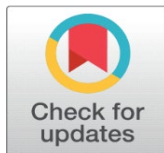
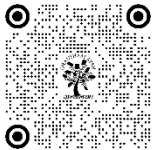


INCLUSION OF SUSTAINABLE DEVELOPMENT CONTENT IN ENGLISH TEXTBOOKS OF SECONDARY LEVEL: AN ANALYTICAL STUDY

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ABSTRACT

Sustainable development is crucial to the solution of the interrelated threats of the 21st century—a triple threat of environmental, social, and economic. Learning about sustainability is important to each learner, and textbooks act as a critical source of learning for this purpose. The representations of the SD concepts in the English NCERT textbooks for Grades IX (Beehive) and X (First Flight) were explored with the objective of evaluating their appropriateness to the ESD framework. Using a qualitative content analysis approach, this study examines the textbooks of secondary level of English subject in terms of environmental, social, and economic perspectives on sustainability. Literary works, poems, and narrative prose are analysed to evaluate the implicit and explicit inclusion of SD themes like climate change, conservation, gender equality, and economic equity. The effectiveness of associated exercises and activities in promoting critical thinking and action-oriented learning is also reviewed. The findings reveal that SD themes are present but are predominantly implicit, with a greater emphasis on environmental aspects compared to social and economic dimensions. Pedagogical opportunities to connect textual content with practical sustainability issues are often underutilized. Exercises and activities encourage reflective thinking but rarely draw direct links to global challenges such as climate change or poverty alleviation.

Keywords: Education, Sustainable Development, ESD, Textbooks, Secondary Education

1. INTRODUCTION

Sustainable development has turned out to be a crucial agenda globally, not only for a better environment and society but also for a just economy. Sustainability values, skills, and attitudes are to be fostered, and education in the framework of the United Nations' Education for Sustainable Development fits the bill for the same. NCERT books play a fundamental role in developing the minds of millions of Indian students and create a platform that integrates sustainability into mainstream education in India.

The idea of sustainable development has become the cornerstone of the discussion across the world and has emphasized the need to balance economic growth, environmental conservation, and social equity. Education plays an important role in fostering awareness and encouraging practices that align with sustainable principles. In this regard, English textbooks

are not only a tool for language learning but also a very important tool to involve students in critical global issues such as sustainable development, which is often discussed through narratives, essays, and discourse-based activities.

Elements of Sustainable Development

i) Environmental Sustainability

Environmental sustainability is the management and protection of natural resources so that they can continue to support life on Earth, both in the present and for future generations. This includes:

- Biodiversity conservation- species and ecosystem preservation
- Management of natural resources- water, forests, and minerals
- Reduction and regulation of pollution sources- air, water, land
- Climate change mitigation and adaptation
- Renewable energy resource utilization- solar, wind, etc.

ii) Social Sustainability

Social sustainability seeks to ensure that societies remain healthy, just, and equitable over time. It guarantees that not only do things remain the same but they are also better. In other words, it enhances the welfare and quality of lives for all people. This includes,

- Imagine equity and social justice where anyone has equal rights and opportunities,
- Health care and education-think universal access to relevant services in the field,
- Poverty alleviation-social and economic inequality go unchecked,
- Strong communities-good social cohesion and participation
- Empowerment and gender equality (ensuring everybody has a say and chance to succeed)

iii) Economic Sustainability

Economic sustainability focuses on creating an economic system that promotes long-term economic growth and does not reduce the resources of future generations. This aspect has to do with the development and sustainability of an economy. The aspects include the following:

- Economic growth: This is about increasing income and wealth through sustainable means.
- Job opportunities: creation of jobs in society, reduced poverty, and everybody is engaged.
- Sustainable business practices (corporate social responsibility, ethical business strategies)
- Responsible consumption and production (practices that do not exhaust resources)
- Financial resilience (ensuring economic policies do not harm the environment but instead protect future interests)

iv) Cultural Sustainability

Cultural sustainability helps to conserve and celebrate cultural identities, practices, and heritage by fostering respect for cultural diversity. This involves:

