Analyzing curriculum materials for the inclusion of contemporary geographic issues: A focus on grade nine geography textbook in Ethiopia

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Abstract

The primary objective of this study was to investigate the extent to which contemporary geographic issues are integrated into the Grade 9 textbook. To gather data, the study examined Grade 9 Geography textbook and involved Grade 9 students and Geography teachers as participants. Data were collected through document analysis and key informant interview. To analyze data, a combination of quantitative and qualitative analysis methods was employed. The results revealed that the textbook addressed important topics such as population growth, environmental degradation, pollution, deforestation, and soil erosion. However, these issues were primarily presented in terms of knowledge acquisition, with limited emphasis on developing students' attitudes, skills, and active engagement with these geographic challenges. Consequently, the study underscores the need for curriculum designers and textbook writers to incorporate relevant themes, objectives, and activities that promote not only knowledge but also the attitudes, skills, and engagement necessary to address contemporary geographic issues.

ARTICLE HISTORY
Received: 22 November, 2024
Accepted: 29 April, 2025

KEYWORDS
Contemporary geographic issues, integration, population growth, environmental degradation, environmental pollution

Introduction

The high level of interaction between people and their environment to fulfil their needs significantly affects the natural world, leading to numerous contemporary environmental problems. These issues, along with the disasters they cause, are collectively referred to as contemporary geographic issues (CGIs) (Education Services Australia, 2013; Nagendran, 2005). Contemporary geographic issues encompass a wide range of environmental challenges including global climate change, air and water pollution, soil and coastal erosion, drought, loss of biodiversity, deforestation, waste disposal, famine, food insecurity, natural hazards, flooding, urban development, population growth, migration, and

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DOI: https://dx.doi.org/10.4314/bdje.v25i2.8

poverty (Education Services Australia, 2013; IGU, 1992; Nagendran, 2005). Each of these issues poses a threat to the environment and has profound implications for human well-being.

To minimize the aforementioned issues, stakeholders have undertaken various efforts. For example, governments have allocated substantial budgets to address climate change, rehabilitate degraded land, and combat desertification and drought (Adessi, 2021; Hess, 2021; UNCCD, 2019). In addition to financial investments, governments have participated in international treaties and agreements to set targets for reducing the challenges caused by CGIs (Rogelj et al., 2016). Businesses have also become increasingly involved in implementing sustainable practices to solve problems related to the CGIs.

Over the past decades, CGIs have emerged as a global concern due to their significant impact on environmental degradation, human health, and economic and social well-being (Dai, 2013; Masih, 2015; Wang et al., 2017). Thus, governmental and non-governmental organizations in different parts of the world have crafted a lot of strategies to address the challenges in a sustainable and safe manner. One of the strategies is changing people's behaviors, skills and attitudes towards environmental sustainability through education, particularly through integrating CGIs into the school curricula.

To support this educational approach, numerous international conferences have been convened, including Stockholm in 1972, Belgrade in 1975, Tbilisi in 1977, Rio de Janeiro in 1992, Thessaloniki in 1997, and Johannesburg in 2002 (Palmer, 1998). At these conferences, participants developed and issued environmental education policies, goals, principles, and strategies for integrating issues related to current environmental problems in the school curricula. These conferences have also established foundational concepts and principles for incorporating CGIs into school curricula (Palmer, 1998).

As a result, educators have been striving to integrate CGIs into the Geography curricula and its teaching practices. Binbaşıoğlu and Deveci, as cited in Değirmenci and Ilter (2017), state that incorporating CGIs—pertaining to both immediate and distant environments—into Geography curricula enables students to better understand, analyze, and interpret local environmental issues, thereby fostering the development of practical solutions. Additionally, Arın and Deveci (2008) emphasized that the content of Geography lessons should be linked with everyday local and global environmental events.

Context of the Study

Ethiopia, like many other countries worldwide, faces numerous challenges related to contemporary geographic issues. Among the most pressing challenges are population growth, environmental degradation, environmental pollution, soil erosion, and deforestation (Oljirra, 2019). Research indicates that rapid population growth has become a significant issue in Ethiopia (UNDP, 2022). This substantial increase in population has had a profound impact on the environment (Kidane, 2020). As the population grows, forests are increasingly cleared for various purposes, including farming, firewood collection, and furniture production. For instance, forest coverage in Ethiopia has dramatically decreased from 65% to just 2.5%. Additionally, approximately 20,000 to 30,000 hectares of cropland in the highlands are eroded each year. Current studies further indicate that deforestation is escalating at an alarming rate (Oljirra, 2019). This trend not only threatens biodiversity but also exacerbates soil erosion and environmental pollution. This land degradation, beyond the loss of arable

land, contributes to a decrease in agricultural productivity exacerbating food insecurity (UNEP, 2013).

