

# Exploring the Consistencies Between Learning Outcomes and the Contents of Climate Change Issues in Bangladesh and Global Studies Curriculum and Textbooks at the Lower Secondary Level

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This study was conducted to explore the consistencies between learning outcomes and the contents of climate change issues in the Bangladesh and Global Studies (BGS) curriculum and textbooks at the lower secondary level. BGS textbooks for grades six, seven, and eight were selected to conduct this study. The researchers primarily focused on the climate change issue as a current social need of the learners. A qualitative methodology was employed to gain a comprehensive understanding, and data were collected by analysing related documents and conducting interviews with BGS secondary school teachers and curriculum experts. The researchers used a semi-structured interview schedule to record data from the respondents. The collected data was analysed thematically. A significant finding of this study identified that the textbook contents on climate change issues are consistent to a considerable extent with the learning outcomes of the lower secondary level curriculum. Besides that, the study also found that more pictures and content on specific topics will be more conducive to the learners. Based on the findings, the researchers have suggested some recommendations.

**Keywords:** climate change education (CCE), curriculum alignment, textbook analysis, secondary education, learning outcomes, environmental education

## Introduction

The necessity of curriculum change has been illustrated by Ornstein and Hunkins (2018), who stated that curriculum change is driven by adapting the existing education system to align with the overall socioeconomic, scientific, and technological progress. Thus, it can produce human resources with the necessary knowledge and skills. The BGS curriculum (National Curriculum and Textbook Board, 2012) was reformed to provide learners with critical and current knowledge and skills, and BGS textbooks were also designed in relation to this curriculum. Generally, a textbook is the primary component for achieving the learning outcomes in the curriculum. The curriculum is the sum of experiences learners achieve in an educational process (Ornstein & Hunkins, 2018). This curriculum includes learning outcomes that examine how global warming and climate change cause natural and social disasters. To achieve these learning outcomes, relevant content is provided in the textbook.

Therefore, it is essential to ensure consistency between the textbook's contents and the learning outcomes of the curriculum.


Quality education is essential to ensure proper education. Quality education requires many things, like a standard curriculum and textbooks. According to the National Education Policy 2010 (NEP; Ministry of Education, Government of the People's Republic of Bangladesh, 2011), specific learning outcomes are established in the curriculum, and textbooks contain the content necessary to achieve these learning outcomes. Therefore, maintaining consistency between the curriculum's learning outcomes and the textbook's content is essential. Any lack in the textbook content disrupts the achievement of the curriculum's learning outcomes. Groom (2012) stated that Bangladesh is already vulnerable to climate change-related extreme events and natural disasters. In this context, the researchers emphasise the climate change issue.

Through this study, an attempt was made to explore whether the textbook's contents are consistent with the learning outcomes outlined in the BGS curriculum on climate change issues. Climate change has become a significant and

Bangladesh Journal of Educational Research, Vol. 12, No. 1, pp. 1-8

Print ISSN 2313-2515 Online ISSN 3080-6925

DOI: <https://doi.org/10.3329/bjer.v12i1.87160>

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Publisher: Institute of Education and Research, University of Rajshahi

<https://www.banglajol.info/index.php/BJER>

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alarming issue in Bangladesh. Bangladesh's unique geographic location, reliance on natural resources, and socio-economic challenges make it particularly vulnerable to climate change, leading to severe impacts such as forced displacement, loss of homes and livelihoods, and significant repercussions for the economy and development (Roy, Hanlon, & Hulme, 2016). Moniruzzaman (2012) added that waterlogging in Bangladesh, exacerbated by climate change, leads to settlement inundation, salinity intrusion, and loss of biodiversity, severely impacting agriculture, fisheries, health, and education, ultimately forcing people to relocate and threatening the country's economy and development. Low elevation, floodplains, and high population density exacerbate vulnerability, resulting in significant economic and developmental repercussions (Mohammad, 2015). The consequences of climate change will be devastating for Bangladesh. This country has already been facing its effects frequently (Roy, Hanlon, & Hulme, 2016).

