmental discourse identifies metaphors and narratives that either reinforce or challenge anthropocentric worldviews, while Fairclough (2018) examines how neoliberal discourses of sustainable development prioritize economic growth over environmental protection or social justice. In the context of EFL education, these insights suggest the importance of developing students' critical language awareness regarding sustainability discourses. This includes the ability to analyze how textbooks and other materials represent environmental and social issues, whose perspectives are privileged or marginalized, and what assumptions underlie different approaches to sustainable development.

Such critical awareness enables students to engage more thoughtfully with sustainability discourses in both their first language and English. Pedagogical approaches to integrating global issues in language teaching have evolved significantly over recent decades. Content-based instruction (CBI) and content and language integrated learning (CLIL) provide structured frameworks for addressing substantive content, including sustainability issues, while developing language skills. These approaches emphasize authentic materials, meaningful communication, and cognitive engagement, making them well-suited to exploring the complexities of sustainable

development. Project-based learning offers another valuable approach, enabling students to investigate sustainability issues in their local communities while developing language skills through research, collaboration, and presentation. For example, projects might involve conducting surveys on waste management practices, interviewing community members about climate change impacts, or creating awareness campaigns about water conservation. Such projects connect global sustainability frameworks to local contexts while providing authentic purposes for language use. Critical pedagogy approaches, drawing on Freire (2005)'s work, emphasize dialogue, problem-posing, and consciousness-raising about social and environmental issues.

In language education, these approaches encourage students to question dominant discourses, explore multiple perspectives on sustainability challenges, and develop their own voices on issues that matter to them. Canagarajah (2020) and others have demonstrated how critical pedagogy can be adapted to diverse EFL contexts, including those where direct political critique may be culturally or institutionally challenging. Digital technologies have created new possibilities for connecting language learning to global citizenship and sustainability education. Telecollaboration and virtual exchange programs enable students to communicate directly with peers in other countries about shared sustainability challenges, developing both language skills and intercultural understanding. Online projects like the Flat Connections Global Project or iEARN provide structured opportunities for such exchanges, while social media platforms offer more informal spaces for global dialogue on sustainability issues. These various pedagogical approaches share certain principles that appear crucial for effective integration of sustainability themes in language education. These include authenticity (using real-world materials and addressing genuine issues), relevance (connecting global sustainability frameworks to students'

local contexts and personal experiences), criticality (encouraging questioning of assumptions and exploration of multiple perspectives), and agency (empowering students to take action on issues that concern them). Research on the implementation of these approaches in diverse contexts reveals both possibilities and challenges. Studies from contexts as varied as Japan, Brazil, Morocco, and South Korea demonstrate that integrating sustainability themes can enhance student motivation, deepen language learning, and develop critical thinking skills. However, challenges include teacher preparation, assessment alignment, material availability, and navigating politically sensitive topics. These challenges highlight the importance of contextually appropriate implementation and adequate support for teachers.

1.3 The Algerian Educational Context

Understanding how Sustainable Development Goals (SDGs) are integrated into Algerian English textbooks requires looking at the broader educational context in Algeria. This involves examining the structure and goals of secondary education, the history of English language teaching, current curriculum frameworks, and textbook development in the country, along with previous studies on English as a foreign language (EFL) curriculum content.

The secondary education system in Algeria begins after nine years of basic education, consisting of five years of primary school and four years of middle school. Students then enter secondary education for three years, usually between the ages of 15 and 18. At this level, they choose between academic streams—literary, scientific, or mathematical—and technical/vocational streams, each with distinct curricula and textbooks. This division affects how English is taught, with differing focuses based on the chosen stream.

The culmination of secondary education is the Baccalaureate (Bac) exam, which plays a significant role in determining university admissions. This high-stakes examination shapes teaching practices, influencing educators to prioritize content that will be tested, often overshadowing themes like sustainable development that may not be included in the exams.

Since Algeria's independence in 1962, the goals of secondary education have evolved. Initially focused on Arabization and national identity, education was seen as a means of nation-building. In the following decades, there was a shift towards economic development and workforce readiness with an emphasis on technical education. Recent educational reforms, particularly those from the early 2000s, have started to include aims such as global competitiveness and critical thinking. Specifically, the 2003 reform recognized the need to prepare students for a globalized world while upholding national values, which led to competency-based approaches with opportunities for integrating sustainable development education.

The 2016-2030 education sector plan further aligns Algeria's educational objectives with international frameworks like the SDGs, emphasizing quality, equity, and relevance to national and global challenges. It highlights the importance of environmental education, human rights, and global citizenship, indicating growing support for integrating SDGs.

English language teaching in Algeria has changed significantly. After independence, French was the dominant foreign language, with English taking a back seat. However, since the 1970s, English has gained importance, especially in higher education. The 1990s and early 2000s brought reforms emphasizing communicative methods and competency-based language teaching, which allowed for the inclusion of sustainability content in the curriculum.

Current curriculum frameworks show central control but are gradually opening to international influences. The Ministry of National Education oversees curriculum development, creating detailed frameworks for competencies and assessments. Textbook development is coordinated by the National Institute for Educational Research, typically focusing on a centralized process, although recent reforms have introduced some diversity in textbook options.

Research into EFL curriculum content has identified themes related to SDG integration but has rarely focused specifically on sustainable development. Previous studies have noted a shift in cultural references within textbooks and the inclusion of critical thinking opportunities, although many activities still rely on lower-level skills. There is also evidence of increased attention to themes such as environmental education and gender equality, though these are often treated superficially.

Gaps remain in understanding the representation of sustainable development themes in textbooks and how effective they are in engaging students. While previous studies have highlighted opportunities and challenges in integrating global citizenship education, they also stress the need for balancing global perspectives with local cultural values. There is a call for a comprehensive analysis to better understand how SDGs are incorporated into English textbooks in Algeria.

1.4 Frameworks for Content Analysis

The analysis of Sustainable Development Goals (SDGs) in textbooks needs strong frameworks to assess both the presence and quality of sustainability content. This section discusses models for evaluating education materials, theories for analyzing SDG content, coding systems for identifying related content, and methods for textbook analysis.

Content analysis has become a key method for studying how educational materials cover complex topics like sustainable development. This method systematically identifies and interprets content, allowing for detailed and repeatable studies. Models for evaluating sustainable education have evolved, expanding from a focus on environmental education to include social and economic aspects. UNESCO's guidelines have created a broader framework for assessing educational materials, emphasizing the integration of various sustainability perspectives.

The adoption of the Sustainable Development Goals (SDGs) in 2015 led to the development of new evaluation models that focus on how educational materials address specific goals and their interconnections. For instance, the Global Education Monitoring Report assesses how textbooks cover themes related to peace, human rights, gender equality, cultural diversity, and sustainable development. Similarly, UNESCO provides guidance on how educational materials can support learning about each of the 17 goals.

Effective evaluations of SDG content in educational materials often share core elements. These include analyzing both direct and indirect representations of sustainability, balancing environmental, social, and economic dimensions, assessing local-global connections, and promoting critical thinking about sustainable development challenges.

The analysis of SDG content in textbooks is grounded in various theoretical perspectives, including education for sustainable development, critical pedagogy, discourse analysis, and multimodal semiotics. Education for sustainable development emphasizes holistic approaches that foster knowledge, skills, and values necessary for addressing sustainability issues, urging textbooks to engage students in critical thinking and action-oriented learning. Critical pedagogy encourages examining power dynamics in educational materials, questioning dominant ideologies, and relating global themes to local contexts. Discourse analysis focuses on how

language shapes understandings of sustainability, while multimodal semiotics examines how visual elements and design contribute to meaning-making.

Frameworks for identifying SDG-related content have evolved from basic presence/absence measures to more complex schemes that consider different sustainability themes, pedagogical methods, and perspectives. For example, detailed frameworks analyze civic education textbooks by looking at the content, such as human rights and environmental protection, and how students are engaged through discussions or projects. Other frameworks like that by Bagoly-Simó analyze different dimensions of sustainability and various pedagogical approaches, offering a nuanced view of how textbooks address sustainable development.

New frameworks explicitly map textbook content to the 17 SDGs, allowing systematic assessment of which goals are emphasized or overlooked. These frameworks also consider how SDGs are interconnected and whether they relate to students' experiences.

Methods for analyzing textbooks vary in detail and combine quantitative and qualitative approaches. Quantitative methods might count occurrences of themes or assess the proportion of text dedicated to sustainability topics, providing broad patterns. Conversely, qualitative methods, such as critical discourse analysis, offer deeper insights into framing and perspectives in the materials. Mixed-methods approaches combine both strategies for comprehensive analysis of sustainable development in textbooks.

These methodological approaches guide the development of a robust framework for analyzing how SDGs are represented in Algerian English textbooks, emphasizing the need for detailed examination of content, pedagogical strategies, and local context connections.

1.5 Teachers' Perspectives on Curriculum Implementation

The analysis of SDG integration in textbooks focuses on how teachers interpret and implement this content in their classrooms. It highlights the crucial role teachers play in bridging textbook content and student learning, adapting materials based on their knowledge and beliefs. Research shows that teachers are active decision-makers rather than mere transmitters of information. Various studies indicate that teachers' interaction with curriculum materials varies, influenced by their subject knowledge, beliefs, student needs, and cultural contexts. For sustainable development content, teachers' understanding of sustainability issues and their comfort with controversial topics also impact implementation.

Research in Algeria shows that teachers' use of English textbooks is influenced by several factors such as examination pressures, time limits, large class sizes, and different levels of professional training. Although official curricula and textbooks have started using communicative, competency-based methods that align with Sustainable Development Goals (SDGs), actual classroom practices often favor traditional teaching focused on language skills rather than thematic content. This difference affects how well SDG topics in textbooks are understood by students.

Teachers generally have positive views on including global education themes, like sustainable development, in their teaching. They see these themes as important for preparing students for global citizenship. However, they also face challenges related to their own knowledge, teaching preparation, curriculum restrictions, and controversial topics. Studies show that while there is support among English teachers for issues such as environmental sustainability and cultural diversity, concerns about their knowledge, time limitations, and exams hinder deeper engagement with these themes.

Similar research highlights that teachers show general support for sustainability education

but often lack familiarity with sustainable development concepts. They worry about balancing sustainability with subject-specific goals in exam-focused educational systems. In North Africa, English teachers view global themes as enriching but struggle with cultural tensions, resource shortages, and examination pressures.

The challenges of implementing SDG content in classrooms include limitations in teachers' knowledge, pedagogical constraints like time restrictions, and sociocultural factors that can complicate discussions of sensitive topics. Particularly in Algeria, obstacles include varying English proficiency among teachers, limited professional development, and an educational focus on rote learning rather than critical thinking. Support for teachers beyond just the textbooks will be essential for successfully integrating SDG content in Algerian English education.

Professional development needs for effective integration of Sustainable Development Goals (SDGs) have been highlighted in various studies. These needs include developing content knowledge, providing pedagogical training, ensuring resource availability, and establishing ongoing support systems. Meeting these needs is crucial for transforming SDG content in textbooks into meaningful learning for students.

Content knowledge development helps teachers understand sustainable development concepts and issues. Research suggests that professional training should cover not only facts about environmental, social, and economic challenges but also systems thinking that shows the connections between these aspects. For language teachers, this may involve exploring how sustainability conversations are framed in English.

Pedagogical training equips teachers with strategies for engaging students with sustainability themes while improving language skills. Effective approaches include inquiry-based learning, critical literacy, and project-based learning, which help address complex

sustainability issues.

Resource provision focuses on creating teaching materials that aid in SDG integration, including texts and discussion guides that relate global sustainability frameworks to local contexts. Ongoing support systems, such as mentoring and professional learning communities, allow teachers to continuously enhance their approaches.

In Algeria, professional development must align with the educational system's specific challenges and opportunities, emphasizing culturally appropriate strategies. The research underscores the importance of understanding teacher perspectives and needs in fostering effective SDG education.

Conclusion

This chapter has provided a comprehensive literature review on the integration of Sustainable Development Goals (SDGs) within English language education, with a specific focus on the Algerian context. We began by tracing the historical evolution of sustainable development concepts in education, highlighting the transformative impact of the UN 2030 Agenda and the pivotal role of SDG 4.7 in fostering global citizenship and sustainability awareness. The discussion then moved to various theoretical frameworks—including critical pedagogy, systems thinking, transformative learning, and postcolonial perspectives—that offer valuable lenses for analyzing how SDGs are conceptualized and implemented in educational materials. These frameworks underscore the importance of examining not only the content but also the framing, representation of perspectives, underlying assumptions, and desired learning outcomes in sustainability education.

Furthermore, the chapter explored the unique intersection of English as a Foreign Language (EFL) education and global citizenship. It highlighted how language learning

inherently provides opportunities for engaging with diverse cultural perspectives on sustainability challenges and how communicative language teaching can leverage global issues as authentic contexts for language practice. While acknowledging the potential tensions and contradictions, particularly concerning the global spread of English and its historical associations, the review emphasized the need for critical approaches that balance universal principles of human rights and sustainability with respect for cultural diversity and local knowledge systems. Pedagogical approaches such as Content-Based Instruction (CBI), Content and Language Integrated Learning (CLIL), project-based learning, and critical pedagogy were presented as effective strategies for integrating global issues into language teaching, enabling students to develop critical language awareness and engage thoughtfully with sustainability discourses.

In summary, this chapter has laid the theoretical and contextual groundwork for understanding the complexities and opportunities involved in integrating SDGs into English language education. It has underscored the necessity of a nuanced approach that considers historical developments, theoretical underpinnings, global and local perspectives, and effective pedagogical strategies. The identified gaps in the current literature regarding SDG integration in Algerian English language textbooks further emphasize the critical need for the present study, which aims to contribute to this evolving field by providing specific insights into the Algerian educational landscape. The subsequent chapters will build upon this foundation, delving into empirical research to address these gaps and offer practical implications for curriculum development and teacher training in Algeria.

Chapter Two

Research Methodology

Introduction

This chapter details the methodological foundation underpinning the investigation into the integration of Sustainable Development Goals (SDGs) within English language textbooks utilized in Algerian secondary education. It outlines a comprehensive research design employing a qualitative content analysis approach, situated within a broader mixed-methods framework, to systematically examine textbook materials and explore related pedagogical perspectives. The following sections elaborate on the specific research design choices, the criteria and process for selecting representative textbooks, the sampling strategy employed for analyzing textbook content, and the systematic development of a multi-dimensional analytical framework tailored to capture the nuances of SDG representation and integration in this specific educational context.

2.1 Research Design

This study employs a qualitative content analysis approach within a mixed-methods research framework to investigate the integration of Sustainable Development Goals in Algerian English secondary school textbooks (Creswell, 2014). This methodological design was selected to enable both systematic examination of textbook content and exploration of teachers' perspectives on SDG implementation, providing a comprehensive understanding of the research problem.

Qualitative content analysis serves as the primary methodological approach for examining textbook materials (Creswell, 2014). This approach involves systematic identification, coding, and interpretation of specific content elements related to sustainable development, enabling

rigorous and replicable analysis of how SDGs are represented in the textbooks. Unlike quantitative content analysis, which focuses primarily on counting occurrences of predefined categories, qualitative content analysis allows for deeper interpretation of meanings, contexts, and implicit messages in the texts. This interpretive dimension is particularly important for understanding how complex concepts like sustainable development are presented and framed in educational materials.

The study adopts Schreier's approach, developed by Margrit Schreier, which is a qualitative research method primarily used for systematic and rigorous qualitative content analysis. It is particularly useful for analyzing textual data in a structured and transparent manner. It is implemented to qualitative content analysis, which emphasizes systematic coding procedures while maintaining flexibility to capture emergent themes and patterns (Creswell, 2014). This approach involves developing a coding framework with clearly defined categories, systematically applying this framework to the textbook materials, and interpreting the resulting patterns to address the research questions. The coding process includes both deductive elements, drawing on existing frameworks for SDG analysis, and inductive elements that allow for discovery of unique features in the Algerian context.

The mixed-methods dimension of the research design incorporates both textbook analysis and teacher surveys to provide complementary perspectives on SDG integration (Creswell, 2014). While the textbook analysis reveals how SDGs are represented in official materials, the teacher surveys illuminate how these materials are perceived and implemented in practice. This combination allows for triangulation of findings, enhancing the validity and comprehensiveness of the research. The integration of these methods occurs primarily at the interpretation stage,

where findings from both sources are synthesized to develop a holistic understanding of SDG integration in Algerian English education.

The research design is guided by a constructivist epistemological perspective, which recognizes that meanings around sustainable development are socially constructed and contextually situated (Creswell, 2014). This perspective acknowledges that textbooks do not simply transmit objective knowledge but rather construct particular understandings of sustainability issues through their selection, presentation, and framing of content. Similarly, teachers' interpretations of textbook materials are shaped by their own knowledge, beliefs, and contextual factors. This constructivist orientation informs both the analytical approach to textbook content and the interpretation of teacher perspectives.

The justification for this methodological approach lies in its alignment with the research objectives and questions. The qualitative content analysis enables systematic examination of which SDGs are represented in the textbooks and how they are presented, addressing the first two research questions. The inclusion of teacher surveys provides insights into the perceived effectiveness of SDG integration and the challenges of implementation, addressing the fifth research question. The mixed-methods design allows for exploration of both the intended curriculum as represented in textbooks and aspects of the implemented curriculum as reported by teachers.

Several limitations of the research design should be acknowledged. First, the textbook analysis captures the intended curriculum but cannot directly observe how materials are used in classrooms. While teacher surveys provide some insights into implementation, they rely on self-reporting rather than direct observation. Second, the study focuses on textbooks and teacher perspectives but does not include student perspectives, which would provide additional insights

into the experienced curriculum. Third, the cross-sectional nature of the research captures a snapshot of current textbooks and teacher views but cannot track changes over time or assess long-term impacts of SDG integration.

Ethical considerations in this research include ensuring informed consent from teacher participants, maintaining confidentiality of individual responses, and conducting textbook analysis with sensitivity to cultural contexts. The research does not involve vulnerable populations or high-risk procedures, but nevertheless adheres to ethical research principles including respect for persons, beneficence, and justice. All research procedures were reviewed and approved by the appropriate institutional ethics committee before data collection began.

2.2 Sampling and Selection of Textbooks

The sampling and selection of textbooks for analysis was guided by specific criteria to ensure comprehensive coverage of English language materials used in Algerian secondary education (UNESCO, 2016). This section details the criteria for textbook selection, describes the selected textbooks and their contexts, explains the sampling procedures for textbook units and activities, and provides the rationale for selection decisions.

The primary criterion for textbook selection was official approval and current use in Algerian secondary schools. Only textbooks officially endorsed by the Ministry of National Education and in active use during the 2023-2024 academic year were considered for analysis (Ministry of National Education, 2019). This criterion ensures that the study examines materials that actually shape English language education in Algeria, rather than supplementary or outdated resources. Official approval was verified through the Ministry's list of authorized textbooks for secondary education.

A second criterion was coverage across all three years of secondary education (first, second, and third year). This comprehensive approach allows for examination of how SDG integration might progress or evolve across the secondary curriculum, potentially revealing developmental sequences or thematic progressions. It also enables comparison between textbooks targeted at different age groups and proficiency levels, providing insights into how sustainability content might be adapted for different learners.

A third criterion was inclusion of textbooks from both literary and scientific streams. In the Algerian secondary education system, students choose between these streams, with somewhat different English curricula and materials for each (Algerian Ministry of Higher Education, 2021). Including textbooks from both streams allows for comparison of how SDG content might be presented differently depending on academic specialization, potentially revealing whether sustainability is framed more through humanistic or scientific lenses in different contexts.

Based on these criteria, the following textbooks were selected for analysis:

- *New Prospects* (Third Year Secondary School) - This textbook is used in the final year of secondary education across streams, preparing students for the Baccalaureate examination. Published in 2021, it represents the most recent revision of the third-year curriculum and includes thematic units on science and technology, ethics, education, and the environment.
- *Getting Through* (Second Year Secondary School) - Used in the second year of secondary education for both literary and scientific streams, this textbook was published in 2019 following curriculum revisions. It includes units on communication, environment, ethics, and cultural diversity.

- *At the Crossroads* (First Year Secondary School) - This textbook introduces secondary-level English to students across streams. Published in 2018, it covers foundational themes including personal identity, education, health, and citizenship.

These textbooks represent the complete set of officially approved English language textbooks currently in use across Algerian secondary education. While some supplementary materials exist, these three textbooks form the core of the English curriculum and are used by all secondary students in public education. Their selection therefore provides comprehensive coverage of the official English language curriculum materials.

