

Environmental education in higher school education system of Purba Medinipur District, West Bengal: An Educational appraisal

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Abstract: *Environmental Education (EE) is the key to solving and maintaining sustainable environmental problems. This current study is an effort to evaluate EE's high school education system, especially in Purba Medinipur. This experienced estimate is from the field supported by the data source random sampling survey. Field studies have examined a number of alternative parameters like ecological class frequencies, frequency of environmental laboratories, regional monitoring classes, or frequency of laboratory laboratories, method of application method, evaluation method, etc. The collected information is applied to a number of statistical tools. EE's condition is not really satisfactory in the system of higher secondary education, and the day-to-day and education system needs to be completely amended.*

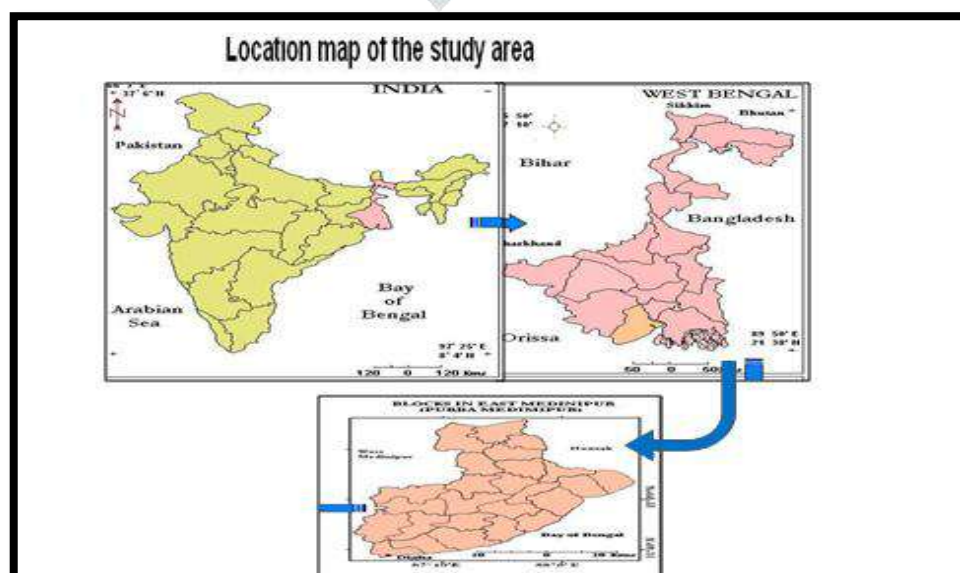
IndexTerms - *Environmental education (EE), School education System, Environmental problem, Statistical parameters.*

I. INTRODUCTION

The concept of environmental education is now wide spreading national educational policies, curriculum documents, curriculum development initiatives and conservation strategies (Rickinson, 2002). World educators and environment specialists have repeatedly pointed out that a solution to environmental crisis will require an environmental awareness and its proper understanding which should be deeply rooted in the education system at all levels of school education (Shobeiri et al., 2007). The environmental education (EE) has been thoroughly discussed at several national and international seminars, workshops, conferences after the deliberations at Fourex in 1971 and in United Nations Conference on Human Environment at Stockholm in 1972.). Supreme Court of India has directed the U.G.C., New Delhi to implement compulsory courses of all branches of higher education (Rao, 2010). In a national seminar, organized by the Indian Environmental Society in collaboration with the International Programme on Environment Management at the Indian National Science Academy, New Delhi in 1979, emphasis was given to incorporate Gandhian thought and values as a part of Environmental Education. A number of recommendations were made in the seminar. On the occasion of the First International Conference on Environmental Education held in New Delhi, in 1980, the late Mrs. Indira Gandhi observed that environmental education (EE) is to help arouse social consciousness and make community aware of the fact that the good of the individual and that of the community are both harmed by ecological disruptions. In 1985, there was the Second International Conference on Environmental Education (EE) at New Delhi. Several important points could emerge from deliberations of the international, national, regional and even local conferences on environmental education.

Location:

Purba Medinipur district is a part of the Lower Ganga Plain (Coastal Belt on the Bay of Bengal), West Bengal, India and its geographically location laying between 21° 36' 35"N to 22° 02' 23"N and 87° 22' 48"E to 88° 01' 12"E, and its covering an area of 4295.00 sq km. Purba Medinipur district is surrounded by Paschim Medinipur and Howrah in north, Bay of Bengal in the south, South 24 Parganas and Howrah in east and also Orissa state in the west.