To address the challenges posed by those CGIs, Ethiopia has implemented various mitigation strategies. One of the key strategies involves integrating CGIs into the school curricula, guided by several international frameworks and considering the prevalence of CGIs at global and local levels. As a result, the country has focused on addressing environmental problems related to CGIs within its education system, leading to the development of education and training policies aimed at sustainable environmental conservation since 1994 (Ministry of Education—MoE, 2010, 2015, 2019). These educational frameworks were designed to promote environmental conservation as part of an all-rounded development approach, encouraging students to actively participate in the development and sustainable utilization of resources and the environment. The Ethiopian Education Development Roadmap Program, introduced in 2018, further reinforces this initiative (MoE, 2019). This roadmap emphasizes that curriculum designers and textbook writers should integrate CGIs into educational materials and encourage learners and teachers to connect daily lessons with real-environmental problems in the local context to develop learners' knowledge, skills, values, and behaviours necessary for sustainable environmental protection.

Various responsible bodies, including the Ministry of Education, the Environmental Authority (EA), and the Ethiopian Environment, Forest, and Climate Change Commission (EFCCC), have also prepared guidelines to facilitate the integration of CGIs into school curricula (EFCCC, 2019). Studies also show that Ethiopia has integrated CGIs into the curricula of all educational levels (Abera, 2018; Aklilu, 2012).

However, to the best of the researchers' knowledge, there has been limited attention given to the specific types of CGIs integrated into the school curricula and the effectiveness of their incorporation into student textbooks, particularly in Geography textbooks. By addressing this gap, this study aims to provide valuable insights into how CGIs are integrated into Geography curriculum materials, ultimately enhancing students' knowledge, attitudes, and skills in solving problems related to CGIs.

To achieve this purpose, the present study is organized around the following research questions: (1) to what extent does the Grade 9 Geography textbook integrate content related to contemporary geographic issues? (2) To what degree are the objectives incorporated into the textbook aligned with contemporary geographic issues? (3) To what extent do the learning activities within the textbook reflect contemporary geographic issues?

Methods

Research Approach and Design

This research adopts a mixed research approach. The investigators employed this approach for the following reasons. First, it is more valid and reliable in the process of data collection as it avoids the bias caused by using single methods. Second, the investigators realized that a single approach (only quantitative or qualitative) cannot provide adequate data to answer the research questions. Regarding this, Creswell and Creswell (2018) indicate that when the data obtained from quantitative and qualitative methods are triangulated, converged, integrated or connected, the bias caused by the researcher or the participants of

the study can be reduced. Regarding its design, this study employed a type of concurrent embedded research design because the investigators embedded the qualitative data within the quantitative data during analysis and interpretation.

Sampling

The primary focus of this study was Grade 9 Geography studen textbook. This textbook was selected as subject of the study for the following reasons. First, the textbook was chosen over other subjects because Geography, by its nature is closely related to CGIs, and its curricula are particularly well-aligned with the contents, objectives, and activities associated with CGIs.

Second, this curriculum material was published recently in 2022 and has been in use as a textbook since the 2023/2024 academic year. However, the Grade 11 and 12 Geography textbooks were not published recently. In these grade levels, both teachers and students have been using previously published textbooks from before six years ago. Owing to this, the investigators believed that these older materials may not incorporate CGIs discussed in various media outlets. Therefore, the investigators posited that the Grade 9 textbook has the potential to better integrate CGIs that are most prevalent at both global and local levels.

Third, the contents of the grade 9 Geography textbook mainly focus on Ethiopia. Therefore, the investigators initiated to explore how well local CGIs are integrated in this textbook. Finally, since investigating CGIs and taking remedial measures are integral components of the Sustainable Development Goals (SDGs), which many countries worldwide are striving to achieve by 2030, the investigators believe that the study can be used as an input for fulfilling SDGs.

In addition to the Grade 9 Geography textbook, Grade 9 students and teachers were included as participants in the study, specifically to gather qualitative data. These participants were used to include the perspectives of both teachers and students on the integration of CGIs in the textbook. The qualitative data obtained from these respondents was intended to complement the quantitative findings derived from the document review. Thus, a total of six Grade 9 students and six Geography teachers were purposefully selected from secondary schools located in East Gojjam and Awi Administrative Zones.