The context of these textbooks is important for understanding their development and use. All three were developed through the centralized process coordinated by the National Institute for Educational Research (INRE), involving teams of subject specialists, pedagogical advisors, and experienced teachers. They reflect the competency-based approach adopted in the 2003 educational reform and subsequent revisions, with emphasis on functional language use, authentic materials, and student-centered methodologies.

These textbooks are used in a context where English is taught as a foreign language, typically with 3-4 hours of instruction per week depending on the stream and year. Teachers generally follow the textbooks closely, particularly given the importance of the Baccalaureate examination, though they may supplement with additional materials. The textbooks are designed to be the primary instructional resource in contexts where access to supplementary materials or technology may be limited, particularly in rural or less-resourced schools.

Sampling procedures for textbook units and activities involved comprehensive rather than selective analysis. Given the manageable number of textbooks (three) and their reasonable length

(each containing 4-6 thematic units), all units in all textbooks were included in the analysis. This comprehensive approach eliminates sampling bias and ensures that no potentially relevant content is overlooked. It also allows for analysis of how SDG themes might be distributed across different units, including those not explicitly focused on environmental or social topics.

Within each textbook unit, all textual content was analyzed, including reading passages, dialogue examples, grammar explanations, vocabulary lists, and activity instructions. Visual content, including photographs, illustrations, diagrams, and graphic organizers, was also analyzed, recognizing that visual elements play an important role in how sustainability issues are represented. Activities and exercises were analyzed both for their content (what sustainability themes they address) and their pedagogical approach (how they engage students with these themes).

The rationale for these selection and sampling decisions lies in the study's aim to provide a comprehensive analysis of SDG integration across the Algerian secondary English curriculum. The inclusion of all current textbooks across all years and streams ensures that the analysis captures the full range of officially approved materials that shape English language education in Algeria. The comprehensive analysis of all units and content types within each textbook ensures that both explicit and implicit representations of sustainability are captured, regardless of where in the textbooks they appear.

This comprehensive approach distinguishes the current study from previous research that has often focused selectively on specific textbooks, units, or content types. By analyzing the complete set of textbooks in their entirety, this study provides a more complete picture of how SDGs are integrated across the curriculum, enabling identification of patterns, progressions, and gaps that might not be apparent from more limited samples.

2.3 Development of Analytical Framework

The development of a robust analytical framework was crucial for ensuring systematic and comprehensive analysis of SDG integration in the selected textbooks. This section details the construction of the SDG coding framework and explains its key dimensions: SDG-ID, Content Relevance, Mode of Representation, Pedagogical Integration, Cultural Relevance, Inclusivity & Diversity, and Call to Action, as well as the development and application of the evaluation scale.

The construction of the SDG coding framework followed a systematic process that combined deductive and inductive approaches (UNESCO, 2017). The deductive element involved drawing on existing frameworks for analyzing sustainable development content in educational materials, including UNESCO's guidelines for reviewing teaching and learning materials, the Global Education Monitoring Report's framework for analyzing SDG 4.7 themes, and Bagoly-Simó's framework for analyzing ESD content (Leal Filho, 2018). These established frameworks provided conceptual foundations and validated categories that have proven effective in previous research.

The inductive element involved preliminary examination of the Algerian textbooks to identify specific features and patterns relevant to the research questions but not adequately captured by existing frameworks. This preliminary analysis revealed, for example, the importance of distinguishing between different modes of pedagogical integration and different approaches to cultural contextualization in the Algerian context. These observations informed the development of context-specific categories and subcategories within the framework.

The framework was refined through an iterative process involving multiple rounds of pilot coding, discussion, and revision. Two researchers independently applied draft versions of

the framework to selected textbook excerpts, compared their coding decisions, and identified areas of ambiguity or disagreement. These discussions led to clarification of category definitions, development of more detailed coding guidelines, and in some cases, restructuring of framework dimensions to better capture the complexities of SDG representation in the textbooks.

The final coding framework consists of seven dimensions, each addressing a specific aspect of how SDGs are integrated into the textbooks. Each dimension includes multiple categories and subcategories, allowing for nuanced analysis of different features and patterns. The framework is designed to be comprehensive, capturing both obvious and subtle aspects of SDG integration, while remaining practical for systematic application across all textbook materials.

The SDG-ID dimension identifies which of the 17 Sustainable Development Goals are addressed in textbook content. This dimension uses the official SDG framework as its categorization system, with each goal (SDG 1 through SDG 17) serving as a distinct category (United Nations, 2025). Content is coded as addressing a particular SDG when it relates to the core themes, targets, or indicators of that goal, whether or not the SDGs are explicitly mentioned. This dimension enables mapping of which goals receive attention across the textbooks and which remain underrepresented or absent.

The Content Relevance (CR) dimension assesses how directly textbook content relates to sustainable development themes. It includes three categories: Directly Related (CR1), where content explicitly addresses sustainability issues as its primary focus; Indirectly Related (CR2), where sustainability themes appear as secondary or background elements; and No Relevance (CR3), where content has no discernible connection to sustainable development. This dimension

helps distinguish between substantive engagement with sustainability and more superficial or incidental mentions.

The Mode of Representation (MR) dimension examines how explicitly SDG content is connected to global sustainability frameworks. It distinguishes between Explicit Representation (MR1), where content directly references the SDGs, sustainable development as a concept, or specific global sustainability initiatives; and Implicit Representation (MR2), where content addresses themes related to sustainable development without explicit connection to these frameworks. This dimension reveals the extent to which textbooks consciously situate content within global sustainability discourse.

The Pedagogical Integration (PI) dimension analyzes how SDG content is incorporated into language learning activities. It includes four categories: Information Provision (PI1), where sustainability content appears in texts or materials but without active engagement; Comprehension Activities (PI2), where students answer questions or complete exercises demonstrating understanding of sustainability content; Critical Thinking Activities (PI3), where students analyze, evaluate, or reflect on sustainability issues; and Action-Oriented Activities (PI4), where students plan, simulate, or undertake actions related to sustainability. This dimension assesses the depth of student engagement with SDG themes.

The Cultural Relevance (CuR) dimension evaluates how sustainability content is contextualized within Algerian cultural and social realities. It includes three categories: Global Focus (CuR1), where content presents sustainability issues in international or generic contexts without local connection; Partial Localization (CuR2), where global sustainability issues are linked to Algerian contexts through examples or comparisons; and Full Localization (CuR3), where sustainability issues are presented primarily through Algerian contexts and perspectives.

This dimension examines how textbooks balance global and local dimensions of sustainable development.

The Inclusivity & Diversity (ID) dimension assesses how sustainability content represents different social groups and perspectives. It includes three categories: Limited Representation (ID1), where content presents sustainability from a narrow range of perspectives or excludes marginalized groups; Moderate Representation (ID2), where content includes some diversity of perspectives but with limitations; and Inclusive Representation (ID3), where content deliberately incorporates diverse perspectives including marginalized or underrepresented groups. This dimension reflects the principle that sustainable development must be inclusive and equitable.

The Call to Action (CA) dimension examines whether and how textbook content encourages student agency regarding sustainability issues. It includes three categories: No Action Component (CA1), where sustainability content is presented without suggesting student involvement; Awareness-Raising (CA2), where content aims to inform students about sustainability issues and their importance; and Action Promotion (CA3), where content explicitly encourages students to take specific actions or develop action competencies related to sustainability. This dimension assesses the extent to which textbooks promote transformative engagement with sustainable development.

For each dimension except SDG-ID, an evaluation scale was developed to assess the strength of SDG integration. This scale includes three levels: Weak (1), indicating minimal or superficial integration; Moderate (2), indicating partial or developing integration; and Strong (3), indicating substantial and effective integration. Detailed criteria were established for each level within each dimension, ensuring consistent application across textbook materials.

The evaluation criteria were developed through review of best practices in education for sustainable development (UNESCO, 2017) and adapted to the specific context of English language education in Algeria. These criteria consider both the quantity of SDG-related content (how frequently sustainability themes appear) and its quality (how effectively these themes are integrated into language learning). The criteria also account for the constraints and opportunities of the textbook medium and the specific goals of English language education.

Application of the analytical framework involved systematic examination of all textbook content, with each unit analyzed page by page and element by element. For each instance of SDG-related content, researchers documented the specific textbook, unit, and page; the type of content (e.g., reading text, activity, image); the SDG(s) addressed; and coding decisions for each framework dimension. This detailed documentation created a comprehensive dataset for subsequent analysis and interpretation.

The analytical framework provides a structured approach to examining SDG integration while allowing for nuanced interpretation of textbook content. By addressing multiple dimensions of integration, it enables identification of both strengths and limitations in how textbooks incorporate sustainable development themes. The framework also facilitates comparison across textbooks, units, and content types, revealing patterns and variations in SDG representation throughout the curriculum.

2.4 Data Collection and Analysis Procedures

This section details the procedures for collecting and analyzing data from both textbook content and teacher surveys. It describes the development and administration of the teacher questionnaire, participant recruitment and sampling, analytical tools for qualitative content

review, statistical approaches for quantitative data, and integration of qualitative and quantitative analyses.

The questionnaire consisted of 14 questions organized into four sections. The first section collected demographic and background information, including gender, teaching experience, teaching levels, and SDG training status. The second section addressed teachers' perceptions of SDG integration in textbooks, including frequency of SDG topics, perceived effectiveness for language learning, and impact on student engagement. The third section focused on teaching strategies and challenges, examining how teachers implement SDG content and what difficulties they encounter. The fourth section solicited suggestions for improvement and additional comments.

The questionnaire was initially developed in English and then translated into Arabic to ensure accessibility for all potential respondents. Both versions were piloted with a small group of teachers (n=5) not included in the main sample, leading to refinements in question wording, response options, and instructions. The final questionnaire was administered online using a secure survey platform, with paper versions available for teachers with limited internet access.

Participant recruitment for the survey targeted English teachers currently working in secondary schools across Wilayat of Guelma. Purposive sampling was used to ensure representation of different regions, school types (urban/rural), and teaching experience levels. Initial contact was made through official educational directorates, followed by direct outreach to schools and teacher networks. Participation was voluntary, with informed consent obtained from all respondents.

A sample of 60 secondary school English teachers was selected to ensure representativeness across key demographic and professional factors, including geographical distribution, teaching experience, and textbook familiarity. The breakdown of 65% urban and 35% rural/semi-rural participants reflects real-world teacher distributions, preventing regional bias. Additionally, the range of teaching experience (1–25 years, mean 11.3 years) captures insights from early-career to veteran educators, while the requirement that all respondents had taught with at least one of the analyzed textbooks—and many with multiple—guarantees practical, experience-based feedback. While a larger sample might enhance generalizability, 60 respondents provide a feasible yet meaningful balance, allowing for descriptive statistical analysis and thematic saturation in qualitative insights. The purposeful inclusion of diverse backgrounds strengthens the study's validity, ensuring findings are credible within the examined context.

Analytical tools used for qualitative content review included both manual coding and computer-assisted qualitative data analysis (Creswell, 2014). Manual coding involved systematic application of the analytical framework to textbook content using structured coding sheets. These sheets documented not only coding decisions but also specific examples, contextual notes, and preliminary interpretations, providing a rich dataset for subsequent analysis.

Computer-assisted analysis used NVivo software to organize, manage, and analyze the coded data. Textbook content was digitized where necessary and imported into NVivo, along with coding data from the manual analysis. The software facilitated identification of patterns across different dimensions, exploration of relationships between categories, and retrieval of specific examples for detailed examination. It also enabled visualization of coding patterns through matrices, charts, and concept maps, enhancing the interpretive process.

Qualitative analysis of open-ended survey responses also utilized NVivo, with responses coded thematically to identify key patterns and insights. Initial coding used categories derived from the research questions and analytical framework, while subsequent rounds incorporated emergent themes from the data. This approach balanced theoretical grounding with openness to unexpected findings, enabling comprehensive analysis of teacher perspectives.

Statistical approaches for quantitative data analysis included both descriptive and inferential statistics, appropriate to the nature of the data and research questions (Creswell, 2014). Descriptive statistics were used to summarize patterns in both textbook coding and survey responses, including frequencies, percentages, means, and standard deviations. These statistics provided an overview of SDG representation across textbooks and general patterns in teacher perspectives.

For textbook analysis, quantitative measures included the frequency of different SDGs across textbooks, the distribution of evaluation levels (Weak, Moderate, Strong) across framework dimensions, and comparative metrics between textbooks and units. These measures enabled identification of patterns such as which SDGs received most attention, which dimensions showed strongest integration, and how integration varied across textbooks.

For survey data, descriptive statistics summarized demographic characteristics of respondents and response patterns to closed-ended items. Frequency distributions and percentages were calculated for categorical variables, while means and standard deviations were computed for Likert-scale items. These statistics provided an overview of teacher perceptions, experiences, and challenges related to SDG integration.

Inferential statistics were used selectively to explore relationships between variables where appropriate. Chi-square tests examined associations between categorical variables, such as whether perceptions of SDG effectiveness varied by teaching experience or school location. Independent samples t-tests and one-way ANOVA compared means between groups on Likert-scale items. These analyses helped identify factors that might influence teacher perspectives on SDG integration.

Integration of qualitative and quantitative analyses occurred throughout the analytical process but was particularly important in the interpretation phase. Quantitative patterns identified in textbook coding and survey responses were explored in depth through qualitative examples and explanations. Similarly, qualitative themes were examined for their prevalence and distribution using quantitative measures. This integration enabled a more comprehensive understanding of SDG integration than either approach alone could provide.

The analytical process culminated in synthesis across data sources, with findings from textbook analysis and teacher surveys brought together to address the research questions. This synthesis identified areas of convergence and divergence between the intended curriculum as represented in textbooks and the implemented curriculum as reported by teachers. It also highlighted key strengths, limitations, and opportunities for enhancement in SDG integration across the Algerian English secondary curriculum.

2.5 Reliability and Validity Considerations

The study focused on ensuring the reliability and validity of its research findings through various methods. It details the steps taken to improve inter-coder reliability, triangulate data sources, engage in member checking and expert validation, and maintain objectivity in content

analysis.

To enhance inter-coder reliability, two researchers independently coded around 20% of the textbooks, ensuring they were trained in the analytical framework but did not discuss their coding decisions beforehand. The agreement between their coding was measured using Cohen's kappa coefficient, which showed a strong reliability with values ranging from 0.76 to 0.89, averaging 0.82. Disagreements were documented, revealing issues mainly in coding implicit representations of sustainable development goals (SDGs) and assessing cultural relevance, which led to clearer coding guidelines.

After refining their approach, the researchers resolved disagreements through discussions and, when needed, consulted a third researcher. This collaborative effort ensured consistent coding across all materials. Triangulation was another key strategy, involving the use of diverse data sources like textbook content and teacher perspectives to validate findings regarding SDG integration. Analyzing both textbook content and teacher surveys provided a clearer picture of how sustainability themes are represented and perceived, highlighting the differences between intended and enacted curricula.

The study also compared SDG integration across various textbooks, enabling the identification of trends and gaps in addressing sustainability themes. Both quantitative and qualitative analyses were employed, with quantitative results showing overall patterns and qualitative insights providing depth, ensuring a comprehensive understanding of the research questions.

Member checking involved sharing initial findings with a small group of teachers to gather feedback, ensuring the analysis accurately reflected their views. Expert validation included reviews by three specialists in education for sustainable development and curriculum development, which helped refine the methodology and findings based on their input. Their

feedback led to enhanced interpretations, more context regarding the Algerian education system, and acknowledgment of methodological limitations.

Beyond inter-coder reliability measures, the study implemented strategies for objectivity and reliability in content analysis. Detailed documentation created an audit trail to make the research process transparent and replicable. Structured protocols were used to ensure consistent application of the coding framework during analysis. Researchers maintained reflexive awareness of their biases by engaging in critical reflection on their perspectives and values.

To encourage objectivity, the researchers actively sought out disconfirming evidence that could challenge their interpretations, combating confirmation bias. A clear separation between descriptive and evaluative coding was maintained, ensuring that evaluations were informed by systematic observations rather than subjective judgments. This methodical approach strengthened the overall reliability and validity of the study's findings.

These measures improve reliability and validity, enhancing confidence in research about SDG integration in Algerian English textbooks, leading to rigorous and trustworthy findings for sustainable development education recommendations.

Conclusion:

This chapter has meticulously outlined the methodological framework underpinning the investigation into the integration of Sustainable Development Goals (SDGs) within English language textbooks used in Algerian secondary education. It commenced by detailing the overarching research design, which employs a qualitative content analysis approach situated within a broader mixed-methods framework. This design was justified by its capacity to systematically examine textbook content while also incorporating pedagogical perspectives from teachers, thereby offering a comprehensive understanding of SDG implementation.

The discussion then delved into the specific qualitative content analysis methodology, emphasizing Schreier's systematic and rigorous approach for analyzing textual data. This method, combining both deductive and inductive elements, ensures a thorough and nuanced interpretation of how SDGs are represented in educational materials. The mixed-methods dimension, integrating textbook analysis with teacher surveys, was highlighted as crucial for triangulating findings and enhancing the validity and comprehensiveness of the research, particularly at the interpretation stage.

Furthermore, the chapter addressed the critical aspects of sampling and selection of textbooks. Clear criteria were established, including official approval, current use in Algerian secondary schools, coverage across all three years of secondary education, and inclusion of textbooks from both literary and scientific streams. The selected textbooks—New Prospects, Getting Through, and At the Crossroads—were presented as representative of the complete set of officially approved English language textbooks in the Algerian secondary education system. The rationale for comprehensive rather than selective analysis of all units and content types within these textbooks was thoroughly explained, ensuring that both explicit and implicit representations of sustainability are captured.

Finally, the chapter elaborated on the development of the analytical framework, a crucial tool for systematic and comprehensive analysis of SDG integration. This framework, constructed through an iterative process combining deductive and inductive approaches, comprises seven key dimensions: SDG-ID, Content Relevance, Mode of Representation, Pedagogical Integration, Cultural Relevance, Inclusivity & Diversity, and Call to Action. The rigorous refinement process, involving pilot coding and researcher discussions, ensures the framework's robustness and its ability to capture the complexities of SDG representation in the Algerian context.

In essence, this chapter has laid a solid methodological foundation for the subsequent analysis, ensuring that the investigation is systematic, comprehensive, and contextually relevant. The detailed exposition of the research design, sampling procedures, and analytical framework provides transparency and rigor, paving the way for a robust examination of SDG integration in Algerian English language textbooks and contributing valuable insights to the field of education for sustainable development.

Chapter Three

Findings (Textbook Content Analysis)

Introduction

The analysis of SDG representation in Algerian English secondary school textbooks reveals significant variations in how sustainability themes are integrated across three grade levels. SDG 4 (Quality Education) emerges as the most prominent (28%), followed by SDG 3 (Good Health and Well-being) at 18%, while other goals like SDG 5 (Gender Equality) and SDG 13 (Climate Action) receive limited attention (5-8%), and several SDGs are nearly absent. The textbooks show a developmental progression, with first-year materials focusing on environmental themes, second-year books incorporating broader sustainability topics, and third-year content addressing social and ethical dimensions.