Review of Literature:

Blair Kalinski(2014)in his research article studied to qualitatively and quantitatively examine how effective nature center preschools are as a teaching tool for early childhood environmental education.Kumud Ghosh(2014)in his present study attempts to study the level of environmental awareness and attitudes towards environmental education among Secondary School students of Golaghat district in the state of Assam. The sample consisted of 200 students which includes 100 boys and 100 girls. The Descriptive Survey Method was employed for the present study. Environmental awareness, attitude and socio-economic scale was developed and standardized for the present study.Paramanand Singh Yadav And Anita Bharati (2007) in his present study was conducted to study the environmental awareness among higher secondary students of Varanasi district of Uttar Pradesh. The findings of the study indicated that environmental awareness has positive relationship with scientific attitude among students and science students were found more aware about their environment as compared to arts students. S.A. Mamun(2012) in his research article was attempted to know about the environmental education and awareness among the mass people of Tangail town. This paper describes some findings to understand the status of environmental awareness among people of different age groups of Tangail district. Moreover, this paper enables to provide some suggestions to extend environmental education and awareness to make a decent and ethical life as well as to keep the environment sustainable. Ananta Kumar Jena(2012)in his research studied about the empirical pattern to observe the overall attitude of pre service teachers' of different training colleges towards environmental education and practice Environmental education is a continuous lifelong process, starts at the preschool level and continues up to adulthood via all levels of education.Peter C. Lippman(2010) in his paper argued in favour of challenging "best practice" generally accepted by the architectural profession by embracing a responsive design approach for creating learning environments. This paper should focus on the role of the social environment and how the physical environment may be structured to support learning.Caroline Howe(2009)his study explores educational policies at global and local scales based on conservation interventions funded by the DEFRA Darwin Initiative. Dr. Durga Sharma et al(2013) in his paper studied to investigate the effectiveness of three selected instructional approaches viz. self learning material, audio-visual and fun activity approach in order to develop the environmental awareness among the IX grade students. Environmental awareness scores were analysed usingdescriptive statistics and an effectiveness index. A probability sample of 144 students (72 girls and 72 boys) was selected for the purpose. Research outcomes showed that most of the students had average or high level of environmental awareness.

Objectives:

This study has some objectives which are as follows-

1. To find out whether there is any allotment of class regarding environment studies and also the frequency per week per school.
2. To find out whether there is any allotment of practical class regarding environment studies per week per school.
3. To find out whether there is any allotment of field observation class regarding environment studies per week per school.
4. To find out whether there is any use of teaching learning material (TLM) in class teaching for making the subject more attractive.
5. To find out whether there is any evaluation system regarding environment studies and also the frequency in an academic year.

Methodology:

The main data source of this present study is field survey and another source of data and information are various books, journals, reports etc. After significant article review the frame work of the study is made. Six Blocks of Purba Medinipur (Egra-I,Egra-II,Ramnagar-I,Ramnagar-II, Contai-I, Contai-II) are merely selected for survey. From each district averagely 20 schools were covered and from each school ten regular students were surveyed, the total number of sample is 1200.

Syllabus of EE in school education system:

The syllabus of environmental education in school education system (vi to xii standard) is as follows-

Class VI Knowing the environment (the environment; human dependence on environment; interdependence of plants and animals) Natural resources and their utilization (natural resources- air , water, land, sunlight; significance for growth, development and survival; utilization of resource for development and social activities; over utilization of resources) Waste generation (generation of waste and its sources; types of waste; hazards of waste accumulation; waste, community health and sanitation) Management of waste (waste and its disposal-solid, liquid and gaseous waste; condition for proper waste management) Exemplar activities (visiting nearby village/town, various sources of water, village market, natural study.