The administrative zones were chosen because several secondary schools within them were operational during the 2023/2024 academic year. School selection was based on geographical distribution, with three schools selected from each zone. From the East Gojjam Zone, Nigus Tekle Haimanot, Menkorer, and Gojjam Ber secondary schools were selected, while Injibara, Ankesha, and Azena secondary schools were chosen from the Awi Zone. In each of the selected schools, one student and one teacher were purposefully chosen as key informants, based on recommendations from department heads, for their ability to provide relevant and reliable information about the integration of CGIs in Geography textbook.

Data Collection Instruments

The main data collection method was a document review. The contents of the Grade 9 Geography textbook currently in use were examined to assess the extent of integration of various types of CGIs, as well as to evaluate how effectively the objectives, contents, and activities associated with each CGI are incorporated into the material. To determine whether

the contents, objectives, and activities are addressed in a balanced manner, the researchers employed the principles established during the Tbilisi Conference held in 1972 as the baseline reference. In this conference, it was suggested that when curriculum designers and textbook writers prepare educational materials, they should, as much as possible, integrate contents, objectives, and activities in a manner that promotes the development of students' knowledge, attitudes, and skills in a balanced way (UN, 1973).

In addition, the researchers followed UNESCO's environmental education objectives (UNESCO, 1978). In this document, it was recommended that when environmental issues are integrated into school curricula, the contents, objectives, and activities of each issue should be given equal emphasis to foster the development of students' knowledge, awareness, attitudes, skills, and participation. Specifically, it was advised that material developers assess whether the curriculum materials encourage students to develop environmental awareness and sensitivity, deepen their understanding of environmental challenges, cultivate concern for the environment, acquire skills to identify and address environmental problems, and engage in activities that contribute to environmental improvement.

Therefore, based on the principles outlined in the United Nations (UN, 1973) and UNESCO (1978) documents, the researchers evaluated how frequently the contents, objectives, and activities aimed at developing students' knowledge, attitudes, and skills related to each CGI are integrated in a balanced manner. Additionally, drawing from these documents, the investigators identified which learning outcomes—whether knowledge, attitudes, or skills—are emphasized most prominently in the textbook.

To collect data through document review, three steps were followed. First, a coding sheet was developed to identify the units incorporated in the textbook. This process involved considering various levels of analysis, such as the entire textbook, chapters, sections, paragraphs, sentences, words, objectives, and activities. The approach was guided by the recommendations of Elo and Kyngas (2008). Second, relevant information was systematically extracted from the textbook using the coding sheet, with key passages and data being highlighted, annotated, and summarized. Third, the collected data was organized and prepared for analysis to ensure it was ready for subsequent examination.

A key informant interview, which was prepared in the form of a semi-structured interview, was the second instrument employed in this study for two main reasons. First, this method provides participants with the freedom to express their responses in an open-ended manner, using their own words so that they are free to give more genuine and varied insights (Creswell & Creswell, 2018). Second, key informant interview is particularly useful for uncovering hidden data. That is, as the participants discuss and narrate their teaching and learning experiences, the interviewer can probe deeper to reveal insights that might not be readily apparent through other data collection instruments.

Data Analysis

The data collected through the two instruments were analyzed using both quantitative and qualitative techniques. For the quantitative data obtained from document review, the following procedures were followed: first, the data were coded, edited, and digitized before being entered into SPSS version 26 for analysis. Descriptive statistics, including frequency

distributions and percentages, were used to examine the extent to which the contents, objectives, and activities related to CGIs were integrated into the textbooks.

Additionally, inferential statistics, specifically the Chi-square goodness-of-fit test, were employed to determine whether there were significant differences between the expected and observed frequencies concerning the integration of the three key objectives—knowledge, attitudes, and skills—within the textbooks. This comprehensive analytical approach provided a thorough understanding of how effectively CGIs are incorporated into the Grade 9 Geography textbook, offering valuable insights into the quality of the educational materials and their potential impact on students.

For the qualitative data collected through key informant interview, the researchers followed a systematic process. This involved translating the interview data from Amharic to English, transcribing the interviews verbatim, and thoroughly reviewing the transcripts through multiple readings to ensure comprehensive understanding. The data were then coded and organized into categories, which were subsequently grouped into overarching themes. Finally, the findings were presented using thematic analysis, incorporating descriptive explanations and supporting quotations to illustrate and enrich the insights obtained from the interviews, complementing the data gathered from the document review.