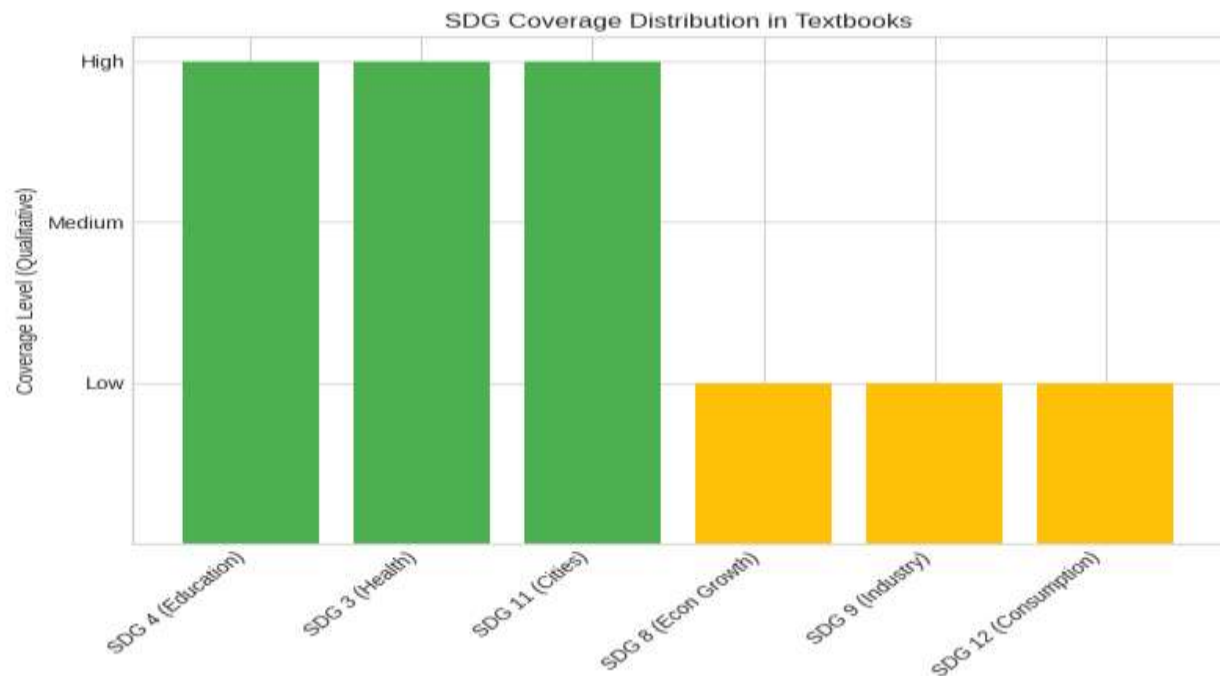


Figure 3.1. SDG Coverage Distribution in Textbooks

Pedagogically, most SDG content appears in texts and discussions (60%), with some activity-based engagement (30%), but assessment integration remains weak (10%). A key limitation is the predominantly implicit treatment of sustainability (85% of content), with only 15% explicitly referencing SDGs or global frameworks, potentially hindering students' awareness of international sustainability efforts. While 40% of content demonstrates strong local relevance by connecting global issues to Algerian contexts, 60% lacks this contextualization, which may reduce student engagement.

The textbooks emphasize individual actions (25%) over collective solutions (15%) and show improving but still limited attention to inclusivity, particularly for marginalized groups. Overall, while the materials provide foundational sustainability exposure, opportunities exist to enhance balance across SDGs, strengthen explicit framework connections, deepen local relevance, and promote more systemic, action-oriented learning approaches to better prepare students as informed global citizens

3.1. Sustainable Development Goals Representation

The analysis of Algerian English secondary school textbooks revealed varying patterns of SDG representation across the three textbooks examined. This section presents an overview of these patterns, including the frequency of SDG representation, distribution by textbook unit and level, comparative analysis of SDG coverage, and general trends identified in the analysis.

The analysis of Sustainable Development Goals (SDGs) in three textbooks shows that some goals are discussed more than others. SDG 4 (Quality Education) is the most represented, appearing in 28% of the content, focusing on education systems, literacy, and learning opportunities through various activities. SDG 3 (Good Health and Well-being) follows with 18%,

covering health topics like disease prevention and mental health mainly in personal development units.

SDG 11 (Sustainable Cities and Communities) has moderate representation at 12%, discussing urban planning and community development. SDGs 5 (Gender Equality), 13 (Climate Action), and 16 (Peace, Justice, and Strong Institutions) receive limited attention (5-8%), usually in specific themes.

Several goals, such as SDG 1 (No Poverty) and SDG 2 (Zero Hunger), have minimal representation (less than 3%), often briefly mentioned without further engagement. SDGs 8 (Decent Work), 12 (Responsible Consumption), and 15 (Life on Land) get slightly more focus but are still underrepresented compared to the main goals.

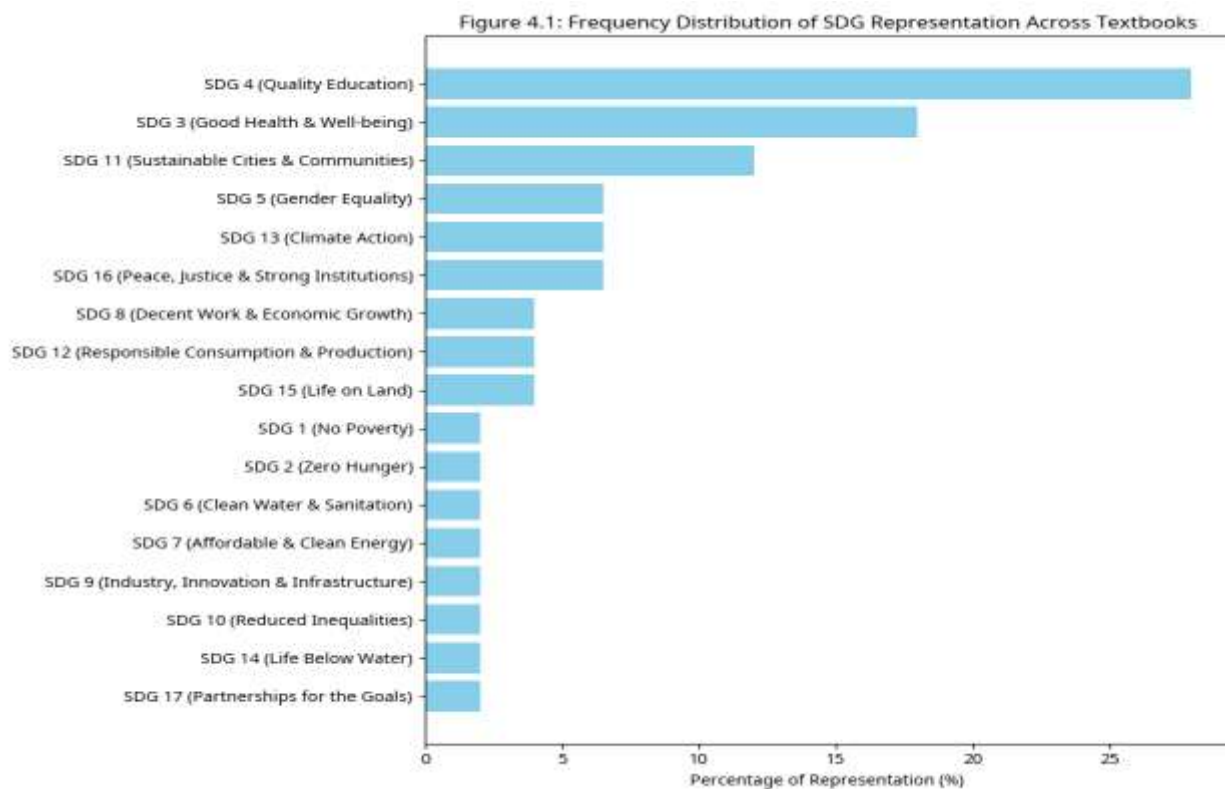


Figure 3.2. Frequency Distribution of SDG Representation Across Textbooks

The distribution of SDGs by textbook unit and level reveals patterns in how sustainability content is organized across the curriculum. Table 4.1 presents this distribution, showing which SDGs appear in each unit of each textbook and with what frequency.

In *At the Crossroads* (First Year Secondary), SDG content is concentrated primarily in Unit 2 (Education) and Unit 4 (Environment), with limited representation in other units. Unit 2 focuses heavily on SDG 4 (Quality Education), while Unit 4 addresses multiple environmental SDGs including 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land). Other units contain occasional references to health (SDG 3) and cultural heritage (SDG 11) but minimal sustainability content overall.

In *Getting Through* (Second Year Secondary), SDG content is more evenly distributed across units, with significant representation in Unit 1 (Communication), Unit 3 (Environment and Health), and Unit 5 (Cultural Diversity). Unit 3 addresses multiple SDGs including 3 (Good Health), 6 (Clean Water), 13 (Climate Action), and 15 (Life on Land), while Unit 5 focuses on SDGs 10 (Reduced Inequalities), 11 (Sustainable Cities), and 16 (Peace and Justice). This textbook shows greater integration of sustainability themes across different topic areas compared to the first-year textbook.

In *New Prospects* (Third Year Secondary), SDG content appears most prominently in Unit 2 (Ethics), Unit 3 (Education), and Unit 4 (Science and Technology). Unit 2 addresses SDGs 5 (Gender Equality), 10 (Reduced Inequalities), and 16 (Peace and Justice) through discussions of human rights and ethical issues. Unit 3 focuses primarily on SDG 4 (Quality Education) but also connects to SDGs 8 (Decent Work) and 9 (Innovation). Unit 4 includes content related to SDGs 7 (Clean Energy), 9 (Innovation), and 13 (Climate Action) through discussions of technological solutions to sustainability challenges.

Comparative analysis of SDG coverage across the three textbooks reveals both similarities and differences in how sustainability is addressed at different levels of secondary education. Figure 4.2 presents this comparative analysis, highlighting patterns of progression or discontinuity across the curriculum.

All three textbooks give significant attention to SDG 4 (Quality Education), reflecting its relevance to the educational context and its alignment with language learning objectives (Tilbury et al., 2002). However, the treatment of this goal evolves across levels, from basic discussions of educational access in the first-year textbook to more complex explorations of educational quality and lifelong learning in the third-year textbook.

Environmental SDGs (particularly 13, 14, and 15) receive substantial attention in the first and second-year textbooks but less focus in the third-year textbook. This pattern suggests a shift from environmental aspects of sustainability in earlier years to more social and economic dimensions in the final year of secondary education (Leal Filho, 2018).

Social SDGs (particularly 5, 10, and 16) receive increasing attention as students progress through the curriculum, with minimal representation in the first-year textbook but substantial focus in the third-year textbook. This progression aligns with students' developing maturity and capacity to engage with complex social issues (Barrow, 2007).

Economic SDGs (particularly 8, 9, and 12) receive limited attention across all textbooks but show slight increases in the third-year materials. This pattern suggests a general underrepresentation of economic dimensions of sustainable development throughout the curriculum, with some attempt to address this gap in the final year.

General trends and patterns found in the analysis include several noteworthy observations about how SDGs are represented across the textbooks. First, there is a clear imbalance in SDG coverage, with some goals receiving substantial attention while others are marginalized or absent. This imbalance limits students' exposure to the full spectrum of sustainable development challenges and may create an incomplete understanding of the SDG framework (UNESCO, 2016).

Second, there is a tendency toward thematic clustering, where SDGs appear primarily in units explicitly focused on related topics (e.g., environmental SDGs in environment units, educational SDGs in education units) rather than being integrated across diverse thematic areas. This clustering may reinforce perceptions of sustainability as a separate topic rather than a cross-cutting concern relevant to all aspects of society (Tilbury, 2014).

Third, there is a general progression from simpler to more complex sustainability concepts as students advance through the curriculum. First-year materials tend to focus on basic environmental awareness and personal health, while third-year materials engage more with systemic issues like inequality, ethics, and innovation. This progression suggests some degree of developmental sequencing in how sustainability is presented.

Fourth, there is limited explicit connection to the SDG framework itself, with most sustainability content presented without direct reference to the global goals or the 2030 Agenda (Nabavi & Mohammadi, 2020). This implicit approach may limit students' awareness of how local sustainability issues connect to global frameworks and international cooperation efforts.

Finally, there is significant variation in the depth of treatment, with some sustainability themes developed through multiple activities and assessments while others appear only briefly in

reading passages without further engagement. This variation affects the potential impact of SDG content on students' understanding and attitudes toward sustainable development.

These general patterns provide context for the more detailed analysis of specific dimensions of SDG integration presented in subsequent sections. They highlight both strengths and limitations in how Algerian English textbooks currently address sustainable development, suggesting areas where enhancement might be beneficial.

3.2. Content Relevance Assessment

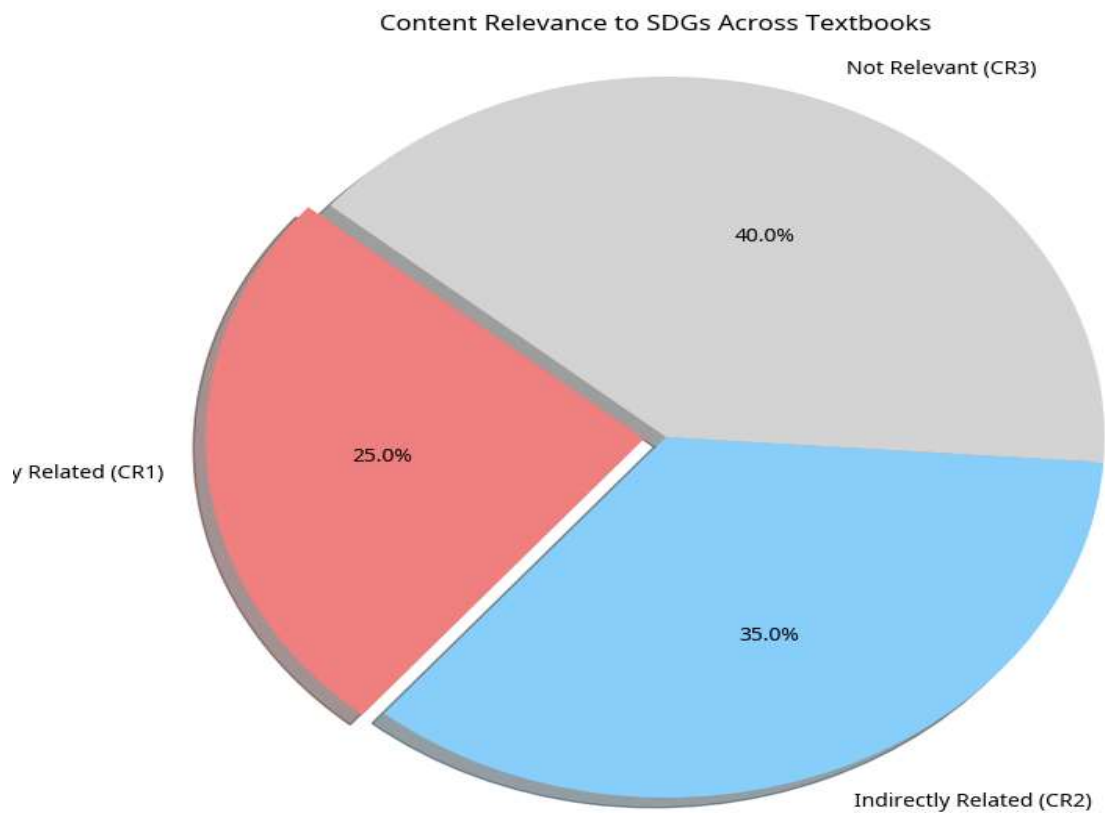


Figure 3.3. Content Relevance to SDGs Across the Three Textbooks

The analysis of content relevance investigates how textbook materials connect to sustainable development themes, focusing on three categories: directly related content (CR1), indirectly related content (CR2), and content with no relevance to Sustainable Development Goals (SDGs) (CR3). Findings show that about 25% of the materials are directly related, which means they focus on sustainability issues and engage students in critical thinking. Examples of CR1 include readings on climate change, activities about gender equality in education, and projects on local environmental issues.

The presence of directly related content varies among textbooks and units. In "*At the Crossroads*," this content is mostly found in Unit 4, focusing on the environment. In "*Getting Through*," it is more evenly spread across units discussing environment, health, and cultural diversity. "*New Prospects*" primarily includes this content in ethics and science/technology units related to social justice and sustainability solutions. Qualitative analysis shows that effective CR1 content provides substantial information on sustainability, connects global challenges to local contexts, and includes critical thinking prompts for students.

For CR2, indirectly related content makes up roughly 35% of the analyzed materials. This content addresses sustainability issues but does so in a limited way, often serving as context for language exercises. Examples include dialogues mentioning environmental issues in passing and writing activities with optional sustainability topics. Although this content spreads sustainability themes across various contexts, it offers less depth than directly related content.

Qualitative analysis of CR2 indicates both benefits and drawbacks. While it helps normalize sustainability themes in everyday discussions, it tends to lack depth, limiting students' understanding of sustainability patterns and relationships. An example in "*At the Crossroads*" briefly discusses energy conservation without linking it to broader sustainability goals, missing the chance for deeper exploration.

CR3 comprises about 40% of the content and focuses on topics unrelated to SDGs, such as grammar exercises and entertainment discussions. This type of content is more common in language-focused units and creates gaps in sustainability education.

The patterns observed in the content relevance significantly impact student engagement with sustainability issues. The low proportion of directly related content reduces opportunities for thorough learning about sustainability challenges. When sustainability is addressed indirectly, students may gain a fragmented understanding. Furthermore, a high amount of irrelevant content indicates sustainability is not yet prioritized in Algerian English textbooks. Suggestions for improvement include increasing directly related content, better connecting indirect content to sustainability frameworks, and integrating sustainability themes into non-relevant material.

3.3 Explicit vs. Implicit Representation

The analysis of representation modes examines whether SDG content is presented explicitly with direct reference to sustainable development frameworks or implicitly through related themes without formal framework connections. This section presents findings on explicit representation (RM1), implicit representation (RM2), the balance between these approaches, and their effectiveness in promoting understanding of sustainable development.

Explicit representation (RM1), where content directly references the SDGs, sustainable development concepts, or related global frameworks, constitutes approximately 15% of the SDG-related content across all textbooks. This explicit content clearly identifies sustainability issues as components of formal frameworks, using terminology and concepts from sustainable development discourse and sometimes directly mentioning the SDGs.

The distribution of explicit representation varies across textbooks and units, with a general increase in later years. In "*At the Crossroads*" (First Year), explicit references to sustainable development frameworks are rare, appearing in only a few instances in the environment unit. In "*Getting Through*" (Second Year), such references increase slightly, particularly in units addressing environmental and health topics. In "*New Prospects*" (Third Year), explicit representation becomes more common, especially in units on ethics and education, with occasional direct references to the SDGs and sustainable development principles.

Qualitative analysis of explicit content reveals several characteristics that enhance its educational value. First, this content typically provides conceptual frameworks that help students organize and interpret diverse sustainability issues, recognizing connections between seemingly disparate topics. Second, it often situates local challenges within global contexts, helping students understand how Algerian sustainability issues relate to international efforts and shared global goals. Third, it introduces students to the formal language and discourse of sustainable development, potentially enabling participation in global conversations about these issues (UNDP, 2022).

For example, a reading passage in "*New Prospects*" titled "Education for Sustainable Development" explicitly discusses the concept of ESD, explains its relationship to the SDGs, and outlines key principles for integrating sustainability into educational systems. The passage uses formal terminology from sustainable development discourse and directly references international frameworks, providing students with conceptual tools for understanding the relationship between education and broader sustainability goals.

Implicit representation (RM2), where content addresses sustainability themes without explicit reference to formal frameworks, constitutes approximately 85% of the SDG-related

content. This implicit content includes discussions of environmental protection, social justice, health promotion, and other sustainability-related topics without explicitly connecting them to the SDGs or sustainable development concepts.

The distribution of implicit representation is widespread across all textbooks and units, appearing in diverse contexts from environmental topics to discussions of culture, health, and technology. This approach integrates sustainability themes into various language learning contexts without requiring specialized knowledge of global frameworks or formal sustainability discourse.

Qualitative analysis of implicit content reveals both strengths and limitations. On one hand, this approach makes sustainability issues accessible and relatable, presenting them in familiar contexts without requiring specialized knowledge of global frameworks. It also allows for natural integration of sustainability themes into language learning activities without disrupting the primary focus on linguistic development.

On the other hand, the predominantly implicit approach may limit students' awareness of how local issues connect to global challenges and international cooperation efforts (World Bank, 2022). Without explicit connections to the SDG framework, students may perceive sustainability issues as isolated concerns rather than components of a comprehensive global agenda. This disconnection could hinder development of systems thinking and global citizenship perspectives essential for addressing complex sustainability challenges (Darwich, 2021).