Class VII Environment and natural resources (water-its essentiality for life and activity, a habitat of plant and animal, sources of water; air-atmosphere as reservoir, role of atmosphere; soil-a medium for growth of plants, types of soil, habitat for organisms, facilitator for percolation and retention of water; forest-its significance and importance in environment) Man and environment (response of living beings to change in environment; modification of environment by human beings; effect of human activities and population growth on agricultural, industrial, housing activity and harnessing energy etc.; consequences of human activity; role of individuals to maintain resource, nature) Exemplar activities (activities suggested neither exhaustive nor prescriptive, teachers may design their own set of activities keeping in view the overall objective of teaching and learning of EE at this stage)

Class VIII Balance in nature (ecosystem; energy flow through ecosystem; balance in nature) Impact of population on environment (impact of population growth; stress due to population growth; increase in consumption, encroachment on monuments) Harnessing of resources (source of energy; renewable sources; non-renewable sources; agricultural and animal husbandry; utilization of resources for industry; environmental concerns) Environmental pollution-cause and effect (emerging lifestyles in modern societies; factor affecting environment; pollution of soil, water and air; noise pollution; disasters; impact environmental degradation; impact of environmental pollution on human health; role of individuals, community and govt. for prevention of pollution and improvement of environment) Exemplar activities (activities suggested neither exhaustive nor prescriptive, teachers may design their own set of activities keeping in view the overall objective of teaching and learning of EE at this stage)

Class IX Understanding ecosystem (types of ecosystem; interaction between biotic and abiotic factors; energy flow and its importance; destruction of ecosystem due to changing pattern of land use; impact of ecosystem destruction; conservation of ecosystem; role of environment impact assessment) Depletion of resources (natural resources; causes of depletion of resources; impact of resource depletion; practices for conservation of resources) Waste generation and management (sources of waste; classification of waste; impact of waste accumulation; need for management of waste; methods of safe disposal of waste; need for reducing, reusing and recycling of waste; legal

provisions of handling and management of waste) Environmental values and ethics (human rights, fundamental duties and value education; women and child welfare) Exemplar activities (activities suggested neither exhaustive nor prescriptive, teachers may design their own set of activities keeping in view the overall objective of teaching and learning of EE at this stage)

Class X Restoring balance in ecosystem (need for adopting controlling measures for spoilage of landscape; need for conservation and management of water, forest, grassland, semi-arid ecosystems ocean resources soil; measures to conserve wild life; application of biotechnology; public awareness programmes; relevance of indigenous practices; tribal culture and its linkages to forest resources and their conservation) Pollution (types of pollution; sources of pollution and major pollutants; effects of pollution; abatement of pollution) Issues of environment (decline of forest, agriculture and marine productivity and its effect on economy; resettlement and rehabilitation of people; energy crisis; greenhouse effect and global warming; climatic change; acid rain; ozone layer depletion; disaster, disaster management, mitigation) Striving for a better environment (use of eco-friendly technology; sustainable use of resources; adoption of indigenous practices; consumer education; community participation for ecological restoration and conservation; protection of wild life; enforcement of acts, laws and policies; some success stories) Exemplar activities (activities suggested neither exhaustive nor prescriptive, teachers may design their own set of activities keeping in view the overall objective of teaching and learning of EE at this stage)

Class XI and XII Man and environment (dimensions of environment; human being as a rational and social partner; society and environment, tradition, custom, culture; population and environment; impact of human activity on environment; environmental problems in urban and rural areas; natural resource and their depletion; stress on civic amenities; vehicular emissions; urbanisation- land use, migration, floating population) Environment and development (economic and social needs as basic needs...; agriculture and industry as major sector...; social factors affecting development; impact of development on environment; impact of liberalization globalization on agriculture and industrial development; role of society in development and environment) Environmental pollution and global issues (air, water, soil pollution; handling process and management of hazardous wastes; noise and radiation pollution; ozone layer depletion and its effect; greenhouse effect; global warming and climatic change; pollution related diseases; disaster- natural and man made; strategies for reducing pollution) Energy (changing global pattern of energy consumption; energy consumption as measure of QOL; energy scenario in India; conventional and non-conventional sources of energy; conservation of sources of energy; planning and management of energy) Biodiversity (concept and value; types of biodiversity; loss of biodiversity; overexploitation of plant and animal species; balance in nature; India- mega diversity nation; economic potentiality of biodiversity; mitigation people-wildlife conflict; strategies for conservation) Environment management (needs; aspects; legal provision; approaches) Sustainable development (concept; needs; challenges; support base; role of national and international agencies; principles) Sustainable agriculture (needs; importance of soil; irrigation system; crop protection; impact of agrochemicals; elements of sustainable agriculture; action plan) Nature observation/Practical aspects – Project (plantation; plant/tree, water, motor vehicle observation; study of pond ecosystem; environment assessment etc.).