Several suggestions have been offered regarding what should constitute a climate change curriculum. Some examples include that it should be multidisciplinary or interdisciplinary (Roehrig et al., 2012) or integrated into the science curriculum (Boakye, 2015). Climate change shapes part of the United States' science curriculum (Monroe, Plate, Oxtart, Bowers, & Chaves, 2019). Science and social science education curricula in Turkey contain content closely related to climate change science issues (Dal, Ozturk, Alper, Sonmez, & Cokelmez, 2015). This issue has been included in the science and BGS curriculum in Bangladesh. The BGS secondary curriculum (National Curriculum and Textbook Board, 2012) outlines an objective related to climate change. This curriculum focuses on familiarising learners with the concept and impact of global environmental warming and climate change, enabling them to defend against it. A terminal learning outcome has also been identified, where learners will analyse the causes and effects of global warming and climate change, including both natural and social disasters, and they will be able to defend and adapt to the emergent situation.

This study aimed to provide a clear understanding of the climate change issue as it relates to the content of textbooks and whether these align with the knowledge and skills outlined in the curriculum. As a result, it is hoped that this study will provide direction for the development of textbooks in cases where there is a lack or inadequacy of content. Moreover, this study also draws on Bloom's (1956) taxonomy of intellectual behaviour in learning and Hung's (2014) climate change education (CCE) framework. Hung claims that from an overall perspective, education and public education should be one medium for engaging individuals with the climate change issue.

Therefore, the researchers believe this study is crucial for ensuring the attainment of related learning outcomes through textbooks. The objectives of this enquiry were as follows: to identify the learning outcomes and content related to climate change issues in the BGS curriculum, to explore the consistencies between learning outcomes and curriculum content,

and to identify the gaps between the learning outcomes of the curriculum and the content of textbooks.

Moreover, this study is expected to assist curriculum specialists and textbook writers in bringing about the desired changes in curriculum and textbooks. It will also provide insight to the teachers and textbook developers. Additionally, this research is expected to identify any inconsistencies between the learning outcomes and the content of climate change issues in the BGS curriculum and textbooks at the lower secondary level. Thus, it will contribute to reforming the present curriculum and textbooks in the future. Additionally, this study will help learners acquire the necessary knowledge, skills, and attitudes regarding climate change issues through textbooks.

## Methodology

Methodology refers to the strategy, plan of action, process, or design behind a particular method's choice and use (Crotty, 1998). This study employed a qualitative research method. As mentioned, this study examined the consistency between learning outcomes and textbook content on a specified topic. A qualitative research design is a procedure for collecting, analysing, and studying a research problem in a descriptive, comparative, and exploratory manner (Creswell & Guetterman, 2019). This study provided a detailed understanding of the central phenomenon.

For this study, a total of five secondary schools were selected. The schools were sampled using convenience sampling, taking into account factors such as cost, time, and accessibility, among others. The participants included BGS secondary school teachers and curriculum experts from the National Curriculum and Textbook Board (NCTB) and the Institute of Education and Research (IER) at the University of Dhaka. Two curriculum experts were selected from the NCTB, and one was from the IER at the University of Dhaka. Ten teachers were selected from the five selected schools. Two BGS teachers were selected from each school by convenience sampling, taking into account their availability and time. An attempt was made to select one female teacher and one male teacher from each school. Details of the study's sample and the sampling strategy are shown in Table 1.