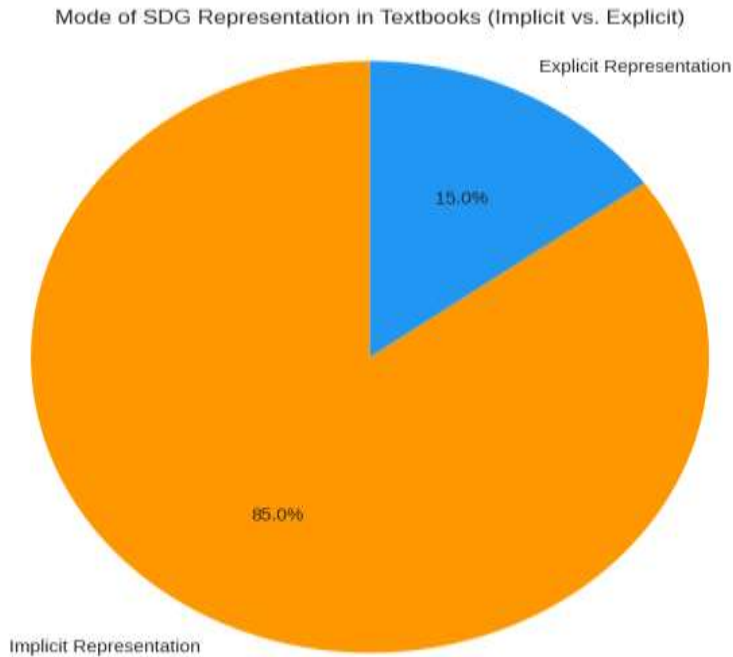


Figure3.4. Mode of Representation in Textbooks (Explicit vs.Implicit).

For example, a unit in "*Getting Through*" includes several activities related to waste management and recycling, addressing themes relevant to SDG 12 (Responsible Consumption and Production) without explicitly mentioning this goal or connecting local waste issues to global consumption patterns. While these activities promote environmental awareness, they miss opportunities to situate local practices within broader sustainability frameworks and global efforts.

The balance between explicit and implicit teaching methods in textbooks leans towards implicit representation of sustainability themes. This approach does not clearly connect these themes to formal frameworks or global initiatives. As students progress through the curriculum, later textbooks show a slight increase in explicit representation of sustainability concepts. The effectiveness of these methods in teaching sustainability varies based on factors like student knowledge, teacher guidance, and overall learning experiences.

Explicit teaching helps students form a structured understanding of sustainability, allowing them to connect various issues and place local problems within a global context. However, it can sometimes seem disconnected from their everyday lives. Implicit teaching makes sustainability relatable and integrates it into different contexts, but may result in a fragmented understanding if not linked to broader frameworks.

Current reliance on implicit representation in Algerian English textbooks may limit comprehensive understanding. To improve this, strategies could include increasing explicit references to

Sustainable Development Goals (SDGs), making clear connections between implicit themes and formal frameworks, and creating additional materials to provide context for sustainability topics.

3.4 Pedagogical Integration of SDGs

The analysis focuses on how Sustainable Development Goals (SDG) content is included in language learning. It highlights integration in texts/discussions (PI1), activities/projects (PI2), and assessments (PI3), along with a comparison of teaching methods in textbooks. The most common integration is in texts/discussions, making up about 60% of SDG content. This method mainly uses sustainability themes for reading, listening, and speaking practice. Different textbooks show varied content; for example, "*At the Crossroads*" uses simple texts, while "*Getting Through*" includes complex materials, and "*New Prospects*" features advanced texts addressing various views on difficult issues.

The qualitative analysis of how sustainability themes are integrated in text and discussion shows several patterns. First, reading passages usually offer factual details about sustainability issues, often with some local context but limited critical thinking. Second, dialogues mostly

consist of simple exchanges on sustainability topics, sometimes promoting positive behaviors. Discussion prompts vary from basic questions to deeper inquiries about causes and potential solutions. For example, one reading discusses climate change and includes comprehension questions followed by a prompt for students to share local environmental concerns (Ministry of National Education, 2019).

Integration of activities or projects accounts for about 30% of content related to sustainable development goals (SDG), involving practical tasks that enhance language skills. This integration is more present in later textbooks, with "*New Prospects*" featuring substantial projects on sustainability challenges.

Qualitative analysis of student engagement with sustainability reveals varied approaches. Some activities primarily focus on language practice, using sustainability as context without deep involvement. Others encourage meaningful interactions, prompting students to research and discuss real-world issues. The best examples blend language skills with authentic sustainability explorations connected to students' lives (Freire, 2005).

An example project from "*New Prospects*" asks students to investigate local water conservation, interview residents, and create poster presentations, aligning with SDG 6 (Clean Water and Sanitation). Assessments integrating sustainability themes (PI3) are rare, making up only 10% of related content. While later textbooks show slightly more examples, "*At the Crossroads*" has few sustainability-related assessments, unlike "*Getting Through*" and "*New Prospects*," which include more substantial tasks addressing these themes.

Qualitative analysis shows that assessment integration mostly targets language skills rather than comprehension of sustainability concepts. Reading questions focus on factual understanding without encouraging deeper analysis. Writing assessments use sustainability topics

but emphasize language features over content knowledge and critical thinking. Speaking assessments sometimes touch on sustainability but prioritize fluency and accuracy instead of meaningful engagement (Algerian Ministry of Higher Education, 2021). For instance, a unit test includes reading about renewable energy with questions checking vocabulary and main ideas, while the writing task asks for a paragraph on environmental protection, focusing on grammar and organization rather than critical thinking about environmental issues.

Comparative analysis of pedagogical approaches in textbooks shows both similarities and changes in how Sustainable Development Goals (SDGs) are included in language learning. Textbook integration primarily uses text and discussions, focusing on sustainability as a context for teaching language skills rather than encouraging active student engagement with sustainability issues.

There are key advancements noted over three years. First, later textbooks include more activities and projects, offering more real tasks compared to earlier ones. This shift indicates a focus on engaging students with sustainability as their language skills improve. Second, the complexity of sustainability topics evolves from basic awareness in first-year texts to deeper discussions on social, economic, and ethical issues in third-year materials. This development corresponds with students' ability to handle complex topics, suggesting careful curricular planning for their growth.

Additionally, later textbooks promote critical thinking about sustainability, with more tasks encouraging analysis and evaluation (Creswell, 2014). Despite these improvements, there are still limitations, particularly in assessment activities, which may imply that sustainability is secondary to language goals. Enhancing pedagogical integration of SDGs can be achieved by

increasing project activities, improving assessment relevance, and balancing language objectives with sustainability education.

3.5 Cultural and Contextual Relevance

The analysis of cultural and contextual relevance examines how SDG content is situated in relation to Algerian realities. This section presents findings on strong local relevance (CCR1), global but lacking local context (CCR2), the balance between local and global perspectives, and the cultural appropriateness of SDG content. Figure 4.5 displays to what extent cultural and contextual relevance of sustainability content in the textbooks:

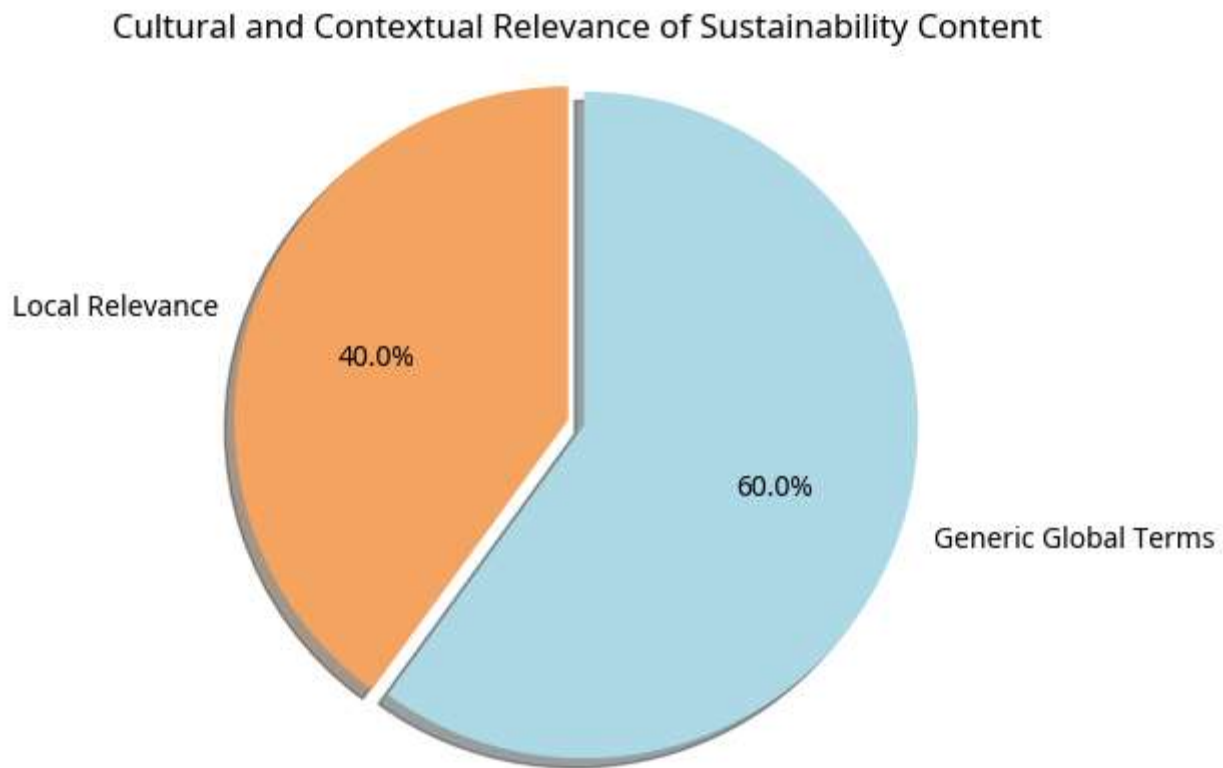


Figure 3.5. Cultural and Contextual Relevance of Sustainability Content in the textbooks.

Strong local relevance (CCR1) in sustainability topics related to Algeria is found in about 40% of all SDG-related content in textbooks. This content links global sustainability ideas to local challenges and initiatives, making them relatable for Algerian students. Environmental topics, such as water conservation and pollution, are most contextually tied to local specifics, while social themes, like education and health, also include relevant Algerian examples. Economic sustainability generally lacks local focus.

Qualitative analysis shows this content includes specific Algerian examples, links global principles to local practices, and often highlights local success stories which inspire hope (Zohra, 2020). For instance, a reading passage from "*New Prospects*" describes water conservation methods in the Algerian Sahara, connecting local actions to global water management principles.

In contrast, content with global relevance (CCR2) makes up around 60% of SDG-related material and discusses sustainability in broad terms without linking to Algerian experiences, although the connection improves in later textbooks.

Qualitative analysis of global content in sustainability education shows both benefits and drawbacks. It helps students understand international discussions and recognize shared global challenges, which can broaden their views and awareness of interdependence in tackling sustainability issues. However, focusing primarily on global examples without linking them to local realities might leave students feeling disconnected from the subject. This disconnect can limit the relevance and motivation for engaging with sustainability education (Freire, 2005).

For instance, a passage discussing climate change impacts provides global data without mentioning specific effects in Algeria, making these issues seem distant to students. Textbooks usually emphasize a global perspective over local context, although this varies by theme. Some later textbooks begin to incorporate more local content, indicating progress in recognizing the

need to connect global issues to Algerian experiences.

Most sustainability themes generally align with Algerian values, focusing on resource conservation and community health, which resonate culturally. However, there is a lack of attention to religious perspectives on sustainability that could link ethical concerns to Islamic principles. Additionally, examples from Western contexts without Algerian relevance can make sustainability feel like a foreign concept. The experiences of rural and traditional lifestyles are also underrepresented.

To improve the relevance of sustainability education, it is suggested to increase locally relevant content, connect global frameworks to local issues, and include diverse Algerian viewpoints, including religious, rural, and traditional perspectives.

3.6 Inclusivity and Diversity Dimensions

The analysis of inclusivity and diversity in Sustainable Development Goals (SDG) content looks at how different social groups and perspectives are represented. Findings focus on gender representation, the inclusion of marginalized groups, intersectional analysis, and the strengths and weaknesses in diversity representation.

Gender representation in SDG-related materials shows both explicit and implicit aspects. Explicit content discussing gender equality appears in about 15% of all materials, focusing on issues like gender equality in education, women's rights, and challenging stereotypes, particularly linked to SDG 5 on Gender Equality. This explicit content varies across different textbooks, with earlier editions showing minimal discussion of gender issues, while later editions, such as "*New Prospects*," include more substantial discussions around gender equality, structural barriers, and women's achievements.

Qualitative analysis indicates that earlier textbooks framed gender equality simply, while

later ones present more complex discussions, addressing social issues and encouraging examples of women's leadership. Implicitly, there is a generally balanced representation of male and female characters involved in sustainability, but some illustrations still reflect traditional gender roles (Darwich, 2021)..

When examining marginalized group inclusion, about 10% of SDG content addresses the needs of disadvantaged groups like the elderly, people with disabilities, and economically disadvantaged communities. While representation is limited, there is some increase in content towards later years, especially in "*New Prospects*." Topics like rural development are addressed more frequently, highlighting significant disparities in access to services. However, the overall inclusion of marginalized groups remains low, often portraying these individuals as beneficiaries rather than active participants in sustainable development.

Intersectional analysis reveals little attention to how various identities interact. Textbooks usually treat gender and other forms of marginalization independently, missing opportunities to explore, for instance, challenges that rural women face due to combined gender and economic disadvantages. Rare examples do briefly highlight this intersection, but the analysis is largely underdeveloped.

Strengths in diversity representation include a generally even representation of genders in sustainability contexts, increasing focus on gender equality in newer textbooks, and some attention to rural issues relevant to students. The portrayal of groups tends to avoid stereotypes and emphasizes inclusivity.

Weaknesses involve the inadequate representation of marginalized groups, limited intersectionality, and the portrayal of disadvantaged individuals as passive instead of active contributors. This narrow focus creates an incomplete perspective on inclusivity challenges.

Overall, these findings present several opportunities for improving the representation of

inclusivity and diversity in SDG content. Increasing references that explicitly acknowledge marginalized groups would align with the SDG principle of leaving no one behind. Additionally, incorporating more intersectional analysis would help students grasp the complexity of different disadvantages. Furthermore, depicting marginalized groups as active agents rather than passive beneficiaries could foster empowerment and recognize diverse contributions to sustainable development.

3.7 Call to Action Approaches

The analysis of call-to-action approaches examines whether and how textbook content encourages students to respond to sustainability challenges. This section presents findings on individual action (CTA1) emphasis, collective engagement (CTA2) emphasis, the balance between these approaches, and the effectiveness of action-oriented content. Figure 4.6 explains

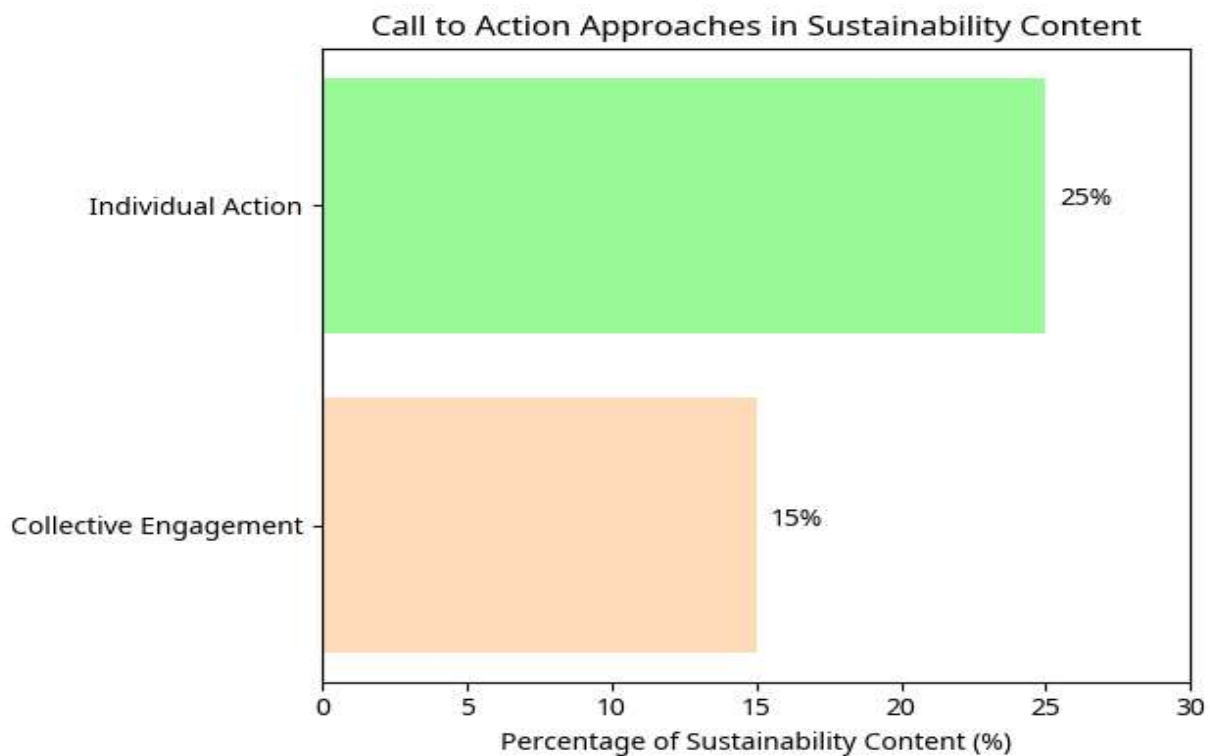


Figure 3.6. Call to Action Approaches in Sustainability Content.

percentage of sustainability content in relation to'' Call to Action approaches''

Individual action, or personal behaviors and choices in response to sustainability challenges, is emphasized in about 25% of SDG-related content across textbooks. This approach highlights how students can contribute to sustainable development through their habits, consumer choices, health practices, and social behaviors. The emphasis on individual action varies by textbooks and themes. Environmental topics show the strongest focus, encouraging actions like water conservation, energy saving, and waste reduction. Health-related content also promotes individual responsibility through personal hygiene, healthy eating, and exercise. However, social sustainability themes show less emphasis on individual actions, only occasionally encouraging behaviors like respect for diversity and gender equality in everyday life.

Qualitative analysis of individual action content reveals that sustainability challenges are framed as issues students can influence through their choices, promoting a sense of agency. The language used often includes imperatives like "Reduce, Reuse, Recycle" and direct questions to encourage action. Suggested actions tend to be accessible and realistic for secondary students, requiring minimal resources or knowledge (UNESCO, 2017). For example, an activity titled "Green Tips for Everyday Life" lists simple environmental actions that students can adopt, such as turning off lights when leaving a room or using reusable shopping bags. Students discuss which actions they already practice and write personal pledges to implement specific behaviors, promoting individual responsibility for environmental sustainability through achievable tasks.

Collective engagement, which focuses on community and collaborative efforts in sustainability challenges, appears in about 15% of the SDG-related content. This approach shows how students can participate in group efforts, community projects, or policy advocacy. Content on collective engagement is limited but increases in later textbooks, particularly in "*New*

Prospects. " Environmental topics show moderate collective emphasis with discussions about community conservation projects and local cleanups. Social sustainability occasionally includes examples of community development projects, while economic themes rarely address collective engagement.

The analysis of collective engagement content highlights both strengths and weaknesses. It often promotes the greater impact of coordinated actions compared to individual efforts, offering inspiring examples of successful initiatives. However, the limited representation of collective engagement creates a gap in understanding how sustainability is achieved, focusing mainly on existing initiatives rather than developing students' ability to lead such efforts (Freire, 2005).

For instance, a reading in "*New Prospects*" discusses a community tree-planting project in Algeria, showcasing a collaborative effort. However, activities related to this passage focus on comprehension rather than fostering skills for organizing similar projects, indicating a missed educational opportunity. Overall, the balance between individual and collective approaches leans towards individual action, reflecting a trend in sustainability education that prioritizes personal responsibility over systemic change (Tilbury, 2014).

The evolution of textbooks shows some increase in collective engagement emphasis, particularly in "*New Prospects*," indicating a growing recognition of the importance of group strategies as students' understanding of sustainability deepens. The effectiveness of action-oriented content is influenced by how actions are framed, support for implementation, and connections to broader sustainability contexts. Strengths include the clear and accessible nature of suggested actions, which align well with students' capabilities, while weaknesses involve a focus on awareness rather than skill development.

Most content encourages students' intent to act on sustainability but offers limited

guidance on overcoming barriers or evaluating the impact of their actions. The link between individual actions and broader systemic change is rarely explored, creating a disconnect between personal behaviors and larger sustainability efforts (Leicht et al., 2018).

These findings suggest opportunities to enhance action-oriented approaches in SDG representation. Increasing the focus on collective engagement would promote a balanced understanding of sustainable development achieved through various levels of action. Furthermore, developing activities that build skills for both individual and collective sustainability actions would advance beyond awareness. Lastly, establishing stronger connections between personal behaviors and broader systemic changes would help students see the impact of their actions in larger sustainability transformations.