Environmental education in Purba Medinipur:

From the Table 1 it is observed that in most of the school (67.5 percent) the number class regarding environment studies (ES) is one per week and rest of the school (23.33 percent) conduct two classes per week. On the other hand very minor number of school (9.17 percent) did not conduct class regarding environment studies regularly in Purba Medinipur. Among six Blocks of Purba Medinipur, Egra-I and Ramnagar-I Blocks pose in the first position in allotment of two classes per week per school. On another side Contai-II stands in the first position (90 percent) in case of conducting single class per week followed by Egra-I

Table1: Allotment of environment class per week

Name of the Blocks	Single Class Per Week (%)	>2 Class Per Week (%)	Irregular Class (%)	Total (%)
Egra-I	50	45	5	100
Egra-II	70	15	15	100
Ramnagar-I	45	45	15	100
Contai-I	85	15	0	100
Contai-II	90	5	5	100
Ramnagar-II	65	15	20	100
Toal	67.5	23.33	9.17	100

Source: Field Survey, 2018

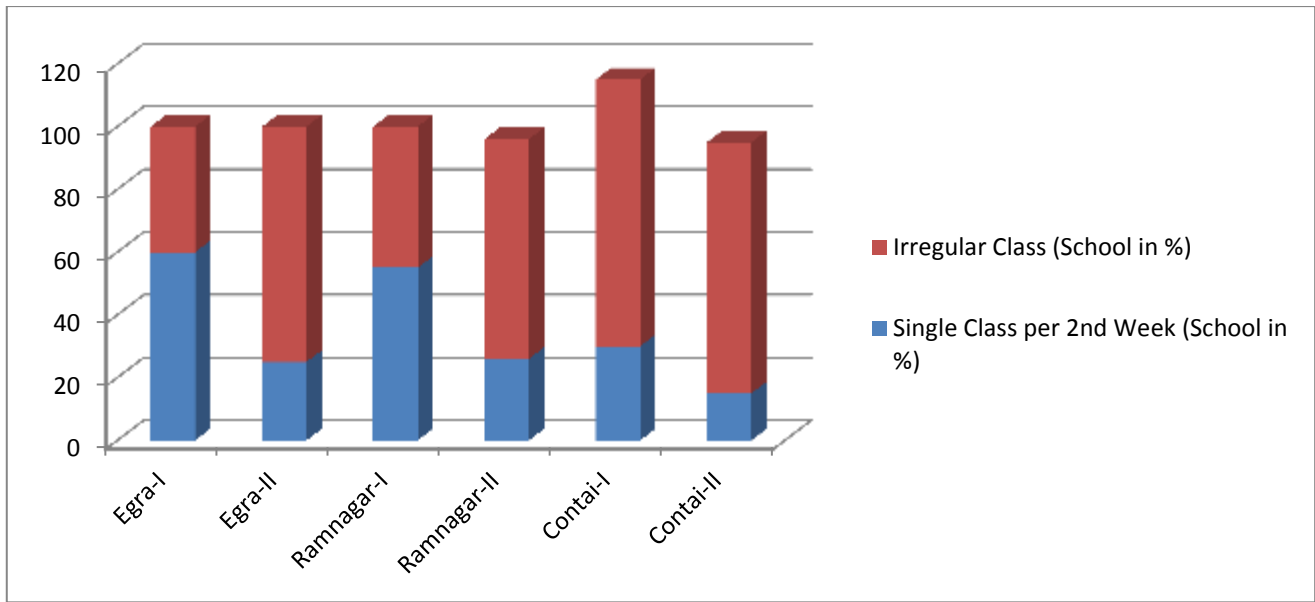


Fig-1,Allotment of practical environmental class per week in ix to xii standard

Source:Field study and Author 's calculation

According to syllabus the allotment of practical class is indispensable in case of environment studies in school education system (ES). It is observed that in 34.17 percent school of Purba Medinipur conducted at least one practical class per two week, regarding environment studies, and the rest 65.83 percent school are irregular in case of conducting practical class. So the scope for improvement of practical knowledge of student about environment will be lesser. It is also revealed that among six blocks of Purba Medinipur, Egra-I district took first position in case of conducting regular practical class followed by Ramnagar-I. Again Ramnagar-II stay at top position in case of conducting practical class in very irregular manner (Fig-1)