**Table 1**  
*Sample and Sampling of the Study*

Sample	Sampling
3 curriculum experts: 1 from IER, and 2 from NCTB	Convenience sample
10 Social Science secondary school teachers (2 sampled from each of 5 schools)	

The instruments used to collect data for this study were document analysis and a semi-structured interview schedule. In this study, related documents were the NEP 2010 (Ministry of Education, Government of the People's

Republic of Bangladesh, 2011), the BGS secondary curriculum (National Curriculum and Textbook Board, 2012) and the BGS textbooks of the lower secondary level, i.e., grades six, seven and eight (National Curriculum and Textbook Board, 2017a, 2017b, 2017c). A semi-structured interview schedule was also used to collect data from the respondents. Documents were the primary source of data collection for this study, and additional data were collected from respondents to enhance the reliability of the data. After collecting data, it was transcribed at first. Then it was analysed thematically.

### Limitations of the Study

The authors acknowledge that this study has certain limitations. The primary limitation is the use of convenience sampling to select the participating schools, teachers, and curriculum experts, a choice necessitated by time, budget, and accessibility constraints. While this method was effective for gathering rich, in-depth qualitative data, it means the findings are context-specific and may not be statistically generalisable to all secondary schools across Bangladesh. Consequently, this research should be viewed as an exploratory study that provides valuable insights into the curriculum alignment in the sampled contexts, rather than a definitive national assessment. Future research could build upon these findings by employing random sampling methods to achieve broader generalisability.

### Analysis and Findings of the Study

Creswell and Guetterman (2019) stated that the analysis and interpretation of data are crucial for research work that involves analysing data, presenting it in tables, figures, and pictures to condense it, and concluding it in words according to the research question.

The data was compiled in two ways for this study. Initially, the researchers reviewed the relevant documents. Then, data were collected through semi-structured interviews with teachers and curriculum experts. The researchers made a list of themes to collect data, and then the collected data was analysed according to the themes. According to Boyatzis (1998), a theme is a pattern within the information that, at the very least, helps to explain and incorporate potential observations, and at most, illustrates the phenomenon. During the interviews, respondents' anonymity was maintained to consider the ethical issues inherent in the research. This research adhered to the framework for research ethics established by the Economic and Social Research Council (2015). The researcher maintained the following principles: participants should participate willingly without coercion, the researcher should minimise any harm to both participants and the researcher, the anonymity and confidentiality of the participants should be maintained, and the researcher should remain impartial.

The primary goal of data analysis is to align with the research objectives. The researchers first collected data through document analysis and then from the respondents. After collecting data, it was transcribed. Then, the respondents'

opinions and the researchers' personal views were analysed using different themes related to the study's research objectives.

### Document Analysis

#### NEP 2010

NEP 2010 (Ministry of Education, Government of the People's Republic of Bangladesh, 2011) addresses climate change in Policy 18. It states that the goal is to build students as skilled human resources to combat climate change challenges and make them socially aware of other natural disasters and environmental issues.

#### BGS Secondary Curriculum 2012

The curriculum, as outlined by the National Curriculum and Textbook Board (2012), includes detailed NEP planning. It reflects the central policies of the NEP. According to the policy, many objectives and terminal learning outcomes are set in the curriculum. The BGS secondary curriculum aims to inform learners about global warming and the impact of climate change, equipping them to defend against its effects. A terminal learning outcome has also been addressed, as learners will examine the causes and effects of global warming and climate change, including both natural and social disasters, and will be competent to defend and adapt to real-world situations. However, the curriculum indicates that most climate change-related learning outcomes are primarily based in the cognitive domain.

#### Review of Textbooks

Textbook contents are the primary component for achieving the curriculum's goals, objectives, and learning outcomes. Any inadequacy or irrelevance in the contents or pictures of the textbook may hinder the achievement of the learning outcomes of the curriculum. The BGS textbooks for the lower secondary level contain a specific chapter on climate change issues.

#### Grade Six

The BGS textbook for this grade contains a chapter on the climate change issue titled "Environment of Bangladesh". This chapter discusses humanity and the environment, environmental problems, the pollution of the environment, and what we can do to address this issue. This chapter does not directly discuss climate change issues. However, it has discussed the anthropogenic factors that are gradually having a devastating impact on our country due to climate change, thereby establishing a foundation at the lower levels of Bloom's (1956) cognitive domain ("Remembering" and "Understanding"). This chapter also discusses initiatives aimed at addressing and mitigating Bangladesh's environmental problems. The total number of pictures in this chapter is six. However, there is no title for the first three pictures of this chapter. Besides, the pictures are not clear enough in this chapter.