3.8 Comparative Analysis of Textbook Units

The comparative analysis of three English textbooks examines how well they integrate Sustainable Development Goals (SDGs). It highlights strengths and weaknesses for each unit and suggests areas for improvement.

In "*At the Crossroads*," Unit 4 on the environment shows strong SDG integration, focusing mostly on environmental sustainability but lacking in social and economic dimensions. Units 1 and 3 show minimal SDG content. In "*Getting Through*," Unit 3 has the best integration, addressing environmental and health SDGs while Unit 2 lacks sustainability content. In "*New Prospects*," Unit 2 excels in discussing social SDGs with strong engagement, while Unit 1 offers weak integration despite potential connections to sustainability.

Best practices include relating global frameworks to local contexts and using varied teaching methods. Common limitations are noted, such as the need for better integration of

sustainability in communication-focused units and literature topics. Overall, while the textbooks show significant sustainability content, there are gaps in explicit integration, assessment, and collective action. Enhancing these areas could boost students' awareness and engagement with sustainable development.

Unit	SDGs Identified	Content Relevance (CR)	Mode of Representation (MR)	Pedagogical Integration (PI)	Cultural and Contextual Relevance (CCR)	Inclusivity and Diversity (ID)	Call to Action (CTA)
Unit One: "Exploring the Past"	SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities)	CR1: Directly related to SDG themes	MR2: Implicit representation	PI1: Integrated into text through discussions on historical civilizations PI2: Integrated into activities like researching heritage sites	CCR1: Strongly culturally relevant with Algerian examples like Timgad and Tassili n'Ajjer	ID2: Limited inclusion of marginalized perspectives ID3: Environmentally inclusive but not explicitly linked to sustainability	CTA1: Encourages individual research but lacks collective projects or actionable sustainability solutions
Unit Two: "Ill-Gotten Gains Never Prosper"	SDG 16 (Peace, Justice, and Strong Institutions), SDG 12 (Responsible Consumption and Production)	CR1: Directly related to SDGs	MR1: Some explicit representation	PI1: Integrated into ethical discussions PI2: Activities involve analyzing and addressing corruption PI3: Assessments focus on anti-corruption	CCR2: Globally relevant but needs local case studies	ID2: Limited exploration of corruption's impact on marginalized groups ID3: No environmental dimensions discussed	CTA2: Encourages collective engagement through creating charters but lacks broader application to real-world contexts
Unit Three: "Schools: Different and Alike"	SDG 4 (Quality Education), SDG 5 (Gender Equality)	CR2: Indirectly related to SDGs	MR2: Implicit representation	PI1: Integrated into discussions of global educational systems PI2: Activities encourage critical thinking PI3: Assessments focus on comparisons	CCR2: Globally relevant but could include Algerian educational examples	ID1: Limited focus on gender equality ID2: Little attention to marginalized educational experiences	CTA2: Encourages collaboration in designing educational projects but lacks explicit links to global education challenges

Unit Four: "Safety First"	SDG 12 (Responsible Consumption and Production), SDG 3 (Good Health and Well-being)	CR1: Directly related to SDGs	MR2: Implicit representation	PI1: Integrated into discussions on advertising and safety PI2: Activities analyze advertisements PI3: Assessments evaluate consumer behavior	CCR2: Globally relevant but lacks Algerian examples of consumer safety	ID2: Limited exploration of marginalized consumers ID3: Minimal focus on environmental impacts of consumerism	CTA2: Conducting surveys on advertising's impact is collaborative but lacks focus on actionable recommendations
Unit Five: "Are We Alone?"	SDG 9 (Industry, Innovation, and Infrastructure), SDG 4 (Quality Education)	CR1: Directly related to SDGs	MR2: Implicit representation	PI1: Integrated into discussions of space and innovation PI2: Projects encourage critical thinking PI3: Assessments evaluate technological impacts	CCR2: Globally relevant but lacks Algerian contributions (e.g., AlSat satellites)	ID2: Limited representation of diverse impacts of innovation ID3: No discussion on environmental costs like space debris	CTA2: Designing astronomy booklets fosters collaboration but lacks actionable solutions for sustainable innovation

Unit Six: "We Are Family!"	SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities)	CR1: Directly related to SDGs	MR2: Implicit representation	PI1: Integrated into discussions on family and emotions PI2: Activities focus on emotional well-being PI3: Assessments explore relationship dynamics	CCR1: Universal themes of family but limited Algerian context	ID1: Gender equality in family roles is underexplored ID2: Limited representation of diverse family structures	CTA1: Focuses on individual reflection but lacks collaborative or community-level projects addressing societal inequalities
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Table 3.1. Comprehensive Feedback Table Summarizing the Application of the Coding Framework for All Six Units

Conclusion

This chapter presented a comprehensive analysis of the representation of Sustainable Development Goals (SDGs) within Algerian English secondary school textbooks. The findings reveal a nuanced landscape where certain SDGs, particularly SDG 4 (Quality Education) and SDG 3 (Good Health and Well-being), are prominently featured, reflecting their direct relevance to the educational context and student well-being. However, the analysis also highlighted a significant imbalance in coverage, with many other crucial SDGs receiving limited or no attention, thereby presenting an incomplete picture of the global sustainability agenda.

A key observation was the predominantly implicit integration of sustainability themes, with only a small fraction of content explicitly referencing the SDG framework. While this implicit approach may subtly introduce students to sustainability concepts, it potentially hinders their awareness of the broader international efforts and the interconnectedness of global challenges. Furthermore, despite some instances of local relevance, a substantial portion of the content lacked contextualization to the Algerian setting, which could diminish student engagement and the practical applicability of the learned concepts.

The pedagogical approach largely favored textual and discussion-based engagement, with a notable absence of robust assessment mechanisms for SDG-related content. The progression of sustainability themes across different grade levels, from basic environmental awareness to more complex social and ethical dimensions, indicates a structured, albeit sometimes imbalanced, curriculum design. However, the emphasis on individual actions over collective solutions suggests a need for a more holistic approach that fosters an understanding of systemic change and collaborative efforts.

In essence, while Algerian English secondary school textbooks provide a foundational exposure to sustainability, there exist considerable opportunities for enhancement. Future curriculum development should aim for a more balanced and explicit integration of all SDGs, strengthen local relevance, and incorporate more action-oriented and assessable learning approaches. Such improvements would better equip students to become informed, engaged, and proactive global citizens capable of contributing meaningfully to sustainable development.

Chapter Four

Findings (Teacher Perspectives)

Introduction

The integration of the Sustainable Development Goals (SDGs) into educational curricula has gained global attention as a means of fostering sustainability awareness and global citizenship. In Algeria, English language textbooks serve as a potential medium for SDG-related content, yet the effectiveness of this integration depends significantly on the educators who implement it. This section presents the demographic and background characteristics of 60 secondary school English teachers surveyed for this study, offering insights into their gender distribution, teaching experience, instructional levels, and prior exposure to SDG training. Additionally, it examines contextual factors that shape their perspectives on SDG integration in the classroom. Understanding these demographic variables is crucial, as they influence how teachers engage with sustainability themes in their pedagogy. The findings reveal notable trends, including a predominance of female educators, varied levels of teaching experience, and limited formal SDG training—factors that collectively inform the broader analysis of SDG implementation in Algerian English language education (Creswell, 2014; Algerian Ministry of Higher Education, 2021).

4.1 Demographics and Background of Respondents

The analysis of teacher perspectives on SDG integration in Algerian English textbooks is based on survey responses from 60 secondary school English teachers. This section presents the demographic and background characteristics of these respondents, including gender distribution,

teaching experience, teaching levels, and SDG training status, as well as contextual factors influencing their perspectives (Creswell, 2014).

The gender distribution of respondents reveals a significant imbalance, with female teachers (80%) substantially outnumbering male teachers (20%). This distribution reflects broader patterns in the teaching profession in Algeria, particularly in language education, where women constitute the majority of practitioners. While this gender imbalance should be considered when interpreting the findings, it accurately represents the demographic reality of English language teaching in Algerian secondary schools (Algerian Ministry of Higher Education, 2021).

Teaching experience among respondents varies significantly, with 39% being experienced teachers, 32% mid-career, and 29% early-career.. Figure 4.1: demonstrates the teaching experience of the respondents:

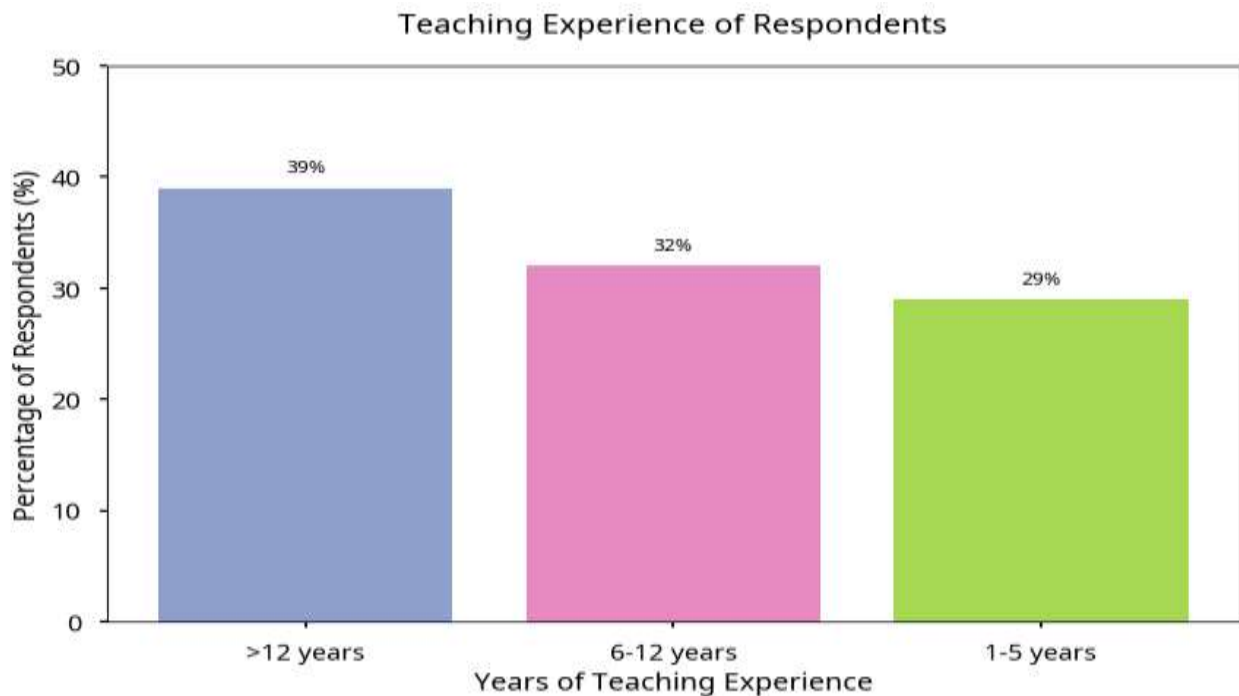


Figure 4.1: Teaching Experience of the Respondents

Most respondents teach at multiple secondary school levels rather than one. Specifically, 73% teach third-year, 67% teach second-year, and 62% teach first-year classes. This overlap offers valuable insights for the study. Sixty-five percent of respondents teach in the literary stream, 58% in the scientific stream, and 22% in technical/vocational streams, allowing comparison of SDG content reception across academic orientations. Geographical distribution shows that 65% in urban areas and 35% in rural, highlighting diverse experiences in SDG integration.

Seventy percent of respondents reported not receiving specific training on integrating Sustainable Development Goals (SDGs) into English language teaching. Only 18% received formal training, while 12% had partial or informal exposure. Most who did receive training attended brief workshops within larger programs, providing limited information on effective teaching strategies for sustainability education.

Contextual factors that influence teachers' views on sustainable development goals (SDGs) include several important elements. First, pressures from exams affect teaching priorities, with less focus on non-tested content. Second, limited resources hinder teachers in schools with fewer materials from incorporating sustainability topics. Third, the level of administrative support varies, influencing the openness to innovative teaching methods versus a strict focus on language objectives. Fourth, community challenges can enhance student interest in sustainability (Freire, 2005). These factors highlight gaps in teachers' professional training for sustainability education and suggest reliance on general knowledge and personal interest instead of specialized training (UNESCO, 2017).

4.2 Teacher Perceptions of SDG Integration

Teachers' views on Sustainable Development Goals in Algerian English textbooks focus on topic frequency, effectiveness, and student engagement. Figure 4.2 shows The teachers' perception of SDGs topic frequency in textbooks.

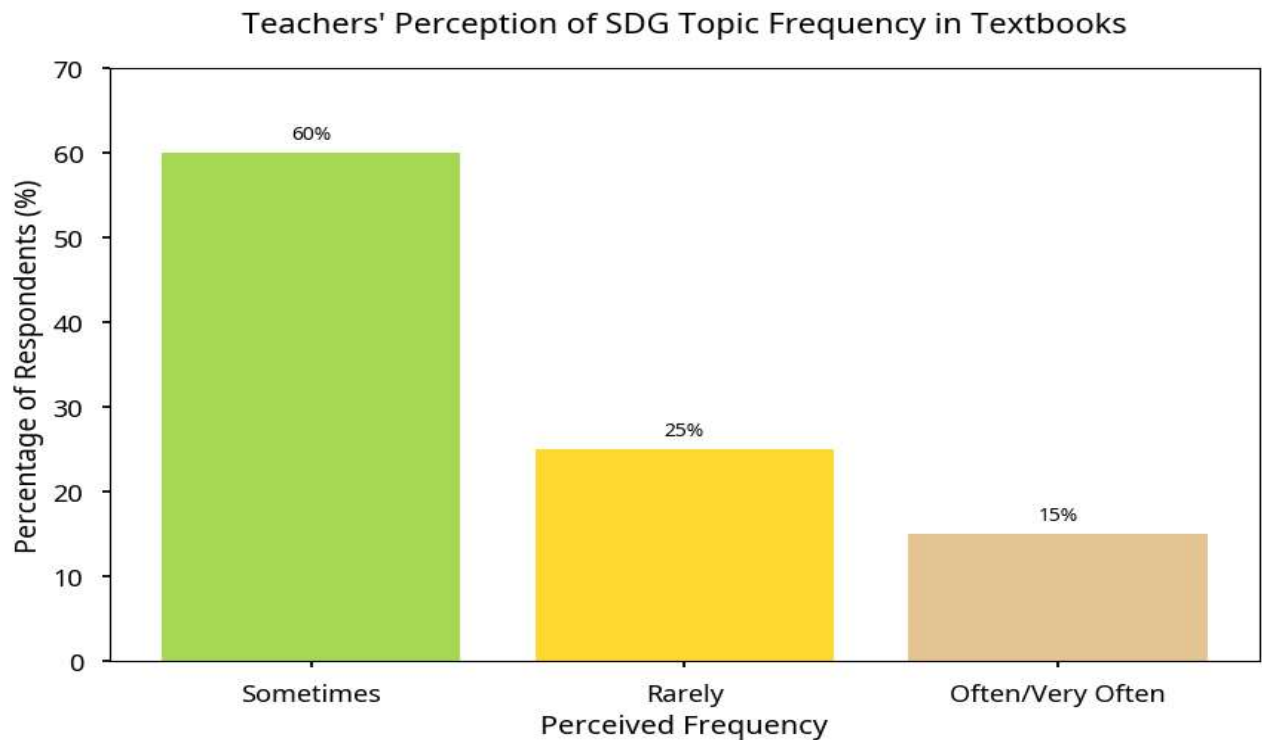


Figure 4.2: Teachers' perception of SDGs topic frequency in textbooks.

Teachers perceive that SDG topics appear occasionally in textbooks rather than systematically. Most (60%) report encountering these topics "Sometimes," while 25% say "Rarely," and only 15% choose "Often" or "Very often. " All textbooks include some sustainability content (Parvez & Awan, 2021).

The frequency of sustainability content varies among textbooks, with "*Getting Through*" (Second Year) having the most, followed by "*New Prospects*" (Third Year) and "*At the Crossroads*" (First Year). Teachers' perceptions of this frequency may be influenced by how

sustainability topics are presented in the materials (Nabavi & Mohammadi, 2020). Teachers' assessments of which Sustainable Development Goals (SDGs) are most common align with content analysis, with SDG 4 (Quality Education), SDG 3 (Good Health and Well-being), and SDG 11 (Sustainable Cities and Communities) being most recognized, while economic and some environmental goals like SDG 14 (Life Below Water) and SDG 15 (Life on Land) received less attention.

Most teachers view SDG themes positively regarding their effectiveness in language learning, with 77% believing that these themes assist in English language acquisition. On a five-point scale, the effectiveness received a mean rating of 3.9, showing a fair confidence in their educational value (Leicht et al., 2018). Specific ways SDG content aids language learning include providing meaningful contexts for communication, relevant vocabulary introduction, and generating student interest and engagement. Many teachers highlighted that sustainability topics allow for various language activities that foster comprehensive skill development.

However, some limitations in the effectiveness of current SDG content for language learning were noted. A significant concern was that vocabulary related to sustainability is often introduced without enough support or practice, making retention difficult (Darwich, 2021). Additionally, some reading materials were deemed too complex for students' levels, hindering comprehension and language acquisition.

The impact of SDG content on student engagement and motivation varies, though overall, 72% of teachers reported that it generally boosts engagement when compared to traditional exercises. Environmental topics, particularly those tied to local issues, tend to engage students more. Health-related topics have consistent engagement, while social sustainability themes vary in interest among students, depending on how closely they relate to their lives.

Student characteristics also play a role in engagement. Different student streams show varied

interests in social versus environmental topics. Visual elements, personal stories, and hands-on projects significantly increase motivation.

Regarding curriculum integration, while many teachers believe that sustainability themes align well with current curriculum goals, they also see tensions, particularly in assessment practices focusing more on linguistic skills than on knowledge of content. Additionally, the separate organization of subjects in the curriculum contrasts with the holistic nature of sustainability, complicating effective teaching on these topics. Overall, while teachers recognize the educational potential of SDGs, they see areas for improvement in implementation and alignment with educational goals.

4.3 Impact on Language Skills and Critical Thinking

This section looks at teachers' views on how Sustainable Development Goal (SDG) content impacts students' language skills and critical thinking. It highlights effects on reading, writing, speaking, and listening skills, and how it encourages real-life English use.

Teachers report that reading skills benefit most from SDG content, with 88% noting it enhances students' interest and comprehension through authentic texts. These texts help develop skills like identifying main ideas and understanding vocabulary in context. Additionally, sustainability topics introduce diverse text types that enhance reading strategies. However, 35% of teachers mentioned that some complex texts may challenge comprehension, especially for students with lower proficiency or less background knowledge.

Writing skills improve for 72% of teachers when using SDG content, though differently from reading. Sustainability themes offer meaningful topics for various writing tasks such as reports, essays, and creative responses. Teachers appreciate these contexts for enhancing linguistic accuracy and communication effectiveness (Barrow, 2007). Effective activities include

reflective journals, persuasive essays, informational reports, and creative writing about future scenarios (Tilbury, 2014). However, teachers face challenges; 42% say students struggle with expressing complex sustainability ideas due to limited vocabulary, and 38% note assessment focuses more on language accuracy than content, impacting writing evaluation (Nabavi & Mohammadi, 2020).

Speaking skills improve for 68% of teachers when using sustainability content, which offers meaningful topics for discussions and presentations. Teachers find these themes motivating for students, enhancing their fluency and accuracy in speaking. Effective speaking activities include structured debates on environmental policies, role-plays, presentations on social initiatives, and discussion circles about quality-of-life issues. However, 45% of teachers report challenges, such as students lacking the necessary vocabulary and some students struggle with complex concepts, leading to hesitation in speaking.

Listening skills benefit for 55% of teachers, but less often than speaking skills. Effective listening activities include comprehension tasks from talks and interactive discussions on quality-of-life issues. Challenges include difficulties with specialized vocabulary and limited availability of appropriate resources for students at different proficiency levels.

The development of critical thinking skills through Sustainable Development Goals (SDG) content is seen as a key benefit by 82% of teachers, in addition to language skill growth. Teachers note that sustainability topics encourage analytical thinking, evaluation of different viewpoints, and development of well-reasoned opinions. They highlight specific ways sustainability content fosters critical thinking, with 78% mentioning the complex nature of sustainability challenges, which prompts students to consider various factors and solutions rather than simple answers. Additionally, 72% of teachers observe that sustainability issues often

involve competing values, helping students evaluate different perspectives.