Ethical Considerations

Various procedures were implemented to ensure ethical conduct throughout the study. Initially, the principal investigator secured a permission letter from Bahir Dar University, where she attended her Doctoral study. This letter was then provided to the school directors, along with an explanation of the study's purpose. Once permission was granted by the directors, the investigators reached out to the study participants, clarifying the purpose of the research and what would be expected of them. Participants were assured that their responses would remain confidential and used solely for research purposes, with their identities protected in the study findings. Additionally, participants were informed that their involvement was entirely voluntary; they could not participate without giving informed consent and could withdraw from the study at any point if they felt uncomfortable. Finally, the researchers obtained written consent from all participants before conducting the in-depth interviews.

Results

Reflecting the research questions, this section presents the results of the study organized under the following themes: the integration of contents related to contemporary geographic issues (CGIs), the incorporation of CGI-related objectives, and the integration of CGI-related learning activities.

The Integration of Contents Related to CGIs

The data obtained from document analysis reveals that Grade 9 Geography student textbook integrated CGIs that are prevalent at both global and local levels. These include population growth, environmental degradation, environmental pollution, deforestation and soil erosion (see Table 1).

Table 1

Contents Integrated in Grades 9 Geography Textbooks

Types of CGIs	Page	Contents Related to CGIs	fr.	Rank
Population growth	89, 164, 165	Definitions	1	4
		Trends	7	2
		Consequences	32	1
		Solutions	5	3
Environmental Degradation	111	Causes	4	1
		Effects	4	1
Environmental Pollution	114,161,172	Definitions	5	2
		Causes	15	1
		Consequences	2	3
Degradation	169, 170	Definitions	2	4
		Causes	9	2
		Consequences	14	1
		Solutions	6	3
Soil Erosion	174, 175, 176	Definitions	1	4
		Causes	21	1
		Consequences	9	3
		Solutions	11	2

However, as can be seen from Table 1, the manner in which the contents of CGIs integrated into the textbook is not much appropriate. Much of the content focuses on definitions, causes, consequences, and occasionally solutions to these issues. The contents are primarily designed to enhance students' cognitive understanding of the issues. However, the textbook fails to incorporate essential content aimed at enhancing students' sensitivity, attitudes, skills, and participation in population growth. Owing to this, the textbook fails to foster students' understanding of CGIs. For example, under environmental degradation, only two topics were covered: the causes (p. 111) and the consequences of environmental degradation (p. 111). The textbook fails to include other essential contents on environmental degradation, such as key concepts and mitigation strategies. More importantly, the textbook overlooks topics aimed at increasing students' attitudes, sensitivity, skills, and participation concerning environmental degradation. This implies that the textbook is short of engaging students meaningfully with the pressing issues of environmental degradation. Contents related to environmental pollution are also integrated very rarely in the textbook. The textbook lacks content that enhances learners' problem-solving skills, sensitivity, attitudes, and environmental behavior regarding environmental pollution.

The contents related to deforestation and soil erosion are presented in detail more than the other topics of the issues. Under deforestation, the textbook presents definitions (2 times), causes (9 times), consequences (14 times), and solutions (16 times)(p. 180-185). Nevertheless, it fails to provide insights into sustainable practices or problem solving skills. Similarly, under the topic soil erosion, the textbook includes different topics such as definitions (1 time), causes (21 times), consequences (9 times), and solutions (11 times). Detailed explanations are also provided regarding the meaning of soil erosion, its causes, consequences, and solutions, thereby enhancing students' knowledge and understanding of the topic (p. 174-176). However, the textbook does not incorporate contents used to foster students' sensitivity, skills and participation in addressing problems related to soil erosion.

Interview data obtained from Grade 9 students and teachers further indicate that the textbook does not adequately incorporate content aimed at developing the three domains of learning equally. Most respondents noted that the textbook emphasizes developing students' knowledge and understanding of the issues, particularly the meanings, causes, consequences, and solutions of CGIs. This imbalance indicates a need for a more comprehensive approach that not only informs students but also encourages active engagement and critical thinking regarding environmental issues. For instance, Student 2 articulated this sentiment in the following way:

> The contemporary geographic issues integrated in our textbook are easy to understand as we started to learn them at lower grade level and got some information about the issues from different media like TV. Some experts who work in environmental protection offices in our local area also informed us about the causes, consequences and solutions of these issues. Therefore, when I read a topic/content related to these issues, I can easily understand what it means, its causes, consequences and solutions. However, I feel that I have not acquired skills used to solve problems related to these issues (Student 2, 2023/2024).