#### Grade Seven

The BGS textbook for grade seven includes a chapter on the issue of climate change. The title of this chapter is

“Climate of Bangladesh”. This chapter has discussed the climate of Bangladesh, the causes of climate change in the country, natural disasters in Bangladesh caused by climate change, and initiatives to mitigate these disasters. However, this chapter has focused less on the psychomotor domain. In the context of Hung’s (2014) framework, this represents a significant gap in CCE’s “Doing” dimension. A learning outcome, such as learners being able to respond to the challenges caused by climate change, requires content that moves learners beyond foundational knowledge (“Knowing”) and into the domain of practical application and skills (“Doing”). To achieve this learning outcome, more content should be included in the textbook that is related to the psychomotor domain. Besides, the pictures are not clear enough in this chapter.

### Grade Eight

The BGS textbook for this grade contains a chapter on the climate change issue titled “Disaster of Bangladesh”. This chapter has focused on Bangladesh’s natural disasters caused by climate change. This chapter has discussed global warming, its causes and effects, concepts of disasters, various types of disasters in Bangladesh, and the impacts of disasters. Initiatives for disaster defence are also broadly discussed in this chapter. The pictures are not clear enough in this chapter.

### Data Analysis

#### Analysis of Data Found Through Semi-structured Interview

The significant findings from the collected data are as follows: adequacy of content, consistency between the textbook content title and the learning outcomes of the curriculum, arrangement of textbook content, skill development through content, relevance of pictures, and adequacy of pictures.

There was a general question in the interview schedule about whether there is any necessity to include climate change issues in the textbook as a learning content at the lower secondary level. All respondents agreed that it is necessary to include climate change issues in the textbook as a learning content at the lower secondary level.

#### Adequacy of the Content

The respondents were asked if the information about the textbook content was adequate or not. It was asked separately for every grade. Of all the thirteen respondents, seven said that the contents are adequate for grade six learners. Moreover, the remaining six respondents stated that the content is insufficient for learners in grade six.

One expert noted that the subject matter is written with vertical alignment in mind. He said, “With the vertical alignment, the contents are adequate for this grade. However, there is no specific chapter that is titled on the climate change issue.” Another expert said, “Contents are adequate, but there are some problems in the language used in describing the content of the books.”

Some teachers said the textbook’s content for grade six should be increased. They suggested that more content from the seventh and eighth grades of the textbooks could be included. One teacher said, “The contents are inadequate for

learners’ grades. There is consistency in the content title with a learning outcome, but the content information is not adequate.” Some respondents recommended that this chapter be more enriched for grade six learners. Most respondents said the content’s adequacy is satisfactory in the grades seven and eight textbooks.

#### Consistency of the Textbook Content Title With the Learning Outcomes of the Curriculum

Here, respondents were asked if the textbook content titles were consistent with the learning outcomes of the curriculum. Respondents answered it according to every grade. All respondents, except one, agreed that textbook content titles are consistent with curriculum learning outcomes for grades six and eight.

Only one teacher said, “Textbook content titles are not satisfactorily consistent with the learning outcomes of the curriculum for grade six.” Another teacher said, “Textbook content titles are inconsistent with the learning outcomes of the curriculum for grade eight.” However, all respondents agreed that the textbook content titles are consistent with the learning outcomes of the seventh-grade curriculum. One teacher added, “Content titles are consistent with the learning outcomes, but there is no adequate information about the content in the textbook.”