- Promotion and preservation of cultural heritage and traditions
- Preservation of indigenous knowledge and languages
- Promotion of intercultural dialogue and understanding
- Supporting creative industries and cultural exchanges
- Deepen community ties and cultural expression in modern society

v) Institutional Sustainability

Institutional sustainability is the capability of governments, institutions, and organizations to design and implement policies and strategies that promote sustainable practices over time. This includes:

- Good governance and policy-making: Laws and regulations that promote sustainable practices
- Transparent and accountable institutions: Ensuring that there is trust and effectiveness

- International cooperation and agreements: The relationship between countries and the global management of common problems
- Tracking systems with evaluation for monitoring the progress of sustainable development programs

The above elements are not mutually exclusive but rather strongly interdependent. Success in one depends on the actions in others. For instance, economic growth cannot be deemed fully sustainable unless the growth process does not harm the environment and does not damage social structures.

The Importance of Textbooks for Secondary Level Students

Secondary school, particularly in Grades IX and X, is a formative stage in the life of a student. This stage transitions the foundational learning process to higher education, as advanced reasoning, problem-solving, and decision-making abilities are learned at this level. In addition, adolescents during this age are becoming aware of how to construct thoughts about the societal issues and problems of the world. This stage is also significant for teaching students the principles of sustainable development-not only as timely but essential; it's lifelong values instillers, providing students with opportunities to be educated, responsible citizens. Secondary school students find textbooks to be essential in the learning process because it is their resource base and starting point that anchors the education journey. Students learn from elementary concepts to sophisticated concepts at this crucial stage of schooling, and textbooks provide an ordered framework that would help in constructing knowledge, gaining understanding, and intellectual growth.

Reliable Source of Knowledge

Textbooks are curated by subject matter experts, ensuring the content is accurate, reliable, and aligned with educational standards. They present information in an organized manner, helping students grasp complex topics systematically. For secondary-level students, who encounter a broader and more intricate curriculum, this reliability ensures they are equipped with accurate and up-to-date knowledge.

Curriculum Alignment

The textbooks are best in terms of being in close conformity with the syllabus which ensures that every student learns necessary knowledge for achieving his or her academic assessment results, standardized testing, and a holistic development perspective. Textbooks provide teachers a lesson plan where students can stay focused on ideas important to meeting their academic achievement objectives.

Conceptual Clarity

At the secondary level, students learn various subjects including mathematics, science, history, and literature. Textbooks provide clear explanations, illustrative examples, and diagrams that make the subjects easy to understand for abstract concepts. For example, a science textbook includes labelled diagrams and experiments, helping visual learners and hands-on learning enthusiasts.

Development of Self-Learning Skills

Textbooks form a significant backbone for self-learning and independent studies. The teaching at the secondary level often emphasizes student-centred responsibility in learning. A textbook acts as a very reliable tool to refresh and assimilate the classroom knowledge. Exercising with textbooks helps improve the ability of the students toward logical thinking, analytical reasoning, and problem solving.

Standardized Learning Experience

Textbooks standardize the learning experience of students across different schools and regions. Students learn the same curriculum, which means that they have equal access to the same knowledge base, and thus there is a fair competition in academics. This uniformity is particularly important during board examinations, as questions are framed based on textbook content.

Bridge between Classroom Teaching and Exams

Textbooks serve as a link between what is taught in the classroom and what is tested in exams. Assessments at the secondary level rely heavily on textbook material, including examples, exercises, and theoretical explanations. Students who study textbooks thoroughly are better prepared for exams and can effectively tackle both theory-based and application-based questions.

Lifelong Learning Foundation

Contents for secondary-level texts are made for academic knowledge besides a lifelong base. Subjects that have to do with environmental science will teach pupils to be environmentally conscious. While history textbooks mold cultural and historical awareness, their knowledge will linger beyond school to create responsible citizens.

Accessibility and Cost-Effectiveness

Textbooks are widely available and relatively inexpensive compared to other sources of learning such as online courses or private tutors. Their physical nature allows the student to learn without the use of digital technology, thus providing equal opportunities for those with minimal access to the same.

In conclusion, textbooks play a crucial role in the lives of students at the secondary level. They are structured, reliable, and comprehensive sources of learning that contribute not only to academic success but also to personal development. Education is evolving, but textbooks will remain unshaken, which makes them the cornerstone of secondary education.

