

Doctoral Dissertation

Critical Thinking Skills in Environmental Education among Secondary
Level Students of Bangladesh
(Summary)

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ABSTRACT

The primary purpose of this study was to develop and validate an instrument to measure students' critical thinking skills in specific subject of environmental education. The world community is emphasizing the inclusion and implementation of environmental education (EE) into their system of education. There is a shift from knowledge-based education to competency-based education worldwide. Competency is a set of national standards that incorporate critical thinking skills (CTS) into the curriculum.

The earlier version of the adopted critical thinking skills test in environmental education (CTSEE) was reviewed by four experts and pilot tested on 24 students from secondary (grade eight). The instrument was further revised according the suggestions from the experts and results of field testing.

The CTSEE comprised of 27 multiple choice items followed by three parts representative of critical thinking skills in three areas-conclusion, inference and identifying bias. A total of 444 students participated in the final field survey. Point-biserial correlations and descriptive statistics were computed for individual test items to confirm the internal validity and reliability of the instrument.

Item difficulty index showed the moderate level difficulty of individual items and item discrimination index proved the good or moderate level discrimination of items. Analysis of content validity, construct validity and criterion validity recorded the high internal consistency among the items of the test. Cronbach's Alpha score of .78 established the high reliability of the developed test.

A subsequent objective of this study was to confirm the external validity of the instrument by relating the outcomes of this study with the findings of previous research. The associations of the level of students' CTS and differences between 'male and female students, students in rural and urban areas, and students from public and private schools were compared with previous study results to confirm the external validity as well as to search for the unique features of the research.

Analysis of the findings generally confirmed the external validity of CTSEE, though distinct results were found in the comparison of CTS between male and female students, and students from public and private schools.

This study showed that students' critical thinking skills regarding environmental issues were generally "poor" and "very poor," consistent with the findings of previous research. Although most previous researchers found that female students had better CT skills than male students, this study did not. This study also showed that the CTS of public-school students are better than that of the private school students, while earlier research found the opposite. Thus, the current study has some unique features in compare with previous studies findings.

Therefore, this study achieved its primary goal of constructing a valid and reliable tool for measuring the CTS of Bangladeshi secondary level students. Besides, subsequent portion of results proved the instrument's external validity and showed some unique features. The results of this study could serve as references for future research in this field, and as a basis for policymakers.