#### Arrangement of Textbook Content

The arrangement of textbook content refers to the sequence of the contents, and at the same time, it provides a consistent focus on every content of the textbook. That is, the contents are presented in the textbook sequentially, based on importance, relevance, and other factors. Additionally, the textbook features a diverse range of content types. All of the contents should be discussed to the same extent. If some topics are discussed with great importance, while others are discussed briefly, that is a deficiency in the textbook. Therefore, this theme assesses whether the arrangement of textbook contents is adequate or not.

Most respondents said the textbook contents in grade six are adequate. However, some respondents, including a curriculum expert, disagreed with this opinion. They stated that the arrangement of the textbook content is not suitable for grade six.

One expert said, “The impact of environmental problems in Bangladesh should be discussed more. Hence, no.1 learning outcome is not very clear.” The primary learning outcome of this chapter is that learners can explain the relationship between humans and the environment. The expert stated that the textbook content is sufficiently precise to achieve this learning outcome. One teacher added, “There is no sequence in the arrangement of the contents in the textbook of grade six.”

Most respondents agreed that the arrangement of the textbook contents is adequate for grade seven. However, some respondents stated that the textbook content is insufficient for grade seven. In the portion discussing disasters, the topic “flood” is discussed after the topics of “cyclone and tidal bore”. Two teachers said “tornado” should be discussed after

“cyclone and tidal bore”. They added, “Because there are similarities in these disasters, the discussion would be more coherent if these disasters were discussed individually”.

One teacher particularly said, “These disasters should be discussed in accordance with the season change. It should be represented following the Bengali calendar.” One curriculum expert suggested, “Disasters should be presented in accordance with the importance of our country.” He explained that learners should be aware of all the disasters in our country, but it would be better if they learn about them in the context of their importance to our country. However, all respondents said that the arrangement of the textbook contents is adequate for grade eight.

### Skill Development Through Content

The respondents were asked if the contents of the textbooks helped the learners fight against all the disasters in Bangladesh. Some respondents stated that the textbook contents help learners prepare for and mitigate disasters in Bangladesh. However, most respondents, including one curriculum expert, stated that the textbook contents could not help learners combat all the disasters in Bangladesh. Textbook contents are only conducive to fighting against some of the disasters in Bangladesh. A learning outcome for grade seven states that learners will be able to address the context of climate change. Respondents were asked if the contents in the grade seven textbook are adequate to achieve this learning outcome.

Ten respondents out of thirteen stated that the textbook's contents are inadequate for grade seven to achieve this learning outcome. Two curriculum experts agreed with this opinion. One expert said, “It is necessary to discuss the initiatives more.” Additionally, the textbook includes discussions on initiatives aimed at mitigating disasters. The respondents were asked if these initiatives are discussed based on various geographical contexts in Bangladesh. Initiative techniques will be changed due to geographical location. That means disasters occur throughout Bangladesh. However, initiatives will not be the same in the same catastrophes in different geographical areas. The respondents were asked whether these initiatives were discussed in various geographical contexts in Bangladesh. This question was asked based on three types of geographical locations, and respondents were asked to give an opinion on two options. Table 2 presents the respondents' opinions.

**Table 2**  
*Table of the Respondents' Opinion*

Location	Fairly	Fully
City	13 Respondents	No Respondent
Village	12 Respondents	1 Respondent
Coastal Area	10 Respondents	3 Respondents

### Relevance of Pictures

In this theme, an attempt is made to explore the relevance of pictures to the content and the significance of the

information within it. All respondents believe that all the pictures are relevant to the textbook content for sixth- and seventh-grade learners. However, one teacher noted that the two pictures were not relevant to the textbook content for grade seven. These pictures present the topics of “river erosion” and “a safe place during a disaster”.

That teacher said, “All of the pictures in this chapter are natural, but these two pictures are drawings. Moreover, these pictures cannot fully explain what they intend to present. Natural pictures should replace these pictures.” Besides, most respondents think that the pictures in the textbooks are not clear enough.