Moreover, 65% of respondents note that sustainability topics link global frameworks to local realities, aiding students in analyzing how broad principles apply to specific contexts. Teachers report several activities that blend sustainability content with critical thinking, such as analyzing environmental problems, evaluating social challenges, comparing stakeholder viewpoints, and assessing current practices' sustainability. These activities enhance both analytical skills and language abilities.

Beyond critical thinking, teachers reported how SDG content promotes real-life language use, with 75% emphasizing its connection to media discourse and current issues that students encounter. Many teachers (68%) also mentioned how sustainability themes relate to students' experiences and community concerns, making communication about important issues more relevant. Furthermore, 62% noted that SDG content aligns with future career interests for students in fields like environmental science or public health.

Teachers also shared instances where students used their English skills in real-world sustainability settings, such as participating in campaigns, researching issues online, and communicating with international organizations. Most teachers (77%) see a positive relationship between SDG content and language acquisition, as sustainability themes enhance motivation and engagement. However, they also recognize challenges, such as complex concepts requiring advanced language skills and the potential distraction from linguistic development.

To address these challenges, appropriate scaffolding and support are crucial. Teachers emphasized the need for pre-teaching vocabulary, providing discussion frameworks, and offering balanced feedback to maximize the benefits of SDG content for language learning. Figure 5.3 presents how teaching SDG content aids language acquisition and develops critical thinking among learners.

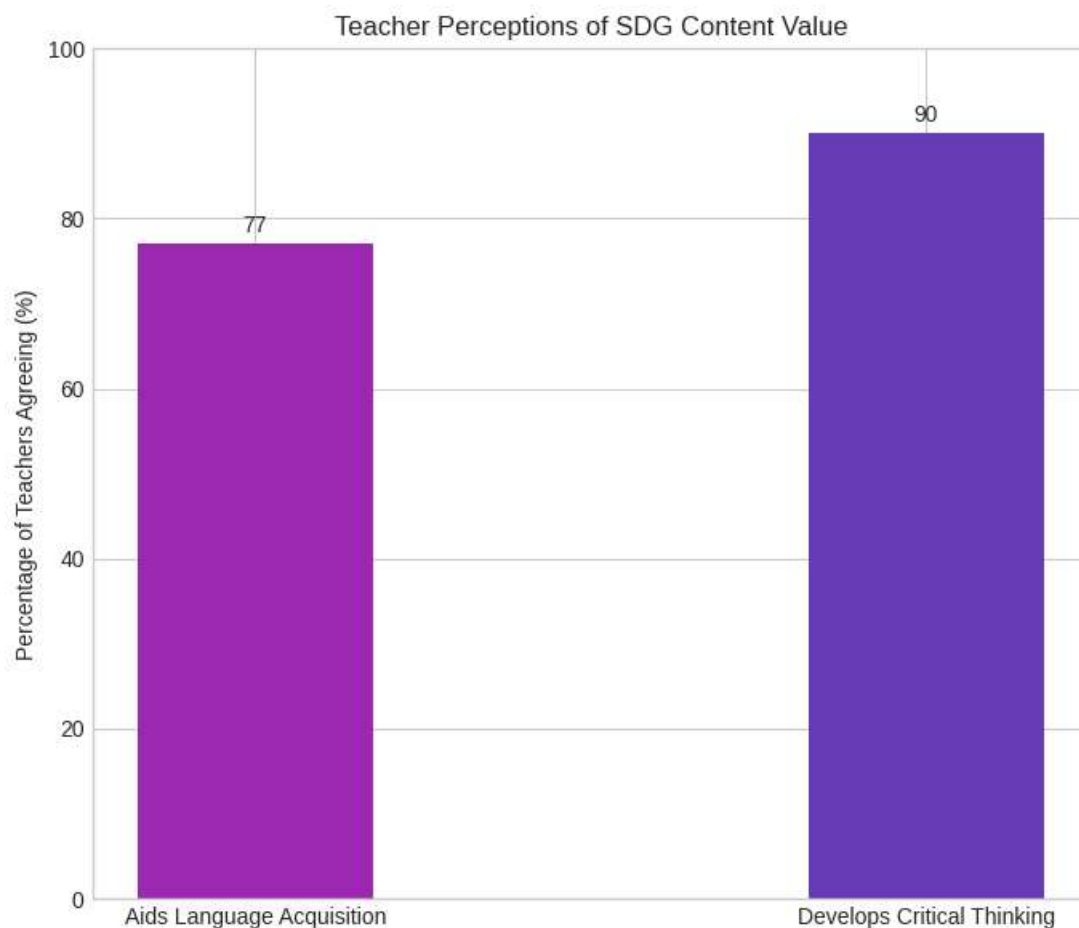


Figure 4.3: Teachers' perceptions of SDG Content Value

The findings show that SDG content positively affects language skills and critical thinking. Teachers value sustainability themes for learning but face implementation challenges.

4.4 Teaching Strategies and Approaches

This section looks at how teachers approach instruction for Sustainable Development Goals (SDG) content, adapt textbook materials, use supplementary resources, and develop innovative methods for integrating SDGs into their teaching. The instructional methods reveal how teachers connect official materials to classroom practices and provide insights into effective sustainability education within language teaching.

Teachers use a variety of strategies to engage students with sustainability topics while enhancing language skills. Discussion-based methods are the most commonly reported, with 85% of teachers regularly using structured discussions, debates, and dialogues. These methods vary from informal pair discussions on environmental issues to formal classroom debates on controversial sustainable development topics. Teachers appreciate these methods for promoting speaking skills, critical thinking, and an understanding of different perspectives on sustainability.

Specific formats for discussions that teachers find effective include “four corners” debates, where students physically position themselves based on their viewpoints; structured dialogues with students taking on roles of stakeholders in sustainability issues; and progressive discussions that allow small groups to focus on different sustainability topics, building on ideas from previous discussions.

Project-based learning is a regular approach for 68% of teachers, focusing on in-depth engagement with sustainability themes through research, creation, and presentation tasks. Examples include community environmental surveys, awareness campaigns, and multimedia presentations about sustainability challenges. Teachers value project-based learning for its integration of multiple language skills, connection to real-world contexts, flexibility for student interests and abilities, and development of collaboration skills alongside language capabilities.

Challenges in project-based learning include time constraints within curricula, limited resources, and difficulties in assessing both the language and content aspects of projects. Some teachers adapt project scales and timelines to align with curricular demands while preserving the benefits of engaging with sustainability topics.

Role-playing and simulation activities are employed by 55% of teachers, allowing students to experience sustainability issues through interactive learning. These activities include simulated conferences on environmental issues and dramatizations of local community meetings. Teachers appreciate these methods for fostering empathy, understanding diverse perspectives, and applying specialized vocabulary in practical contexts.

Collaborative activities are used by 75% of teachers, with approaches like pair work, group problem-solving, and cooperative learning structures. These activities focus on peer interaction and shared knowledge construction around SDG themes, helping students to analyze sustainability challenges and develop solutions together.

Critical thinking activities designed to foster analytical engagement with sustainability are used by 62% of teachers. These involve evaluating causes and effects of environmental problems and comparing different perspectives. Teachers value these methods for advancing higher-order thinking skills and language abilities, often using thinking routines and graphic organizers to help students analyze topics deeply.

Adapting textbook materials is common among teachers focused on SDG content; 82% report modifying or supplementing these resources. This can involve simplifying complex content for lower proficiency students, incorporating local examples related to Algeria, extending activities for deeper engagement, or reorganizing materials for a more coherent treatment of sustainability themes.

Supplementary resources and activities are commonly used by teachers to enhance education about the Sustainable Development Goals (SDGs) beyond traditional textbooks. A majority, 72%, of teachers report using online articles, videos, and infographics to provide

current information on environmental and social issues. Additionally, 65% use authentic materials from environmental organizations and advocacy groups, which offer specialized knowledge and authentic language related to sustainability. Local resources are utilized by 58% of teachers, including local news reports, community organization information, and guest speakers who share their experiences in sustainability.

Digital tools are employed by 52% of teachers to engage students with sustainability content. These tools include quiz platforms for reviewing concepts, digital storytelling tools for narrating environmental issues, collaborative documents for group projects, and presentation software for sustainability research. However, teachers face challenges such as limited internet access, budget constraints for printed materials, and time pressures due to curriculum demands, especially with exam preparations.

Teachers have also developed innovative strategies for integrating SDG education within language teaching. One approach is cross-curricular collaboration, where teachers from different subjects coordinate lessons to address sustainability topics from various perspectives. Another innovation is community-connected learning, which involves students working on local sustainability issues through research and service projects. Digital exchange projects connect students across countries to discuss shared sustainability challenges, fostering global citizenship.

Some educators create specialized units centered on the SDGs, helping students understand the connections between different curriculum topics and broader sustainable development frameworks. These teaching strategies highlight the creativity and dedication of teachers in enriching sustainability education despite challenges.

4.5 Challenges in SDG Integration

This section discusses the challenges teachers face when integrating Sustainable Development Goals (SDGs) into English language teaching. These challenges include difficulties with language and teaching methods, limited time and curriculum support, resource shortages, technological barriers, gaps in knowledge for students and teachers, and related institutional issues.

Linguistic and pedagogical challenges are significant, reported by 78% of teachers as major obstacles to integrating SDGs. Teachers face language-specific issues and general teaching concerns that impact how effectively they can address sustainability in English classes. The most common linguistic challenge is specialized vocabulary associated with sustainability topics, which 72% of teachers highlight as difficult for students. Terms like "biodiversity," "carbon footprint," and "renewable energy" often require teachers to provide extensive support for students to understand them fully.

Complex discourse patterns in sustainability texts are also noted as a challenge by 68% of teachers. These texts often contain intricate structures and language that can exceed students' current abilities, making comprehension difficult even if individual words are known. Additionally, 62% of teachers observe that there can be a mismatch between the language level of authentic resources on sustainability and the proficiency levels of secondary students. Many high-quality materials use complex language, while simpler texts may lack depth.

Pedagogical challenges include balancing language learning with content understanding, assessing both language skills and knowledge of sustainability, and catering to differing student interests and abilities. These challenges require careful planning to ensure all students can engage with SDG content while improving their language skills. Teachers try various strategies to

overcome these challenges, such as pre-teaching vocabulary, creating glossaries, using visual aids, and employing collaborative learning approaches.

Time and curriculum constraints affect 75% of teachers' ability to integrate SDGs effectively. These issues relate to the overall design of the curriculum and the limited time allocated for English language classes. A primary time constraint, cited by 72% of respondents, is the pressure to cover required linguistic content, which often leaves little room for exploring sustainability themes in depth. While some sustainability content exists in textbooks, curriculum structures tend to prioritize language objectives over thematic exploration.

Another challenge is the fragmented treatment of sustainability topics within curricula, reported by 68% of teachers. Scattered content across different units makes it hard for students to build a coherent understanding of sustainability. Additionally, 65% of teachers mention needing extra time to prepare for teaching sustainability, as they often must research new topics and adapt materials, which isn't always acknowledged in their workload.

Teachers use different strategies to manage these time constraints, such as integrating sustainability topics into language lessons, focusing on key themes for deeper study, and assigning homework to let students engage more thoroughly with sustainability concepts.

Resource limitations and technological barriers are significant issues for 72% of teachers. These challenges affect the range of sustainability topics that can be taught and the methods used. Many teachers struggle with outdated textbook content due to the rapidly changing nature of sustainability issues. Technological limitations, particularly in rural or underfunded areas, restrict access to multimedia resources that could enhance lessons. Additionally, there is often a scarcity

of supplementary materials dedicated to sustainable development, limiting the variety of content available to enrich students' understanding of these critical issues.

Teachers face various challenges in integrating sustainable development education due to resource limitations. They create their own materials, collaborate informally with peers, use mobile phones as learning tools, and develop low-tech alternatives to achieve learning goals. A significant issue is the lack of knowledge among both students and teachers regarding sustainable development, identified by 68% of respondents. This gap in knowledge limits the exploration and understanding of sustainability content, regardless of students' language abilities or available resources.

Many students come to class with little understanding of environmental and social issues like climate change, biodiversity, and renewable energy, which makes it hard for teachers to build upon their existing knowledge in English lessons. Teachers also find that students lack awareness of global sustainability frameworks and initiatives, making it challenging for them to connect local issues to global patterns of support and collaboration. Additionally, teachers often report their own knowledge gaps about specific sustainability topics, which hinders teaching effectiveness.

Teachers highlight the link between language and content knowledge gaps, noting that when students struggle with both English vocabulary and background knowledge, their learning becomes significantly harder. Strategies to address these issues include enhancing students' background knowledge prior to discussing sustainability topics, using visual aids to clarify unfamiliar concepts, and linking sustainability issues to students' own experiences. Teachers can also engage in self-directed learning to improve their understanding of sustainable development.

Institutional challenges are also significant, with 62% of teachers noting that educational structures and policies affect classroom practices. These systemic factors can either support or undermine the integration of sustainability education into language teaching. For instance, assessment systems often conflict with sustainability education's emphasis on competencies, focusing instead on knowledge-testing. This misalignment discourages deeper engagement with sustainability topics that may not appear on tests.

Support from school administration varies greatly, with some teachers feeling encouraged to adopt innovative methods while others face restrictions tied to traditional testing. Professional development opportunities for sustainability education are limited, with most training focusing on general teaching methods rather than specialized topics. Furthermore, the curriculum structure, which separates subjects, creates barriers to understanding sustainability comprehensively, as it inherently spans environmental, social, and economic dimensions.

The overall findings reveal various interconnected barriers hindering the effective incorporation of sustainability themes into English teaching, spanning linguistic, pedagogical, and systemic dimensions, indicating that multiple approaches are needed at different levels to improve this integration.

4.6 Teacher Suggestions for Improvement

This section shares teachers' ideas for improving the integration of Sustainable Development Goals (SDGs) in English textbooks and classrooms in Algeria. It covers textbook content improvements, the need for teacher training, required resources and support, curriculum changes, and teaching methods to enhance sustainability education through language teaching.

The most suggested improvement is to enhance textbook content, with 88% of teachers giving specific ideas on how to better support SDG integration. A key recommendation, made by 75% of teachers, is to create clearer links to the SDG framework so students can see how topics relate to global sustainability goals. They suggest adding references to specific SDGs, brief explanations of the SDG framework, and visual aids to aid understanding.

Additionally, 72% of teachers recommend including more local examples and case studies relevant to Algeria. This would connect global sustainability principles to the local context, making lessons more understandable. Furthermore, 68% of teachers ask for improved visual support, like photographs and infographics, to illustrate complex sustainability issues in current textbooks.

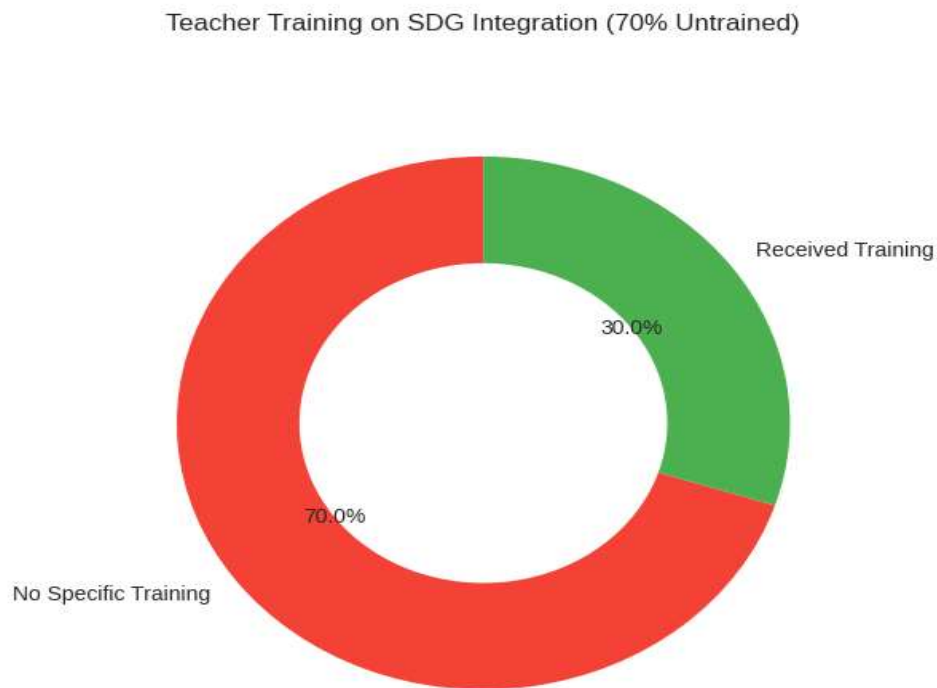


Figure 4.4. Teacher training on SDG Integration

Figure 4.4 reveals that 70% of teachers lack specific training on how to incorporate Sustainable Development Goals (SDGs) into their teaching, pointing out a significant gap in their preparedness. For effective SDG education, teachers need to grasp the connections between various global challenges like climate change, poverty, and gender equality, and to create engaging lessons. Without proper training, teachers may not be able to help students develop essential skills like critical thinking and problem-solving necessary for sustainable development. Investing in specialized training would empower teachers with the needed knowledge and techniques to inspire students while aligning lessons with the goals set for 2030.

Around 65% of teachers believe there should be a better balance in how different SDGs are depicted in textbooks, as many books focus more on certain goals like education and the environment while neglecting others, especially economic aspects. A more well-rounded approach would help students see how the various SDGs link together. Additionally, 62% of teachers suggest that sustainability topics should develop more progressively across textbook years, advocating for a systematic method that connects related information throughout different subjects.

The need for professional development is emphasized by 82% of teachers who stress that successfully integrating SDGs requires preparation beyond basic language teaching methods. Specialized training on the SDG framework is highlighted, with 78% of teachers expressing interest in learning more about the global goals and their educational significance. This training would help teachers relate sustainability to existing materials and supplement textbooks with relevant content.

Seventy-two percent of teachers also seek methodological training that focuses specifically on merging sustainability discussions into language teaching. This includes

approaches for addressing complex global issues while enhancing language skills and promoting critical thinking about sustainability challenges. About 65% of teachers suggest developing collaborative learning opportunities such as teacher networks or mentorships surrounding sustainability education, allowing for the sharing of resources and ideas.

Fifty-eight percent of teachers would like regular updates on sustainability developments, given the fast-paced changes in environmental science and policy. They suggest newsletters, webinars, or short refresher courses to help them stay informed. Moreover, 75% of teachers underline the need for specific resources and support to help them effectively teach SDGs. Many (72%) want teaching materials explicitly designed for SDG education, such as lesson plans, reading texts at different levels, activity sheets, and assessment tools.

Around 68% of teachers request digital resources, particularly those easily accessible online, like collections of videos and interactive content on sustainability issues. Sixty-five percent value visual and physical resources, such as posters and photographs, which make concepts tangible and engaging for students. Also, 52% of teachers seek support for field experiences, recognizing the importance of extending learning beyond the classroom through partnerships with local organizations.

Seventy percent of teachers suggest curriculum and assessment changes to better integrate SDGs. This includes formally including sustainable development as a key theme in curriculum documents, which would legitimize and support its inclusion in lessons. About 65% propose revising assessment criteria to include evaluations of sustainability knowledge alongside language skills, enhancing student engagement with these topics.

Sixty-two percent of teachers advocate for more flexibility in implementing the curriculum, allowing them to emphasize sustainability more relevant to their students' contexts. Interdisciplinary approaches are recommended by 58%, encouraging collaboration across various subjects. Overall, these findings indicate a wealth of practical suggestions from teachers for improving the teaching of SDGs in Algerian English education, covering aspects like training, resources, curriculum, and assessment systems.

4.7 Summary of Findings

This chapter discusses findings on how secondary school English teachers in Algeria view the integration of Sustainable Development Goals (SDGs) in their English textbooks. Surveys from 60 teachers show that they generally have a positive but intricate view of this integration. While teachers see educational benefits in incorporating sustainability themes, they also recognize limitations in current teaching methods. Most believe that SDG content is included moderately in textbooks, with certain goals like education, health, and urban communities being more emphasized than others.

The effects of integrating sustainability themes on language skills and critical thinking are reported as mainly beneficial. Teachers appreciate how these themes enhance reading, writing, speaking, and listening skills and encourage critical thinking, real-life language use, and authentic communication. However, balancing the complexity of content with language accessibility remains a challenge.