Need and Importance of the Study

Incorporation of sustainable development in education is not just an enhancement in pedagogy but a critical necessity in today's world. The following points highlight the need and importance of this study:

Addressing Global Challenges: In response to worldwide challenges such as climate change and resource depletion or biodiversity loss; socio-economic issues, education offers the basis in school curriculums towards sustainable development of equipping these young minds on how best they can work at solving the myriad of global concerns.

Moulding Future Citizens: The future leaders, policymakers, and change makers will be the students of today. Incorporating sustainability education in the formative years will ensure they develop a sense of responsibility and capability to make informed decisions positively impacting the environment and society.

Role of Textbooks in Education: In the Indian educational system, NCERT textbooks have been the cornerstone of learning tools for millions of students. This exercise evaluates its content in relation to sustainability themes, thereby ascertaining whether such crucial learning tools address effectively the broader objectives of education by fostering awareness and action for sustainability.

Alignment with Global and National Goals: Education systems worldwide are increasingly aligning curricula with the United Nations' Sustainable Development Goals (SDGs), particularly SDG 4.7, which emphasizes education for sustainable development. Analysing NCERT textbooks helps determine their compliance with these global and national goals.

Bridging the Research Gap: Although there is considerably vast literature across the globe on sustainability education, research concerning its inclusion in Indian school textbooks, especially from the context of studying English literature, is limited. The present study fills that gap, offering focused attention to the assessment of how sustainability themes are embedded.

Promotion of Holistic Education: The integration of sustainable development concepts in literature and language studies encourages interdisciplinary thinking, which allows students to relate abstract literary themes to real-life issues, thereby making the learning experience more holistic.

Policy Implications: The results of this study can be used by policymakers and curriculum developers to review and improve the curriculum so that the principles of sustainable development are fully integrated.

Significance of the study

The study highlights profound gaps in making SD fully pervasive throughout the curriculum. Recommendations made include revising content to specifically embed sustainability themes, creating interdisciplinary projects, and providing teacher resources for contextualizing narratives within the SD frameworks. Improved curricular strategies focusing on actionable and relatable sustainability content are suggested as a means to develop a responsible generation of environment-conscious and socially responsible learners. This research draws out the untapped potential of NCERT English textbooks in the education of sustainability. With a more integrated approach, these resources could play a transformative role in the preparation of young minds to meet and solve major global challenges more effectively. The study looks at how sustainable development themes are woven into the English NCERT textbooks for Grades IX and X. This research assesses the effectiveness of these approaches in instilling sustainable mind sets among learners by examining their content, narrative strategies, and pedagogical approaches.

2. OBJECTIVES

- 1) To find out sustainable development themes in English textbooks of secondary level.
- 2) To compare the sustainable development content with respect to-
 - Grade.
 - Themes

To analyse the content of sustainable development content with respect to-

- 1) Effectiveness of content integration
- 2) Pedagogical observations

To propose recommendations for enhancing the representation of sustainability in the curriculum.

Operational Definitions

Inclusion: The state of including and integrating sustainable development content in chapters of NCERT grade IXth and Xth textbooks as themes and sub-themes of sustainable development.

Sustainable Development:

Sustainable development refers to the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It encompasses three interconnected dimensions: environmental conservation, social equity, and economic growth. For this study, sustainable development is operationalized through its themes and principles as found in the content of Grade IX and X NCERT English textbooks.

Social Sustainability:

Social sustainability refers to the content related to ensuring equal opportunities, gender equity, social justice, human rights and inclusiveness while preserving cultural diversity and social cohesion.

Economic Sustainability:

Economic sustainability involves in the content which manage resources to generate long-term wealth and livelihoods while maintaining balance with social equity and environmental preservation. It prioritizes poverty alleviation, sustainable consumption and resource efficiency.

Environmental Sustainability:

Environmental sustainability refers to the content focuses on conservation of natural resources and biodiversity, combating climate change and promoting renewable energy and sustainable consumption and production practices.

English Textbooks:

English textbooks issued by the National Council of Educational Research and Training (NCERT) for Grades IX and X in the Indian school system are officially recognized textbooks used to teach English language and literature. These textbooks, which are designed for 13-15-year-old students, contain literary works, essays, stories, and discussions that may introduce topics related to society, development, and the environment.