Twelve respondents out of thirteen said that all the pictures are relevant to the textbook content for grade eight learners. Nevertheless, all respondents stated that some pictures are clear, while others are not clear enough in the BGS textbooks for the lower secondary level.

### Adequacy of Pictures

Most respondents, including two curriculum experts, stated that there are no adequate pictures in the Grade 6 textbook. Some recommend that pictures be included in this textbook, such as those illustrating rising sea levels due to melting ice, tree plantations, the use of masks to mitigate smoke, and the relationship between humans and the environment.

One expert said, “There is no title for the first three pictures of this chapter. There should be a separate title for each picture.” However, some respondents, including one curriculum expert, stated that there are sufficient pictures in the textbook for grade six. Besides, most of the respondents, including one curriculum expert, said that there are adequate pictures in the textbook of grade seven, and some of the respondents recommended that some pictures should be included in this chapter, like the picture of a cold wave, deforestation, a nuclear reactor, and the wastage of water vehicles. Moreover, some suggested that the pictures should relate to real life.

Most respondents, including two curriculum experts, said there are no adequate pictures in the textbook for grade eight. Some recommended pictures that should be included in this textbook are the picture of the greenhouse effect and the picture of taking initiatives after a disaster. One expert suggested, “The first two pictures of this chapter related to the greenhouse effect should be reformed. These pictures do not reflect the main theme of the content. So, there is no problem if these pictures are removed from the textbook.” The expert added that the picture of emitting smoke is repeated in every grade of the lower secondary level. This type of repetition should not remain in the textbook. Moreover, he said, “The pictures of the earthquake, tsunami and landslide should be reformed.” Some respondents, including curriculum experts, suggested that colourful pictures would be more conducive to lower secondary-level learners.

### Discussion

Climate change is a crucial priority for international development, as its impact is likely to be disproportionately

experienced in developing countries (United Nations Educational, Scientific and Cultural Organisation, 2012). Bangladesh, being a developing country, is the focus of the researcher's attention on this alarming problem.

Jenkin (2013) argued that pupils should understand how geographical processes interact to create distinctive human and physical landscapes that change over time. This would include climate change for secondary teachers, and my department will continue to teach the topic as an issue relevant to our young people. This statement gained strength when all respondents agreed that it is necessary to include climate change issues in the textbook as learning content at the lower secondary level in Bangladesh.

It has been found that the content information in lower secondary-level textbooks is adequate. However, there is no substantial difference in the opinion about the textbook for grade six. Seven out of thirteen respondents agreed that the contents of the grade six textbook are adequate, but six other respondents disagreed with this opinion. Six respondents think the contents of the textbook for grade six are inadequate.

Bloom (1956) provided a higher-order taxonomy of cognitive skills that aims to progress from simple recall of facts to more complex processes. The researchers emphasised the development of skills through textbook content to combat climate change-related disasters. Hung (2014) discussed in his book that the core concept of CCE should encourage students to go beyond awareness and take action. He added that CCE intends to help learners develop their knowledge, skills, values, and actions to engage with and learn about the causes, impacts, and management of climate change. Deeb et al. (2011) also emphasised that education should be strategic in combating climate change, particularly in terms of mitigation and adaptation. The findings here do not qualify the above claim. Most respondents believe that textbook contents help learners prepare for some of the disasters. This content cannot help learners develop their skills in combating disasters in Bangladesh due to climate change, indicating a curriculum that struggles to move learners to the higher-order levels of Bloom's taxonomy, such as "Application" and "Creation". Furthermore, it highlights a deficit in what Hung (2014) refers to as the "Doing" (practical skills) and "Being" (action-oriented values) domains of CCE.

Most respondents believed that the content arrangements in lower secondary level textbooks are adequate. Very few of them opposed it. The practical arrangement of textbook contents helps learners achieve learning outcomes more efficiently. Traditionally, it has been preferable that content should be sequenced by following a logical approach (Ornstein & Hunkins, 2018).