When students were asked how the integration of content of CGIs in their textbooks affected their attitudes and sensitivity toward these issues, their responses varied. Two students reported that their attitudes toward CGIs had changed, leading them to become more sensitive to certain topics. In contrast, four students indicated that they did not experience much behavioral change regarding their commitment to addressing problems associated with these issues. These students expressed that the content related to each CGI was not presented in a way that would alter their perceptions of the importance of the issues. Although they acknowledged that they gained valuable knowledge from the material, they felt it lacked the persuasive impact necessary to change their attitudes, values, and behaviors concerning CGIs. In light of this, one student remarked, "Although I have gained good knowledge about the issues integrated into the textbook, I cannot say that I have developed my skills, attitudes, and participation regarding solving the problems of a particular issue"(Student 3, 2023/20240). Another student added, "The textbook does not include content designed to enhance our skills and participation in solving problems related to CGIs. It fails to address the specific challenges different countries face concerning each issue, how they are attempting to resolve these problems, and what may happen in the future if these issues remain unaddressed"(Student 5, 2023/2024). Overall, while the integration of CGIs in the textbook

provides students with knowledge, it appears insufficient in fostering the necessary attitudes and behaviours used to engage meaningfully with these critical global issues.

All the participant teachers also reported that the textbook includes CGIs that are prevalent both globally and locally. Regarding the effectiveness of the integration of each CGIs in the textbook; however, opinions varied among the teachers. While two teachers felt that the components of each CGI were integrated effectively, the other four teachers expressed that the components of CGIs were not well integrated. The first two teachers noted that the textbook integrated the most prevalent CGIs that occur at both global and local levels, helping students develop their knowledge, skills, and attitudes related to CGIs. As a result, they believe that students can acquire the necessary knowledge, skills, and attitudes that help them actively participate in addressing environmental problems in their surroundings. For example, Teacher 1 reflected, "I feel that grade 9 Geography textbook incorporated different types of contemporary geographic issues such as population growth, land degradation, soil erosion and others. I also feel that our students can get good knowledge about the issues" (Teacher 1, 2024).

On the other hand, other four teachers feel that although the textbook integrated the most prevalent CGIs found at the local and global levels, it disregarded some of the most important components of CGIs. They reported that the textbook mainly focused on meanings, causes, consequences and solutions of CGIs that encourage students to develop their knowledge and understanding of the issues. These participants, on the other hand, disclosed that the textbook does not incorporate topics/issues used to promote students' attitudes, skills, and participations of solving problems related to each issue. For example, Teacher 4 states it like this. "The textbook does not incorporate different strategies that can help the learners develop a strong sense of responsibility on CGIs occurred at local level." In the same vein, Teacher 6 states, "The textbook mainly focuses on concepts related to different contemporary geographic issue used to develop students' knowledge, but it covers very few contents that highlight how students' develop their skills of solving environmental problems"(Teacher 4, 2024).

In general, the data obtained from document analysis and key informant interviews indicate that Grade 9 Geography textbook faced significant challenges of integrating CGIs although it includes issues that are prevalent at both local and global levels. It overlooked essential content that addresses ethical considerations in consuming, preserving, and protecting these issues. Additionally, the textbook lacks aesthetic elements that facilitate learning through real-world contexts, such as hands-on activities involving doing, touching, observing, appreciating, and practicing. This oversight implies that the textbook does not effectively enhance learners' sensitivity to environmental issues or that it lacks to foster their creativity and problem-solving skills.

The Incorporation of CGI-related Objectives

The data obtained from document review indicated that the total number of objectives found in the Grade 9 Geography textbook is 79. Out of these objectives, 14 are related to CGIs. That is, while 82.28% of the objectives focused on other issues or contents, only 17.72% are dedicated to objectives related to CGIs. Compared to the problems of CGIs in Ethiopian context, the findings reveal that limited emphasis placed on contemporary

geographic issues within the curriculum. Moreover, the objectives incorporated in the Grade 9 Geography textbook show a significant emphasis on knowledge acquisition (see Table 2). Specifically, while 71.43% of the objectives focus on the knowledge aspects of CGIs, only 21.45%, and 7.12% objectives focused on skills and attitudes respectively.