Secondary Level:

Secondary level refers to the educational phase that includes Grades IX and X in the formal education system, typically catering to students aged 14 to 16. At this level, students develop more advanced skills in reasoning, analysis, and independent thought.

Textbook Analysis:

Textbook analysis involves systematically evaluating and categorizing the information, concepts, and themes presented in the textbooks. For this study, content analysis will focus specifically on identifying and assessing how sustainable development concepts are presented, how they align with global goals and the degree of emphasis placed on these ideas throughout the Grade IX and X English textbooks.

Delimitations

This research is delimited to:

Books published by NCERT are considered for this study.

Only grade IXth and Xth are taken in this study.

In this analysis, only content included in chapters are consider for content analysis.

Two books of grade IX and X- BEEHIVE and FIRST FLIGHT are selected for content analysis.

3. METHODOLOGY

Research method: The research employs qualitative content analysis to examine and compare the sustainable development content in NCERT English textbooks for Grades IX and X. In this content analysis, the book is considered as the unit of analysis and the chapter is considered as the unit of coding. Frequency, percentage, pie chart are used in this study for data analysis and interpretation.

Textbooks selected for the study:

Grade IX - Beehive

Grade X - First Flight

Table 1: Description of the textbooks for content analysis

No.	Class	Name of textbook	Textbook code	No. of chapters	Pub. Year
1	IX	Beehive	0959	21	2024
2	X	First Flight	1059	19	2024
Total Chapters				40	

The study focuses on the following: On the basis of reviews of various reports, published by UNESCO, Paris (France), the researcher selected many themes and sub-themes as a coding frame for content analysis of NCERT grade IXth and Xth textbooks. The description of themes and sub-themes is described in the following table 2-

Table 2: Description of themes and sub-themes of sustainable development content

Sr. No.	Themes	Sub-themes
1	Environmental	conservation
		climate change
		biodiversity
		renewable energy
2	Social	gender equity
		cultural diversity
		Social responsibility
		human rights
		social justice
3	Economic	poverty alleviation
		sustainable consumption
		resource efficiency

4. FINDINGS

To identify sustainable development themes in NCERT English textbooks for Grades IX and X:

ii. . Content analysis of IXth grade English textbook- Beehive

After examine the grade IXth English textbook “Beehive”, it was found that every chapter of the textbook is related to the themes and sub-themes of sustainable development. Sub-themes related to sustainable content in grade IXth English textbook are Conservation, Biodiversity, Social Justice, Cultural Diversity, Renewable Energy, Sustainable Consumption, Technological Innovations, Social Responsibility, Cultural Diversity, Resources efficiency and Poverty alleviation. The themes and Sub-themes of sustainable development content are presented in table 3-

Table 3: Presence of Sustainable Development Themes in textbooks of grades IX

Textbook’s name- Beehive

Class- IX

Sr. No.	Chapter’s Name	Theme	Sub-themes
Prose			
1	The Fun They Had	Economic	Technological Innovations
2	The Sound of Music	Social	Cultural Diversity
3	The Little Girl	Social	Social justice
4	A Truly Beautiful Mind	Economic	Technological Innovation

5	The Snake and the Mirror	Environmental	Conservation
6	My Childhood	Social	Social justice
7	Packing	Economic	Poverty alleviation Sustainable Consumption
8	Reach for the Top	Social	Social Responsibility
9	The Bond of Love	Environmental	Conservation
10	Kathmandu	Economic	Resources efficiency
11	If I Were You	Environmental	Conservation
Poetry			
12	The Road Not Taken	Environmental	Climate change
13	Wind	Environmental	Renewable Energy
14	Rain on the Roof	Environmental	Conservation
15	The Lake Isle of Innis free	Environmental	Conservation climate change
16	A Legend of the Northland	Environmental Economic	Biodiversity Resource efficiency
17	No Men Are Foreign	Social	Cultural Diversity Social Justice
18	The Duck and the Kangaroo	Environmental	Biodiversity Conservation
19	On Killing a Tree	Environmental	Conservation
20	The Snake Trying	Environmental	Conservation Biodiversity
21	A Slumber Did My Spirit Seal	Environmental	Conservation
Total frequencies		Social=05 Economic=05 Environmental=1 2	Conservation= 09 Biodiversity = 04 Social Justice= 02 Cultural Diversity= 02 Renewable Energy= 01