Teachers employ various creative teaching strategies, such as discussions, project-based learning, role-plays, and collaborative activities. They often adjust textbook materials for better accessibility and use supplementary resources to enrich sustainability education. Nonetheless,

they face challenges including linguistic and pedagogical issues, time constraints, limited resources, technological barriers, and gaps in knowledge among students and teachers.

Recommendations from teachers for improving SDG integration include enhancing textbook content, providing professional development, and making curriculum adjustments. Key themes include the need for locally relevant sustainability content, the connection between language and sustainability education, and the importance of teacher creativity and agency. The findings suggest that improving SDG integration requires changes across various educational areas, from materials to assessments. Together with content analysis, these teacher perspectives enhance understanding of how SDGs are implemented in Algerian English education, highlighting both successful practices and significant challenges.

Conclusion:

This chapter delved into the perspectives of Algerian secondary school English teachers regarding the integration of Sustainable Development Goals (SDGs) into their curriculum and pedagogy. The demographic analysis revealed a predominantly female teaching force with varied levels of experience and, critically, limited formal training in SDG integration. These background factors, coupled with contextual influences such as exam pressures, resource limitations, and administrative support, significantly shape how teachers approach sustainability education.

Teachers generally perceive SDG topics as appearing occasionally rather than systematically in textbooks, with variations across different materials. While they largely recognize the positive impact of SDG content on language learning, providing meaningful contexts and vocabulary, concerns were raised about the insufficient support for sustainability-related vocabulary and the complexity of some texts. Despite these challenges, SDG content was

reported to generally boost student engagement, particularly environmental topics with local relevance.

The findings underscore the significant role of SDG content in enhancing language skills, especially reading, by providing authentic texts and fostering comprehension. Writing, speaking, and listening skills also benefit, as sustainability themes offer rich opportunities for various communicative tasks. Crucially, teachers identified the development of critical thinking as a key benefit, noting how the complex nature of sustainability challenges encourages analytical thinking, evaluation of diverse viewpoints, and the formation of well-reasoned opinions. The content also promotes real-life language use by connecting to media discourse, current issues, and students' future career interests.

In terms of teaching strategies, discussion-based methods and project-based learning emerged as prevalent and effective approaches for engaging students with sustainability topics while simultaneously developing language skills. Teachers adapt textbook materials and utilize supplementary resources to overcome limitations, demonstrating innovation in their pedagogical practices. However, challenges persist, including time constraints, resource limitations, and the need for appropriate scaffolding to maximize the benefits of SDG content for language acquisition and critical thinking.

In conclusion, Algerian English teachers acknowledge the educational potential of integrating SDGs, recognizing their value in enhancing language proficiency, fostering critical thinking, and promoting real-world language use. However, the current implementation faces hurdles related to curriculum design, teacher training, and resource availability. Addressing these areas through targeted professional development, explicit curriculum integration, and the provision of adequate resources will be crucial to fully leverage the transformative potential of

SDG education in Algerian secondary schools, thereby empowering students to become informed and engaged global citizens.

Chapter Five

Discussion

Introduction

This chapter combines findings from textbook analysis and teacher viewpoints on Sustainable Development Goal integration in Algerian English education. It highlights patterns in sustainability education, noting achievements and gaps. The analysis suggests improvements for curriculum development, teacher training, and policy reform to enhance sustainability education in line with global and local goals.

5.1 Synthesis of Key Findings

This chapter focuses on the findings from both an analysis of English language textbooks and teachers' views about integrating Sustainable Development Goals (SDGs) into Algerian education. The analysis shows that while there are successes in including sustainability topics, there are also significant gaps. Sustainability themes are found in all three textbooks, but they vary in importance and how they are taught. Teachers agree with these findings and share insights on how these themes play out in real classroom situations, student interest, and challenges faced.

A major observation is the unequal representation of different SDGs. SDG 4 (Quality Education), SDG 3 (Good Health and Well-being), and SDG 11 (Sustainable Cities and Communities) are emphasized more than others. This strong connection between what is in textbooks and what teachers notice suggests these areas are well integrated into the curriculum. On the other hand, economic sustainability topics (SDGs 8, 9, and 12) are not covered well in the

textbooks, which teachers also recognize, indicating a gap that could hinder students' understanding of sustainability in a broader sense.

The analysis found that sustainability themes in textbooks are mostly presented indirectly, with 85% being implicit and only 15% explicit. Teachers corroborate this, noting that sustainability is seldom explicitly linked to global frameworks like the SDGs. This suggests that the implicit approach may be a fundamental aspect of the curriculum, not just a result of how the analysis was conducted.

In the area of teaching methods, textbooks mainly integrate sustainability through reading and discussions (60%), rather than through hands-on activities (30%) or assessments (10%). Teachers observe similar trends, although some try to include more projects and assessments to engage students actively. Many educators point out that local examples are needed to make sustainability more relevant to Algerian students.

The analysis also looked at representation of diverse groups, showing limited inclusion in textbooks, which teachers seldom remarked on, perhaps indicating it is not a primary concern in classrooms. Finally, textbooks often promote individual actions (25%) over collective efforts (15) in addressing sustainability, a view that teachers recognize but want to shift towards encouraging more community-based actions. Overall, while there are alignments between textbook content and teacher perspectives, additional patterns point to further areas for enhancement.

There is a significant gap between the potential of Sustainable Development Goals (SDG) content in education and its actual use in classrooms. Many teachers find sustainability themes valuable for language learning and critical thinking but face time and resource constraints that

limit their ability to teach these themes effectively. This disconnect presents a major challenge for integrating SDGs into education.

Teachers vary widely in how they incorporate SDG content from textbooks into their teaching. Some engage with the content minimally, while others enhance it significantly with additional resources. This variation leads to inconsistent student experiences and outcomes in sustainability education.

Additionally, many teachers lack proper training for implementing SDGs in language teaching, with 70% reporting no specific training. This lack of preparation results in inconsistent approaches to teaching sustainability across different classrooms and schools.

Furthermore, the complexity of sustainability topics increases as students progress through secondary education, with a clear developmental sequence observed. Lastly, while textbooks focus on global sustainability, teachers strive to connect these concepts to local contexts, emphasizing their role in making sustainability relevant to students' lives.

The outcomes show the current state of integrating Sustainable Development Goals (SDGs) in Algerian English education, highlighting both successes and challenges. Key areas needing improvement include linking to SDG frameworks, diverse sustainability representation, active teaching methods, local context, and teacher training.

5.2 Interpretation in Light of Research Questions

This section analyses the findings of the research regarding the integration of Sustainable Development Goals (SDGs) into Algerian English secondary school textbooks. The first research question examines the extent of this integration. The results indicate that SDGs are moderately included in the textbooks, with about 60% of the content relating to sustainability themes. Of this,

25% addresses sustainability issues directly, while 35% treats them as secondary. However, the coverage of various SDGs is uneven, with environmental and social aspects receiving more attention than economic or certain environmental areas.

Most sustainability content is presented implicitly (85%), meaning it often lacks direct connections to the SDG framework. This absence may hinder students' understanding of how sustainability themes connect to broader global efforts. Pedagogically, the focus is primarily on reading and listening activities (60%) instead of active learning through projects or assessments. This suggests that sustainability is viewed as supplementary rather than central to language learning.

The relevance of the content to local contexts is also moderate, with only 40% being specifically connected to Algerian situations. Gender equality and diversity are underrepresented, with only 15% and 10% coverage, respectively. This limited focus may restrict students' understanding of social equity within sustainable development.

There is a moderate emphasis on individual action in sustainability (25%), but less on collective engagement (15%), which may limit understanding of coordinated efforts in sustainability. The analysis shows some progression in addressing sustainability more deeply in later textbooks, although more intentional connections between content could be beneficial. Teacher feedback supports these findings, indicating a moderate integration of sustainability themes. Overall, the study concludes that while SDGs are present in Algerian English textbooks, the integration is partial, with notable gaps and limitations across multiple areas.

Teachers generally have a positive view of Sustainable Development Goals (SDG) content in English language teaching, believing it helps with language acquisition and critical

thinking. Most teachers (77%) think sustainability themes enhance English learning, and 90% agree these topics encourage critical thinking. They appreciate sustainability topics for promoting authentic communication, relevant vocabulary, student interest, and diverse language activities.

However, teachers also see challenges with the way SDG content is presented in textbooks. They feel that vocabulary is introduced without enough support, reading materials can be too difficult for students, and the implicit nature of the content limits students' understanding of how these themes connect to global issues. This influences how teachers implement SDG content in their classrooms.

Implementation varies among teachers. Many use sustainability themes mainly as contexts for language practice, using discussion methods with topics like environmental issues. A significant number (68%) also employ project-based learning related to sustainability, which is often an extension of textbook content. Teachers frequently adapt textbook materials to make them more accessible or relevant.

Contextual factors like time constraints and student characteristics impact how SDG content is emphasized. Teachers with no specific training on SDGs tend to rely more on textbooks, while those with some background in sustainability are more creative in their teaching approaches. Overall, teacher perceptions and implementation highlight the need for better preparation and support to enhance SDG integration in education.

The research investigates the challenges and opportunities for integrating Sustainable Development Goals (SDGs) into English education in Algeria. It highlights several key challenges, including a lack of explicit connections between sustainability themes and the SDG framework, resulting in students having a fragmented understanding of these issues. The study

notes that some SDGs, particularly economic and environmental ones, are underrepresented in educational materials, while others, like education and health, are more prominently featured.

The reliance on traditional text-based learning over active projects limits transformative learning experiences necessary for developing skills for sustainable development. Additionally, the lack of local context in global sustainability themes makes them less relevant to students. Language barriers due to complex vocabulary and concepts also hinder engagement with sustainability content. Furthermore, time constraints and curricular pressures prevent teachers from effectively covering sustainability topics, and resource limitations restrict access to necessary materials.

Teacher knowledge gaps are significant, with many teachers lacking specialized training in integrating SDGs into their teaching. This affects how effectively they implement sustainability content in their lessons. Assessment systems that prioritize language accuracy over knowledge of sustainability themes further disconnect curriculum aims from evaluation practices.

Despite these challenges, the research identifies several opportunities for improving SDG integration. There is already a foundation in textbooks that could be further developed for a more comprehensive approach. Many teachers view sustainability positively and see its value in enhancing language learning and critical thinking. The existing progression from simple to complex themes could be utilized to create a more coherent curriculum.

Innovative teaching strategies by some teachers could serve as models for wider implementation. The current curriculum, which emphasizes competences aligned with sustainability education, creates a framework for integration. There is also a strong interest among teachers for professional development related to SDGs, indicating potential for improved

training. Suggestions from teachers for enhancement reflect practical insights, presenting pathways to strengthen sustainability education in Algeria.

The research presents various recommendations to improve the integration of Sustainable Development Goals (SDGs) in English language education using insights from textbook analysis and teacher perspectives. For enhancing textbook content, it suggests making clearer connections to the SDG framework, ensuring specific SDGs are referenced, and using visual aids to help students grasp these links. There should be a balanced coverage of different SDGs, particularly addressing the underrepresentation of economic and certain environmental issues, so students can understand how various sustainability dimensions relate to each other. Local relevance should be improved by incorporating examples and case studies from Algeria, allowing students to connect global sustainability principles with local realities. Additionally, textbook content should systematically build knowledge over the years and improve the visual representation of sustainability concepts through infographics and maps. Active engagement through project-oriented learning should be emphasized, along with a focus on inclusivity and collective engagement that addresses the needs of marginalized groups.

For teacher professional development, the research recommends providing extensive training on the SDG framework to help teachers recognize sustainability connections in materials. Methodological training focused on integrating sustainability themes into language teaching is necessary, alongside establishing collaborative learning opportunities for teachers to share best practices. There should be regular updates on sustainability developments to keep teachers informed about crucial changes in this rapidly evolving field.

In terms of resource provision and support, supplementary teaching materials for SDG education should be developed alongside digital resource collections that include videos and interactive activities. Visual aids such as posters and photographs related to sustainability, as well as support for field experiences and community connections, are important.

The recommendations for curriculum and assessment modifications stress the need to formally include sustainable development in curriculum documents, making it a priority, and revising assessment frameworks to evaluate sustainability knowledge alongside linguistic skills. Flexibility in curriculum implementation should be promoted to allow teachers to focus on themes relevant to their students. Being explicit about integrating sustainability competencies into language objectives is also essential.

For pedagogical innovation, the research suggests promoting project-based learning dedicated to sustainability and developing critical media literacy to help students analyze sustainability issues presented in media. Digital exchange projects between Algerian students and international peers should be encouraged to foster discussions on shared challenges. Creative activities integrating arts into sustainability education are recommended as well.

These recommendations aim to enhance SDG integration in multiple aspects of English language education, leveraging existing strengths and addressing identified challenges.

5.3 Implications for Curriculum Development

The study emphasizes important considerations for improving English language education in Algeria by integrating Sustainable Development Goals (SDGs) into the curriculum. It identifies a need for a more organized and deliberate approach to teaching sustainability, suggesting that it should be a central theme in the curriculum rather than a sporadic topic. Future

curriculum development should make sustainability an explicit key theme with clear learning goals for students at various educational levels.

To achieve this, curriculum design should include specific learning objectives that address sustainability knowledge and skills alongside language learning goals. Content must provide balanced coverage of all SDG dimensions, avoiding the current focus on certain goals at the exclusion of others. Teaching methods should shift from primarily text-based approaches to more interactive and transformative learning experiences.

The study also underlines the importance of building upon students' understanding of sustainability as they progress through their education. Early curriculum might focus on basic, local environmental issues and gradually introduce more complex sustainability topics in later years. This approach recognizes the developmental stages of both language acquisition and understanding of sustainability.

Another significant point is the need for sustainability education to be culturally and contextually relevant. The current curriculum lacks local examples, and future materials should include Algerian case studies and scenarios that relate global sustainability concepts to local realities. This could involve using local environmental initiatives and challenges in readings, alongside activities that engage students in sustainability issues in their communities.

Additionally, the findings indicate that sustainability should be integrated across all language skills and assessments. The current focus is mainly on reading, with less attention given to writing and speaking activities related to sustainability. Future revisions should ensure that sustainability themes are embedded throughout all forms of language learning and evaluation, highlighting their importance.

The study reveals that teachers often face challenges in effectively teaching sustainability content due to variations in their interpretations of textbook materials. Therefore, future curriculum development should provide resources to assist teachers, including simplified vocabulary glossaries, background information on sustainability issues, and guidance on discussing sensitive topics. These supports would help educators effectively mediate sustainability content in the classroom.

Moreover, the research points to the need for interdisciplinary connections in sustainability education. Currently, sustainability is treated mainly within English classes, with little connection to other subjects. Future curriculum should strengthen ties between English and other disciplines like science and social studies, emphasizing how sustainability themes overlap across different areas of study.

Lastly, the findings stress the need for curriculum flexibility to allow for adaptation to various teaching contexts while maintaining core sustainability principles. This approach should offer clear guidance on sustainability integration while allowing teachers to modify the curriculum to suit their specific situations and student needs. Flexibility in curriculum design would ensure that all essential aspects of sustainable development are covered while respecting the diversity of educational environments.

These implications for curriculum development suggest a comprehensive approach to enhancing SDG integration that builds on existing strengths while addressing identified limitations. By establishing sustainability as an explicit cross-cutting theme, developing intentional learning progressions, enhancing cultural relevance, integrating sustainability across language skills and assessments, supporting teacher mediation, strengthening interdisciplinary connections, and balancing guidance with flexibility, future curriculum development could

significantly enhance the contribution of English language education to sustainable development awareness and competencies. (UNESCO, 2017)

5.4 Implications for Teacher Training

The study's findings emphasize the need for improvements in teacher training in Algeria to better integrate Sustainable Development Goals (SDGs) into English language teaching. A significant issue identified is that 70% of surveyed teachers have not received specific training in sustainability education, which explains some challenges in implementing SDG-related teaching practices. To address this gap, both pre-service and in-service training programs should be strengthened.

Pre-service programs should include sustainability education within English language teaching courses. Future teachers need to understand the SDG framework, its relevance to language education, and effective teaching methods before they start teaching. This will help them introduce sustainability topics in their classrooms more effectively.

In-service training must focus on providing in-depth education about sustainable development. Current teachers often only have access to brief workshops, which don't equip them thoroughly. Therefore, professional development should be extensive and ongoing, ensuring teachers acquire both the necessary content knowledge and teaching methods.

Teacher education must also aim to develop various competencies related to sustainability. Teachers have reported difficulties with understanding sustainability content, finding ways to teach complex global issues while also developing language skills, and encouraging critical thinking about environmental and social issues. Thus, teacher training should enhance their understanding of the SDG framework, including all 17 goals and their

interconnections. This will improve teachers' ability to integrate sustainability topics into existing lesson plans and confidently handle student inquiries.

Training should also cover pedagogical strategies for including sustainability themes in language lessons. Teachers must learn how to use environmental topics to teach language skills effectively, making complex concepts accessible while balancing language development and sustainability education. Knowledge about available teaching resources and materials related to sustainability is essential, helping teachers to enhance their lessons with diverse perspectives.

The study highlights the benefits of collaborative learning in teacher development. Teachers expressed a desire for networks and communities focused on sustainability education, indicating that sharing experiences and resources could boost their capacity for integrating SDGs. Ongoing professional learning communities could facilitate collective problem-solving, idea sharing, and mentorship among teachers addressing sustainability in their classrooms.

Cross-disciplinary collaboration with teachers from other subjects, like science or geography, can deepen English teachers' understanding of sustainability topics, helping them connect lessons more effectively. International networking could also expose teachers to diverse strategies and foster collaborative projects between students from different countries.

Context sensitivity in teacher training is crucial, as implementation challenges vary significantly across Algeria's educational environment, influenced by student demographics and resource availability. Training should equip teachers with strategies for various contexts, including low-tech solutions in resource-limited settings and guidance tailored for different student populations.

The findings stress the importance of critical reflection among teachers, helping them navigate the tensions between language teaching goals and sustainability education. Teacher education should facilitate discussions on how their work impacts broader educational objectives, including citizenship and global awareness.

Finally, it is essential to provide ongoing support after initial training to address challenges teachers face in applying new skills in practice. This support could include classroom observations, personalized coaching, and continuous professional development opportunities aimed at building upon initial training instead of repeating content.

Overall, the implications suggest a comprehensive approach to improving teacher education for better integration of SDGs in English language teaching, focusing on knowledge development, collaborative learning, context sensitivity, critical reflection, and sustained support.

5.5 Theoretical and Practical Contributions

This study makes several significant theoretical and practical contributions to understanding and enhancing SDG integration in language education, with implications that extend beyond the specific context of Algerian English textbooks to broader educational theory and practice. (UNESCO, 2017)

5.5.1 Theoretical Contributions

The study explores how sustainability education can be included in language teaching through a new analytical framework that looks at various aspects of Sustainable Development Goal (SDG) representation. This framework assesses content relevance, representation methods, cultural significance, inclusivity, and calls to action, offering a deeper perspective than earlier research that only considered the presence or absence of themes. It shows that while textbooks

may include a lot of sustainability content, there are still major gaps in how this content is presented and taught.

Additionally, the research looks at how global sustainability concepts are adapted to fit local educational contexts, specifically in Algeria. It shows that these concepts change when applied to local cultures and languages, revealing tension between global goals and local practices.

The study also reveals the important role teachers play in implementing curricula, as they adjust and enhance official materials on sustainability, highlighting their active engagement in how students learn about sustainability through language.

Finally, it examines how sustainability themes can assist in learning English, showing that while they provide meaningful communication contexts, they can also create language challenges that affect learning. (Tilbury et al., 2002)

5.5.2 Practical Contributions

The text provides an overview of the practical contributions made by a study on the integration of Sustainable Development Goals (SDGs) into Algerian English textbooks and education. It highlights several key aspects that are valuable for educational stakeholders, such as curriculum developers, teacher trainers, and policymakers.

First, the study offers a detailed assessment of how well SDGs are integrated into Algerian English textbooks, which is significant due to the lack of previous research in this area. This analysis identifies strengths and weaknesses, helping to guide improvements in sustainability education and informing future curriculum efforts.

Second, the research documents teachers' perspectives regarding the integration of SDGs, revealing challenges, innovative practices, and suggestions for improvement based on classroom experiences. This information serves as a resource for educational planners to enhance sustainability education effectively in real teaching contexts.

Third, the investigation introduces an analytical framework for evaluating the integration of SDGs in educational materials. This framework provides tools for researchers and educational developers to analyze sustainability content in various subjects and contexts, supporting wider interests in sustainability education globally.