Table 2

Analysis of Objectives Related to Contemporary Geographic Issues

Total Objectives Related to CGIs		CGIs Objectives Developed in the Total Objectives					
		Knowledge		Attitudes		Skills	
No.	%	No.	%	No.	%	No.	%
14	100	11	71.43	1	7.12	3	21. 45

This distribution implies that the objectives within the textbook are not presented in a balanced manner. That is, while there is a strong emphasis on enhancing students' knowledge of CGIs, less focus is placed on fostering positive attitudes toward these issues and developing problem-solving skills related to CGIs.

The Chi-square results indicated in Table 3 also revealed a significant mean difference between the observed and expected frequencies of CGI objectives in the Grade 9 Geography textbook, with a chi-square value of $X^2(2, N=3) = 10.05$. This finding implies that the three domains of learning (cognitive, affective, and psychomotor) are not fairly distributed across the textbook under discussion.

Table 3

Chi-square Goodness of Fit test for CGI Objectives Developed in the Material

Total CGIs Objectives	Observed Frequencies	Expected Frequencies	Chi-square (X^2)	Degree of Freedom
Knowledge	11	4.67	10.05	2
Skills	3	4. 67		
Attitudes	1	4.67		
Total	14			

**P<0.05*

The Integration of CGI-related Learning Activities

The data obtained from document review and key informant interview indicated that Grade 9 Geography textbook has included a variety of learning activities. The textbook featured 50 activities that encourage students to engage in different tasks. Within these activities, a total of 140 questions were incorporated, each designed with different objectives. However, only 41 of the 140 questions (29.3%) are related to CGIs. This implies that the textbook integrates a few of activities that enhance students' understandings, concerns, skills and participation on problems related to CGIs such as soil erosion, land degradation, deforestation, population growth and environmental pollution.

To identify the specific learning outcomes each question focuses on, the study examined each question and categorized them into three areas: activities designed to enhance students' knowledge, attitudes, and skills. As indicated in Table 4, from the 41 questions related to CGIs, most (82.92%) aimed to assess students' comprehension of these issues. These questions encourage students to recognize and gain a deeper and more comprehensive understanding of the meanings, causes, consequences, and solutions related to CGIs.

Table 4

Activities and questions developed in grade 9 Geography textbook

Total Number of Activities Developed	Number of Questions Under Each Activity	Number of Questions Related to CGIs	Questions Related to Objectives of CGIs					
			Knowledge		Attitudes		Skills	
			No.	%	No.	%	No.	%
50	140	41	34	82.92	4	9.76	3	7.32

On the other hand, a few of the questions aimed at enhancing students' attitudes toward CGIs and developing their problem-solving skills related to these issues. As can be seen in Table 4, 4 questions (9.76%) focused on enhancing students' attitudes toward CGIs, while 3 questions (7.32%) were designed to develop students' skills for solving problems associated with CGIs.

The students were also asked whether the activities incorporated in their textbook enhance their knowledge, skills, and attitudes toward CGIs equally. Five of the respondents indicated that most of the activities in their textbooks play a vital role in enhancing their cognitive understanding of each type of issue. Additionally, they noted that the learning activities provide a dynamic and supportive environment that enhances their comprehension and retention of each CGI.

However, most of the activities in the textbook do not encourage them to engage in tasks that aimed at developing their skills for solving environmental problems. For example, student 2 reported the following:

> For me, I have done a lot of activities from the Geography textbook. However, most of the activities, as I remember, encourage us to recall what we have learned. Only few of the activities help us to develop our attitudes and skills towards each CGI.

Student 4 also added the following:

> Most of the activities I observed in the textbook make me recall the definitions, causes and consequences of each issue. The textbook rarely encourages the students to participate in solving problems related to CGIs.

On the other hand, student 6 states that the textbook featured activities that enhance his knowledge, skills and attitudes although the activities give more emphasis for enhancing their knowledge of CGIs, particularly meanings, causes, consequences and solutions regarding CGIs. In line with this, the students said the following: "Grade 9 Geography textbook contains activities that enhance students' knowledge, attitude and skills of CGIs. However, the activities encourage us to develop our knowledge."

The students were also asked if the activities prompted them to participate in field observations, hands-on activities, experiments, gardening, conservation projects, or self-assessments and reflections, they replied with a resounding "No." As a result, they feel that they are unable to solve specific local contemporary geographic challenges that affect their environment. For example, Student 1 stated, “I do many activities that enhance my knowledge and understanding of the meanings, causes, and consequences of CGIs, but my skills of problem solving is not well developed.”