			Sustainable Consumption=01 Technological Innovations=2 Social Responsibility=01 Cultural Diversity=03 Resources efficiency=01 Poverty alleviation =01
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ii. Content analysis of Xth grade English textbook- First Flight

After thoroughly examine the grade X English textbook "First Flight" it was found that every chapter of textbook is related to the content of sustainable development except of poem no. 18 "Fog". Sub-themes related to sustainable content in grade IXth English textbook are Conservation, Renewable energy, Biodiversity, Social responsibility, Climate change, Cultural diversity, Human Rights, Social justice, Gender equity and Poverty alleviation. The themes and sub-themes of sustainable development contents are presented in a table 4-

Table4: Presence of Sustainable Development Themes in textbooks of grades X
Textbook's name- First Flight **Class- IX**

Sr. No.	Chapter's Name	Theme	Sub-themes
Prose			
1	A Letter to God	Social	Social Responsibility Social Equity
2	Long Walk to Freedom	Social	Human Rights Social Justice
3	Two Stories About Flying	Economic	Poverty alleviation
4	From the Diary of Anne Frank	Social	Social Responsibility Human Rights
5	Glimpses of India	Social Environmental	Cultural diversity Conservation
6	Mijbil the Otter	Social Environmental	Biodiversity Conservation
7	Madam Rides the Bus	Social	Gender Equity
8	The Sermon at Benares	Social	Cultural diversity
9	The Proposal	Social	Cultural diversity Social justice
Poetry			

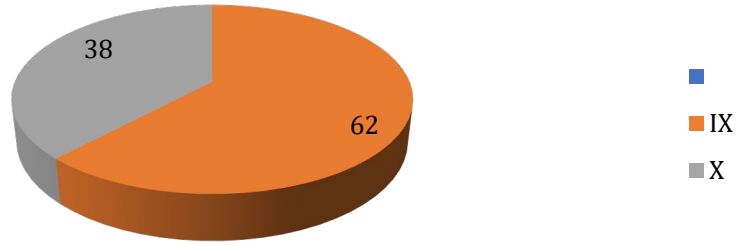
10	Dust of Snow	Environmental	Climate change
11	Fire and Ice	Environmental	climate change
12	A Tiger in the Zoo	Environmental	Conservation
13	How to Tell Wild Animals	Environmental	Biodiversity Conservation
14	The Ball Poem	Social	Social responsibility
15	Amanda!	Social	Gender equity
16	Animals	Environmental	Conservation Biodiversity
17	The Trees	Environmental	Conservation Renewable energy
18	Fog	-	-
19	For Anne Gregory	Social	Gender and Equality
Total frequencies		Social=11 Economic=01 Environmental=08	Conservation=06 Renewable energy=01 Biodiversity=03 Social responsibility=03 Climate change=02 Cultural diversity=03 Human Rights=02 Social justice=02 Gender equity =04 Poverty alleviation=01

To compare the content of sustainable development content with respect to-
Grade.

Table5: Grade-wise percentage of sustainable development content

Sr. No.	Grade	Frequency			Total Frequency	Percentage
		Environmental	Social	Economic		
1	IX	12	16	05	33	62
2	X	08	11	01	20	38

Figure1: Grade-wise percentage of sustainable development content



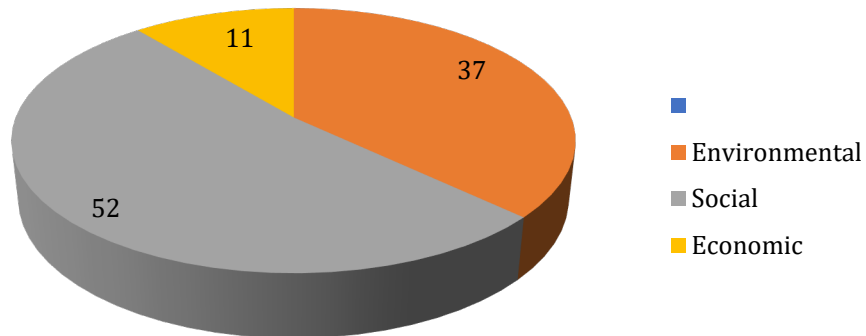
Above table and pie-chart indicates the presence of sustainable development content with respect to grade IX. The table depicts the frequencies of sustainable development content in Grade IX with respect to themes- environment, social and economic are respectively 12, 16 and 05. The total frequencies of sustainable development content are 33. The percentage of sustainable development content in IX Grade is 62% and in grade X, the percentage of sustainable development content is 38%. So, the textbook of grade IX has more content related to sustainable development than grade X.