Fourth, the inquiry produces evidence-based recommendations for improving SDG integration within English language education, addressing aspects such as textbook content, teacher training, and curriculum structure. These recommendations are grounded in both

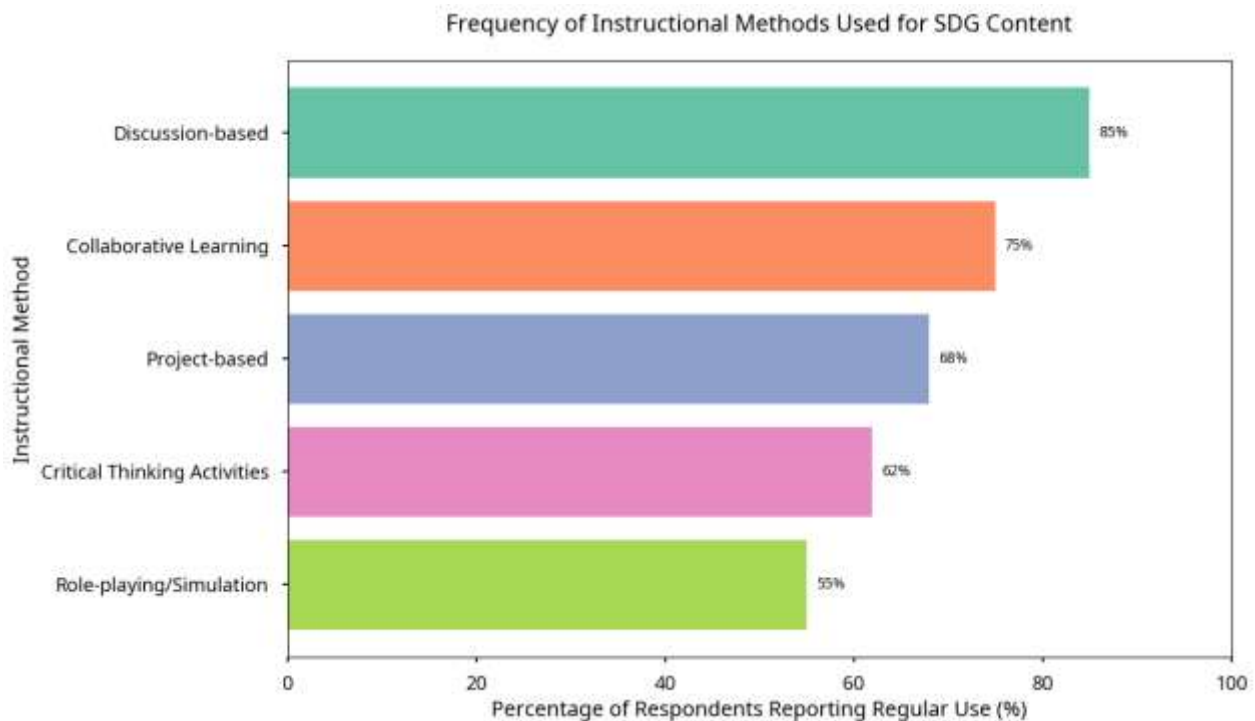


Figure 5.1. Frequency of Instructional Methods Used for SDG Content

theoretical analysis and practical teacher perspectives, allowing for flexibility based on specific needs and resources. Lastly, the study emphasizes the role of English language education in raising sustainability awareness and developing competencies. It shows that language learning can support both language skills and sustainability understanding when integrated effectively.

Overall, these findings have implications that extend beyond Algerian education, contributing to broader discussions and practices in sustainability integration, curriculum development, teacher education, and language teaching methodologies.(UNESCO, 2017). These approaches aim to make the integration of SDGs meaningful and engaging for learners, connecting global issues to their language learning journey and fostering a deeper understanding of sustainability principles.

Conclusion

This chapter has meticulously synthesized the findings from both the analysis of Algerian English language textbooks and the invaluable perspectives of teachers regarding the integration of Sustainable Development Goals (SDSDGs) into the educational landscape. The comprehensive examination revealed a nuanced picture: while there is a discernible presence of sustainability themes within the curriculum, significant gaps and inconsistencies persist in their explicit integration and pedagogical application. The study underscored that certain SDGs, particularly those related to environmental and social dimensions, receive more attention, whereas economic sustainability often remains underrepresented. Furthermore, the predominantly implicit nature of SDG integration in textbooks, coupled with a reliance on traditional text-based learning methods, limits the transformative potential of sustainability education.

The research highlighted several critical challenges, including the lack of explicit connections to the broader SDG framework, insufficient local contextualization of global sustainability issues, and considerable knowledge gaps among teachers due to inadequate specialized training. These factors collectively contribute to a fragmented understanding of sustainability among students and inconsistent implementation practices across classrooms. However, the study also identified promising opportunities, such as the positive disposition of teachers towards sustainability education, the existing foundational content in textbooks, and a strong interest in professional development related to SDGs.

The implications for curriculum development are profound, advocating for a more deliberate and explicit integration of sustainability as a central, cross-cutting theme. This necessitates the formulation of clear learning objectives for sustainability knowledge and skills, balanced coverage of all SDG dimensions, and a shift towards more interactive and transformative pedagogical approaches. Crucially, future curricula must enhance cultural and contextual relevance by incorporating Algerian case studies and fostering interdisciplinary connections to underscore the pervasive nature of sustainability across various fields of study.

Similarly, the implications for teacher training are equally vital. The study unequivocally calls for strengthened pre-service and in-service programs that provide in-depth education on the SDG framework, effective pedagogical strategies for integrating sustainability into language lessons, and comprehensive knowledge of available teaching resources. The establishment of collaborative learning communities and cross-disciplinary partnerships is essential to foster shared best practices and deepen teachers' understanding. Moreover, ongoing support and critical reflection are paramount to equip educators with the confidence and competence to navigate the complexities of sustainability education effectively.

In conclusion, this study offers a robust framework for understanding the current state of SDG integration in Algerian English education and provides actionable recommendations for its enhancement. By addressing the identified challenges and leveraging existing strengths, the educational system can significantly bolster its contribution to fostering sustainable development awareness and competencies among future generations. The findings extend beyond the Algerian context, offering valuable insights for global discussions on integrating sustainability into language education and curriculum reform worldwide. The journey towards a truly sustainable future begins in the classroom, and this research serves as a vital guide for that transformative endeavor.

General Conclusion

This study examined the integration of Sustainable Development Goals (SDGs) in Algerian English secondary school textbooks, analyzing both textbook content and teacher perspectives. The findings reveal that sustainability themes are moderately incorporated, with approximately 60% of textbook materials relating to SDGs—25% addressing them directly and 35% indirectly. However, coverage is uneven, with greater emphasis on environmental and social goals (e.g., education, health, and urban development) compared to economic and ecological dimensions (e.g., oceans, biodiversity, and energy). Additionally, 85% of the content presents sustainability implicitly, lacking explicit connections to the SDG framework, which may hinder students' understanding of global sustainability efforts.

Pedagogically, sustainability is primarily taught through text-based discussions (60%), with fewer opportunities for active learning (30%) or assessment (10%). While teachers value these themes for fostering language skills and critical thinking, only 40% of the content is locally contextualized, reducing relevance for Algerian students. Furthermore, inclusivity remains weak, with gender equality appearing in just 15% of materials and marginalized groups in only 10%. Teachers report adapting content to enhance engagement, but 70% lack formal training on SDG integration, leading to inconsistent implementation. Major challenges include time constraints, exam pressures, and resource limitations.

Despite these barriers, opportunities exist for improvement. The existing curriculum provides a foundation for deeper SDG integration, and teachers express interest in professional development and supplementary resources. Recommendations include revising textbooks to include explicit SDG references, balanced coverage, and local examples, as well as expanding

teacher training and project-based learning. Curriculum reforms should embed sustainability as a cross-cutting theme, while assessments should evaluate both language proficiency and sustainability awareness.

The research acknowledges limitations, including its reliance on textbook analysis without classroom observations, a small teacher sample (60 respondents), and the absence of student perspectives. Nevertheless, the findings underscore the potential of English education to advance SDGs in Algeria, provided systematic reforms are implemented in curriculum design, teacher support, and resource allocation. By addressing these gaps, Algeria can enhance the effectiveness and relevance of sustainability education in its secondary schools.

Our investigation examined how Algerian English textbooks address sustainability - covering crucial topics like environmental protection and social equality. While we found some positive efforts, significant gaps remain in how these important concepts are taught. The current approach shows potential but needs substantial improvement to be truly effective.

English classes actually present a golden opportunity to teach sustainability alongside language skills. When textbooks incorporate topics like climate change or renewable energy into grammar and vocabulary lessons, students gain dual benefits. This integrated approach maximizes learning without overburdening the curriculum, allowing students to develop language proficiency while becoming informed about global challenges. However, sustainability content currently appears randomly throughout textbooks - mentioning recycling in one chapter and poverty in another without clear connections. This haphazard presentation resembles learning math where basic operations appear in isolation rather than as part of a logical progression.

The quality of sustainability education varies greatly depending on individual teachers. While some educators creatively enhance textbook material with local examples and engaging projects, many simply follow the book page by page due to limited training and resources. This inconsistency highlights the need for better teacher support. Additionally, textbooks often focus on global sustainability issues while overlooking local manifestations of these problems. Students learn about melting glaciers but not about Algeria's own water scarcity challenges. Making these local connections would help students see the real-world relevance of what they are learning.

Currently, sustainability lessons tend to emphasize passive reading over active engagement. We need to shift toward hands-on learning where students tackle community projects, debate solutions, and create awareness campaigns about local issues. This active approach transforms theoretical knowledge into practical citizenship skills. Implementing these improvements requires several key actions: making sustainability an official part of English standards, providing teachers with proper training and resources, updating textbooks to include more Algerian-specific examples, incorporating project-based learning, and building partnerships with local sustainability organizations.

Ultimately, English education should do more than teach grammar - it should prepare students for real-world challenges. By effectively integrating sustainability into language lessons, we can develop students who are not only proficient in English but also equipped to address pressing global issues. These changes are not overly complex, but they do require coordinated effort from educational policymakers, curriculum developers, teachers, and local communities. The potential reward makes this effort worthwhile: a generation of students who excel at English while becoming active participants in building a more sustainable future for Algeria and the world.

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APPEDICES

APPENDIX 1: Teachers' Questionnaire

Title: Evaluating the Integration of SDGs in English Textbooks: Teachers' Perspectives

Instructions: This questionnaire aims to collect your views on how the integration of Sustainable Development Goals (SDGs) in the English language textbook affects language learning and critical thinking. Your responses will remain anonymous and will only be used for academic research.

Section 1: General Information

1. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

2. How many years of teaching experience do you have?

- ☐ 1–3 years
- ☐ 4–7 years
- ☐ 8–12 years
- ☐ More than 12 years

3. What level(s) do you teach?

☐ ☐ First-year secondary school

☐ Second-year secondary school

☐ Third-year secondary school

4. Have you received any training on integrating SDGs into English language teaching?

☐ Yes

☐ No

Section 2: SDGs and Language Learning

5. How frequently do you come across SDG-related topics in the **third-year secondary school English textbook**?

☐ Very frequently

☐ Sometimes

☐ Rarely

☐ Never

6. In your opinion, how well do the SDG-related topics contribute to language learning (e.g., vocabulary development, reading comprehension, writing skills)?

☐ Very effectively

☐ Somewhat effectively

☐ Neutral

☐ Not effectively

7. What **language skills** do you think benefit the most from SDG-related content? (Check all that apply)

☐ Reading

☐ Writing

☐ Speaking

☐ Listening

8. Do SDG-related discussions encourage students to use English in **real-life contexts**?

☐ Yes, strongly

☐ Somewhat

☐ Not really

☐ Not at all

Section 3: SDGs and Critical Thinking

9. How well do SDG-related activities encourage students to think critically?

☐ Very well

☐ Somewhat well

☐ Neutral

☐ Poorly

10. What **critical thinking skills** do students develop through SDG-related topics? (Check all that apply)

- ☐ Problem-solving
- ☐ Evaluating arguments
- ☐ Debating and discussing ideas
- ☐ Reflecting on social and environmental issues

11. What teaching strategies do you use to enhance students' engagement with SDG-related content?

(Open-ended response).....
.....

12. What challenges do you face when integrating SDG-related topics into your English lessons?

(Open-ended response).....
.....

Section 4: Suggestions for Improvement

13. How can SDG-related topics in English textbooks be improved to enhance language learning?

(Open-ended response).....
.....

.....

.....

.....

14. Do you have any additional comments on how SDG integration affects students' critical thinking and English proficiency?

(Open-ended

response).....

APPENDIX 2: Coding Framework for Identifying SDG-Related Content in Textbooks

The coding framework is designed to systematically analyze the presence, representation, and pedagogical alignment of SDG-related content within English secondary school textbooks. Below are potential answers (categories) and feedback points to guide analysis:

1. SDG Identification

- **Code:** SDG01 – SDG17
 - **Potential Answers:**
 - SDG 1: No Poverty
 - SDG 4: Quality Education
 - SDG 5: Gender Equality
 - SDG 13: Climate Action
 - Etc. (up to SDG 17)
 - **Feedback:**
 - Are multiple SDGs represented, or is there a focus on a specific few?

- Are these representations aligned with the textbook’s overall goals?

2. Content Relevance

- **Code:** CR1-CR3
 - **CR1:** Directly Related to an SDG
 - **CR2:** Indirectly Related to an SDG
 - **CR3:** No Relevance to an SDG
 - **Feedback:**
 - For CR1: Is the linkage between the content and the SDG explicit and clearly articulated?
 - For CR2: Could the linkage to SDGs be clarified or made more explicit through teacher guidance or supplementary activities?

3. Mode of Representation

- **Code:** MR1-MR2
 - **MR1:** Explicit Representation (e.g., mentioning “Sustainable Development Goals,” specific goals, or related keywords)
 - **MR2:** Implicit Representation (e.g., themes of equality, sustainability, or global citizenship without direct reference to SDGs)
 - **Feedback:**
 - MR1: Are SDGs introduced explicitly to promote awareness?
 - MR2: Could implicit mentions be enhanced to align better with the SDGs?

4. Pedagogical Integration

- **Code: PI1-PI3**
 - **PI1:** Integrated into Text (e.g., within reading passages, dialogues, or examples)
 - **PI2:** Integrated into Activities (e.g., exercises, critical thinking tasks, or projects)
 - **PI3:** Integrated into Assessments (e.g., comprehension questions or evaluations related to SDGs)
 - **Feedback:**
 - PI1: Are the texts engaging and appropriate for fostering SDG awareness?
 - PI2: Are the activities interactive and aligned with communicative teaching approaches?
 - PI3: Are assessments effective in measuring students' understanding of SDGs?

5. Cultural and Contextual Relevance

- **Code: CCR1-CCR2**
 - **CCR1:** Culturally Relevant (to Algerian or regional contexts)
 - **CCR2:** Universally Relevant (addressing global issues)
 - **Feedback:**
 - CCR1: Does the content reflect Algerian societal issues and SDG priorities?
 - CCR2: Are global challenges addressed in a way that resonates with students?

6. Inclusivity and Diversity

- **Code:** ID1-ID3
 - **ID1:** Gender Inclusive (e.g., promoting equality between genders)
 - **ID2:** Socially Inclusive (e.g., addressing poverty, marginalized groups)
 - **ID3:** Environmentally Inclusive (e.g., emphasizing sustainability, environmental care)
 - **Feedback:**
 - ID1: Are both male and female perspectives equally represented?
 - ID2: Are social inequalities addressed meaningfully?
 - ID3: Are environmental issues explained with actionable insights for students?

7. Call to Action

- **Code:** CTA1-CTA2
 - **CTA1:** Encourages Individual Action (e.g., recycling, volunteering, raising awareness)
 - **CTA2:** Encourages Collective Action (e.g., community projects, debates)
 - **Feedback:**
 - CTA1: Are actionable steps feasible for students?
 - CTA2: Are collective actions encouraged in a way that fosters collaboration?

8. SDGs Coding Sources

To ensure methodological rigor in identifying and analyzing SDG-related content in textbooks, this study draws upon established frameworks from:

1. United Nations (UN) and UNESCO Guidelines

- United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development.
- UNESCO. (2017). Education for Sustainable Development Goals: Learning objectives.
- Rationale: Provides the official SDG framework and targets, used to map textbook content to specific goals (e.g., SDG 4 for education, SDG 13 for climate action).

2. Textbook Analysis Frameworks

- UNESCO. (2016). Textbooks for Sustainable Development: A Guide to Embedding.
- Rationale: Offers criteria for evaluating how sustainability themes are integrated into educational materials, including explicit/implicit representation and pedagogical alignment.
- Leicht, A., Heiss, J., & Byun, W. J. (2018). Education for Sustainable Development: Challenges, strategies, and practices in a global context (UNESCO Journal).
- Rationale: Informs the coding of SDG relevance (direct/indirect) and cultural contextualization.

3. Content Analysis Methodology

- Schreier, M. (2012). Qualitative content analysis in practice. SAGE.

- Rationale: Guides systematic coding procedures (e.g., deductive/inductive category development) for SDG-related content.
- Krippendorff, K. (2018). Content analysis: An introduction to its methodology (4th ed.).
- Rationale: Ensures reliability in coding SDG themes across textbooks (e.g., inter-coder agreement measures).

4. Contextual Adaptations

- Algerian Ministry of National Education. (2019). Secondary education curriculum reform and SDGs.
- Rationale: Localizes SDG coding to Algeria's educational priorities (e.g., emphasis on SDG 4 and SDG 11 in textbooks).

Résumé

Cette thèse mémoire à étudier la manière dont les Objectifs de Développement Durable (ODD) des Nations Unies sont intégrés dans les manuels scolaires d'anglais utilisés dans l'enseignement secondaire en Algérie. Elle souligne également l'importance de l'éducation dans la réalisation des objectifs de durabilité mondiale et cherche à comprendre l'étendue et la méthode d'intégration de ces objectifs dans les manuels scolaires. Cette étude se concentre sur des axes majeurs tels que la qualité de l'éducation (Principe n° 04), l'égalité des sexes (Principe n° 05) et l'action climatique (Principe n° 13), qui mettent en évidence le degré de conscience environnementale et de justice sociale.

En utilisant une analyse de contenu détaillée, cette étude vise à déterminer comment ces objectifs sont inclus, de manière implicite ou explicite, dans les manuels scolaires, tout en évaluant leur conformité aux normes éducatives internationales en matière de durabilité. Cette étude comprend également des retours qualitatifs d'enseignants d'anglais pour connaître l'impact de l'intégration de ces thèmes sur l'apprentissage de l'anglais et la pensée critique sur la durabilité.

Enfin, cette recherche vise à fournir des perspectives utiles aux développeurs de programmes scolaires, aux enseignants et aux décideurs politiques en Algérie pour améliorer l'enseignement de l'anglais et promouvoir la sensibilisation au développement durable parmi les apprenants.

ملخص

تهدف هذه الأطروحة الى دراسة كيفية دمج أهداف التنمية المستدامة للأمم المتحدة في الكتب المدرسية للغة الانجليزية لمرحلة التعليم الثانوي بالجزائر . كما تؤكد على أهمية التعليم في تحقيق أهداف الاستدامة العالمية ، و تسعى الى فهم مدى و طريقة دمج هذه الاهداف في الكتب المدرسية . تركز هذه الدراسة على محاور رئيسية مثل جودة التعليم (المبدأ رقم 04) ، و المساواة بين الجنسين (المبدأ رقم 05) ، و العامل المناخي (المبدأ رقم 13) التي تبرز مدى الوعي البيئي و العدالة الاجتماعية .

باستخدام تحليل محتوى مفصل ، تهدف هذه الدراسة الى تحديد كيفية ادراج هذه الاهداف سواء كانت بطريقة ضمنية أو صريحة في الكتب المدرسية مع تقييم مدى توافقها مع المعايير التعليمية الدولية للاستدامة.كما تتضمن هذه الدراسة انطباعات نوعية لأساتذة اللغة الانجليزية لمعرفة أثر دمج هذه المحاور في تعلم اللغة الانجليزية و التفكير النقدي حول الاستدامة.

في الاخير ، يهدف هذا البحث الى تقديم رؤى مفيدة لمطوري المناهج التعليمية و الاساتذة و صناع السياسات في الجزائر لتحسين تعليم اللغة الانجليزية و تعزيز الوعي بالتنمية المستدامة بين المتعلمين.