Textbook pictures are compelling elements to achieve learning outcomes through the textbook (Hussain, Hossain & Rahman, 2018). Beakes (2003) added that images can be powerful teaching tools, such as illustrations for in-class lectures or studying concepts outside the classroom. It has been found that relevant pictures are used in the textbooks of lower secondary levels. However, the quality of the pictures is not

good enough. Some pictures are hazy, irrelevant, inauthentic, and blurry. All respondents, except two, think that the pictures are unclear. Besides, there have been drawings in the textbooks. The respondents believe drawing pictures should not be used in textbooks. They provide their opinion that all pictures should be life-oriented and natural. Using some realistic pictures and some drawings is not equitable in the textbooks. Some pictures should be removed from the textbooks, some should be modified, and others should be included to address climate change issues in the BGS textbooks for the lower secondary level.

More emphasis should be placed on the psychomotor domain to address the threat of climate change. Climate change is a problem that demands hands-on attention from scientists, policymakers, and the public to raise awareness and prepare them to cope with this threat successfully (Martens, McEvoy, & Chang, 2016). The textbook analysis reveals that most learning outcomes in our curriculum on this climate change issue are based in the cognitive domain. Psychomotor domain-based learning outcomes will be more conducive for students to develop skills in addressing the climate change issue in Bangladesh. The psychomotor domain enhances practical skills and critical thinking through hands-on activities, which are essential for addressing climate change (Van Lange, Joireman, & Milinski, 2018). While cognitive knowledge is important, integrating psychomotor experiences fosters more profound understanding and prepares students for real-world applications in environmental challenges (Jacobson, Carlton, & Devitt, 2012). Papadimitriou (2004) added that, as a significant issue, climate change requires considerable focus from scientists, policymakers, and the public alike. This issue has garnered intense interest in the public's understanding, to educate future citizens to address this problem effectively.

The researchers found, upon analysing the data, that more emphasis should be given to teaching-learning instructions for teachers in the curriculum. The research indicates that a multidisciplinary approach to CCE, incorporating humanities and arts alongside science, is more effective in enhancing climate literacy among students than relying solely on a science-focused curriculum (Chopra, Joshi, Nagarajan, Fomproix, & Shashidhara, 2019). Chopra and colleagues stated that the teaching and learning method is critical because CCE involves learning that should change attitudes and behaviour. The respondents also supported the idea that more instruction should be included in the curriculum for teachers.

## Recommendations

The researchers offer several recommendations based on the findings. Firstly, it is suggested that more information on climate change issues be incorporated into grade six materials. Secondly, the quality of images about climate change should be improved, emphasising colourful and clearer visuals to support student learning more effectively. Additionally, greater focus should be placed on developing students' psychomotor skills to help them address climate change-related challenges. It is also recommended that the textbook content on climate change be authored by individuals with expertise

in geography or by those possessing substantial knowledge in the field. Furthermore, topics such as “El Niño” and “La Niña” and frequent thunderbolt events are advised for the lower secondary curriculum. Curriculum experts specifically recommended addressing these phenomena in the textbooks to provide a more comprehensive understanding for students.

## Conclusion

This study was conducted to investigate the consistency between the learning outcomes of the BGS curriculum and the content of BGS textbooks on climate change issues at the lower secondary level. The issue of climate change is now a pressing problem for Bangladesh and the world. Countries such as Nigeria, Ghana, Canada, the Philippines, Malaysia, Australia, the Netherlands, and Bangladesh have incorporated climate change issues into their curricula. This study examines the current state of content in lower secondary level textbooks on this alarming issue. The researchers hope that this study will inform and guide further research. The researcher also believes that this study will help curriculum experts and textbook writers improve the quality of the curriculum and textbooks.

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Manuscript received: 7 September 2020

Initial acceptance: 1 December 2020

Revisions received: 2 March 2021; 14 March 2022; 27 September 2023;

5 May 2024; 18 December 2025

Final acceptance: 20 December 2025