The participant teachers also noted that most of the activities designed in the textbook primarily focus on enhancing students’ cognitive knowledge. However, only a few questions in each activity encourage students to engage in hands-on experiences, for example, field trips and project-based learning. They feel that the textbook missed questions that are essential for establishing a direct connection with CGIs enhancing critical thinking skills, and empowering students to take action on problems occurred in their local areas. Moreover, teachers reported that the questions designed in the textbook do not effectively develop students’ attitudes and sensitivity toward CGIs. They felt that most of the questions in each activity failed to motivate students to engage in environmental problems, foster a sense of responsibility for protecting the environment, and contribute to an appreciation, care, and concern for it. For example, Teacher 1 expressed this concern as:

> Having a positive attitude is the foundation for protecting our environment. Without a positive attitude, no one can participate in solving the problems. Therefore, the activities found in the students’ textbook should promote a positive attitude toward our environment. If students have a positive attitude, they become sensitive to the issues related to our environment and are more likely to get involved in solving those problems (Teacher 1, 2023/2024).

In the same vein, Teacher 3 echoed these sentiments, emphasizing the importance of fostering a proactive mindset in students:

> Of course, the textbook incorporates many activities that enhance students’ knowledge of the issues, but the activities are not balanced. For example, there are a few activities that enhance students’ attitude towards the contemporary issues that occur at the local or global level. Therefore, it is necessary to add activities used to develop affective and behavioral skills of the learners so that the students can engage in solving problems related to a particular CGI (Teacher 3, 2023/2024).

Overall, the data obtained from document reviews and in-depth interviews indicated that the questions designed under each activity in the textbook primarily serve as tools for assessing students' understanding of concepts related to CGIs. While these activities significantly contribute to students' cognitive comprehension, they often fall short in promoting the exploration of real-life problems associated with these issues. Many of the activities do not effectively foster the development of attitudes and skills pertinent to CGIs. The questions frequently lack opportunities for students to identify and solve problems related to contemporary geographic issues. This implies that the textbook does not adequately prepare the students to become informed and responsible stewards of their environment.

Discussion

The results of the present study revealed that the Grade 9 Geography textbook integrated CGIs which are prevalent at the global and local levels. These issues include population growth, environmental degradation, environmental pollution, deforestation, and soil erosion. Similar studies have also investigated the incorporation of these CGIs into school curricula across various contexts. For instance, Antonelli (2022) examined that rapid population growth contributes to loss of biodiversity and resource depletion, highlighting the urgent need for educational interventions. Furthermore, research by Dodson et al. (2020) identified a positive correlation between population growth and climate change. These authors suggested that integrating discussions of population growth and its related challenges into school curricula equips educators to better prepare students for addressing these critical issues. By doing so, it is possible to cultivate a generation of informed individuals capable of engaging with and mitigating the complex problems our world faces today. This implies that the integration of CGIs into school curricula is necessary for preparing students to confront the complex environmental challenges.

In light of environmental degradation, previous studies indicated that it is an emerging pressing global issue and a focal point for integrating it into the school curricula. For instance, Ardoin et al. (2018) discovered that rapid deforestation results in a significant loss of biodiversity, which subsequently contributes to land degradation. Thus, their findings underscore the urgency of addressing this issue by integrating into school curricula. By doing so, we can encourage a collective response to the environmental crises we face today. These findings imply that addressing environmental degradation through educational integration and community engagement can facilitate a comprehensive approach to tackling this urgent issue.

The data from in-depth interviews also revealed the integration of CGIs into the Geography textbook, and they recognized the relevance of these issues within their local context. As a result of this integration, participants reported possessing a solid understanding of each type of CGI. They noted that the concepts, causes, consequences, and solutions presented in the textbooks were clearly articulated, making it easier for students to grasp the material. These findings align with those from other studies conducted in various countries, reinforcing the importance of incorporating CGIs into educational curricula to deepen students' comprehension of pressing global and local challenges. For instance, Alkaher and Carmi (2019) found that integrating population growth into school curricula helps students understand both the phenomenon of population growth and its environmental impacts. Similarly, Mandal and Mete (2023) explored how the inclusion of population growth in curricula promotes awareness about its effects on the environment, family life, and overall well-being. Overall, these insights underscore the critical role of educational integration in equipping students with the knowledge necessary to navigate and address contemporary issues.