Themes

Table6: Themes-wise percentage of sustainable development content

Sr. No.	Themes	Frequency		Total Frequency	Percentage
		Grade IX	Grade X		
1	Environmental	12	08	20	37
2	Social	16	11	27	52
3	Economic	05	01	06	11

Figure2: Themes-wise percentage of sustainable development content



Above table and pie-chart depicts the description of sustainable development content with reference to themes of sustainable development content. The frequencies in the textbooks of Grade IXth and Xth are 20, 27 and 06 according to environmental, social and economic themes respectively. The percentage of Representation in both textbooks is

respectively 37% 52% and 11%. It is concluded that the percentage of social themes of sustainable development content is very high and it covers half of the rest two themes. After social themes, environmental themes are 37% and economic theme is in very low with 11%.

5. TO ANALYSE THE CONTENT OF SUSTAINABLE DEVELOPMENT CONTENT WITH RESPECT TO-

5.1. EFFECTIVENESS OF CONTENT INTEGRATION:

- **Implicit Representation:** Most SD themes are subtly embedded in literary texts, requiring significant contextualization by educators to draw connections to broader sustainability goals.
- **Environmental Themes Dominance:** Conservation and appreciation of nature receive relatively more emphasis, but economic and social dimensions of sustainability are underrepresented.
- **Narrative Techniques:** Stories and poems effectively evoke emotional resonance but lack direct calls to action or critical discussion points on SD.

5.2. PEDAGOGICAL OBSERVATIONS:

- **Exercises and Activities:** Many exercises encourage critical thinking and creative writing but fail to explicitly link literary themes to sustainability issues.
- **Limited Interdisciplinary Links:** Opportunities for integrating SD concepts with science, geography, and civic studies remain underutilized.

6. TO PROPOSE RECOMMENDATIONS FOR ENHANCING THE REPRESENTATION OF SUSTAINABILITY IN THE CURRICULUM-

6.1. DISCUSSION

This paper highlights the gap between implicit representation and actionable sustainable development education. Textbooks have content that could inspire discussion on sustainability, but these themes often remain in the background in the face of literary and aesthetic considerations. For example, poems such as "The Lake Isle of Innis free," full of ecological imagery, do not relate to burning issues like climate change. Moreover, the textbooks emphasize environmental issues, less emphasize the social issues, and while neglecting economic aspects of sustainability. The stories about empathy and equality, like "My Childhood", may appeal to the SD values but are weakened if not clearly framed in the context of sustainability discourse. The grade IX material is more substantial than that of grade X.

6.2. RECOMMENDATIONS

- **Curriculum Reforms:** Discuss sustainability explicitly in the context of literature texts and associated exercises.
- **Enhanced Teacher Resources:** Provide educators with supplemental materials, such as lesson plans and case studies, to help connect textbook content to SD themes.
- **Thematic Expansion:** Include content that explicitly addresses poverty alleviation, gender equity, and sustainable economic practices.
- **Interdisciplinary Projects:** Encourage project-based learning integrating literature with actual sustainability activities.
- **Student Engagement:** Use debate questions, essay competitions, and drama scripts on SD scenarios to facilitate active learning.

7. CONCLUSION

The NCERT English textbooks for Grades IX and X hold a vast potential to contribute significantly to sustainability education. These books, by embedding the themes of sustainable development more explicitly, can be used to provide students with knowledge, values, and skills in order to respond to global challenges, especially at grade X. A cohesive strategy integrating content enhancement, teacher training, and interdisciplinary approaches is essential to foster a generation of responsible, environmentally-conscious citizens. This study underscores the importance of aligning textbook content with global sustainable development goals to promote holistic and transformative learning experiences.

CONFLICT OF INTERESTS

None.

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None.

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