By using three parameters, that is, how well objectives, contents, and activities are incorporated in the textbook under each types of CGI, the effectiveness of the integration of the CGIs was also evaluated. Regarding the integration of objectives related to CGIs, the findings indicate that most objectives in the textbook emphasize other content areas rather than CGIs. Out of a total of 79 objectives, only 14 (17.7%) were directly related to CGIs. Among these, the majority (71.43%) focused on enhancing students' cognitive knowledge of

the issues. However, the textbook included only a small percentage of objectives aimed at enhancing students' attitudes (7.12%) and their skills in solving problems related to CGIs (21.45%).

This approach contrasts significantly with the recommendations of various authors. Scholars emphasize that objectives integrated under each CGI should provide students with foundational knowledge while also fostering problem-solving skills. This enables them to analyse environmental problems, evaluate evidence, and formulate solutions effectively. Additionally, they stress the importance of incorporating objectives that motivate students to take responsible actions within their communities. This implies that while integrating objectives related to CGIs into textbook a more holistic approach that balances knowledge, attitudes, and problem-solving skills is essential for fostering a comprehensive understanding of these critical issues among students.

In relation to the integration of activities, the results revealed that Grade 9 Geography textbook incorporates a variety of activities designed to engage students. According to data obtained from the document review, a total of 50 activities, which include 140 questions have been developed for this textbook. However, only 41 of these questions (29.29%) are related to CGIs. Even from these questions, most of them focus on developing students' cognitive understanding of the CGIs presented in the textbook, and, only a limited number of questions aim to enhance students' attitudes and skills related to these important issues. This approach contrasts sharply with recommendations from previous literature, which suggests that activities addressing current environmental issues should employ a wide range of methods to promote not only knowledge acquisition but also development of attitudes and skills associated with CGIs. For instance, Bonney et al. (2009) emphasize that textbooks should include activities that immerse learners in real-world situations. They recommend that activities such as field trips, nature walks, and guided tours should be incorporated to deepen students’ understanding of specific environmental issues and develop their skills and attitude towards the issues. Dichev and Dicheva (2017) also noted incorporating game-based learning activities, such as role-playing, can enhance students' motivation, sensitivity, participations and encourage pro-environmental behavior.

In conclusion, while Grade 9 Geography textbook includes a variety of activities, there is a significant need for a more balanced approach that not only develops cognitive knowledge but also promotes students' attitudes and skills related to CGIs. By aligning the activities with the recommendations from educational literature, we can better prepare students to engage with and address the environmental challenges facing their communities and the world.

Conclusion and Implications

The findings of the present study indicate that Grade 9 Geography textbook has integrated contemporary geographic issues that are common at the global and local levels. These CGIs include population growth, environmental degradation, environmental pollution, deforestation, and soil erosion. Under each contemporary geographic issue, the textbook incorporates various components, including content, objectives, and activities.

However, these components are not evenly balanced in their integration. Most of the content and activities focus on enhancing students' cognitive knowledge and understanding of

contemporary geographic issues. There is insufficient emphasis on developing students' attitudes, which are essential for cultivating a sense of responsibility, empathy, and commitment to environmental stewardship. Additionally, practical skills that could foster active involvement in addressing environmental issues through hands-on activities are notably underrepresented.

These findings imply that policymakers should create clear guidelines that outline how contemporary geographic issues should be integrated across different grade levels. This could include providing frameworks that suggest specific topics, case studies, and teaching methodologies for educators. Curriculum designers and textbook authors should also strive for a more balanced approach. They should incorporate objectives, content, and activities equally under each CGI to promote students' knowledge, attitudes, and skills regarding contemporary geographic issues. Achieving this balance is crucial for preparing students to engage meaningfully with environmental challenges and contribute to effective solutions. By doing so, educators can empower students to become informed and responsible citizens who are equipped to tackle the pressing environmental issues of our time.

The researchers believe that this study has paved the way for further research into the effectiveness of integrating contemporary geographic issues (CGIs) in education. Future studies could explore how students engage with these topics, examine the impact on their attitudes toward environmental issues, and assess the long-term benefits of incorporating such educational strategies.

Acknowledgement

We would like to express our gratitude to grade 9 students and teachers for their cooperation in giving genuine and valid data during in-depth interviews.

Funding Information

This research was funded by Bahir Dar University.

Declaration of Conflict

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed Consent

Informed consent was obtained from all subjects involved in the study, and the study was conducted after the informed consent was obtained from the participants.

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