In the syllabus of environment studies as examples there is compulsory provision for field observation class for real time realization about our environment. But in Purba Medinipur District only 10.83 percent school conducted field observation class regularly. On the other hand 45.00 percent school conducted field observation class but with a lesser regularity and it is also mention worthy that 44.17 percent school does not conducted ever field observation class. In case of conducting regular field observation class, regarding environmental studies (ES), Egra-I and Contai-I districts took front position. And in case of unable to conduct any field observation class Ramnagar-I ranked at top position followed by Contai-II (Fig-2).

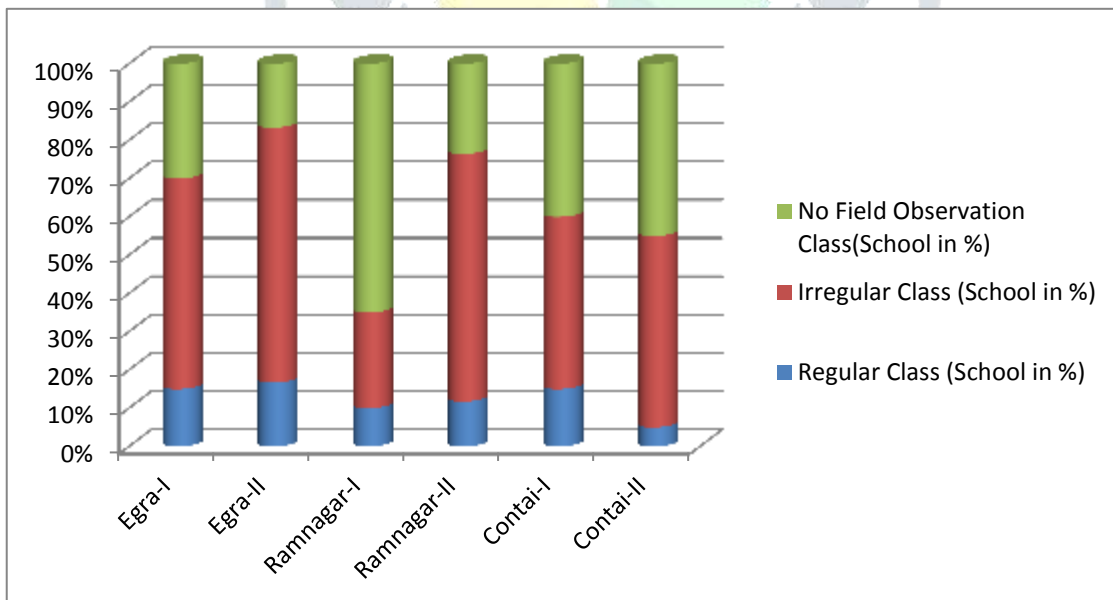


Fig-2, Allotment of field observation class per week

The method of class teaching play a vital role in the improvement of knowledge level among the student about any particular discipline and also helps to grow interest in that discipline. From the Table 5 it is observed that among six Blocks of Purba Medinipur averagely more than fifty percent (55.83 Percent) school follow improved teaching method, i.e., using TLM during class-room teaching. On another side, averagely 44.17 percent school follow conventional teaching method, i.e., lecture method. From the survey it is revealed that in Egra-I Block 70 percent school used TLM in the class teaching, on the other side in Contai-I Block 60 percent school follow lecture method for class teaching.

In the school education system evaluation is an integral part. Now-a-days the mode of evaluation in an academic year has been changed into unit test type through the 'Sarba Siksha Abhijan'. Table 6 shows the scenario about evaluation system in schools of Purba Medinipur

regarding environmental studies (ES). In Purba Medinipur 65 percent school arranged two evaluation tests in an academic year, as half yearly and final examination, and 21.67 percent school arranged more than two evaluation tests, as unit test basis. On the other side only 13.33 percent school conducted one evaluation test in an academic year as annual examination. In Egra-I and Contai-II 30 percent school conducted more than two evaluation test in an academic year and followed by Egra-II.

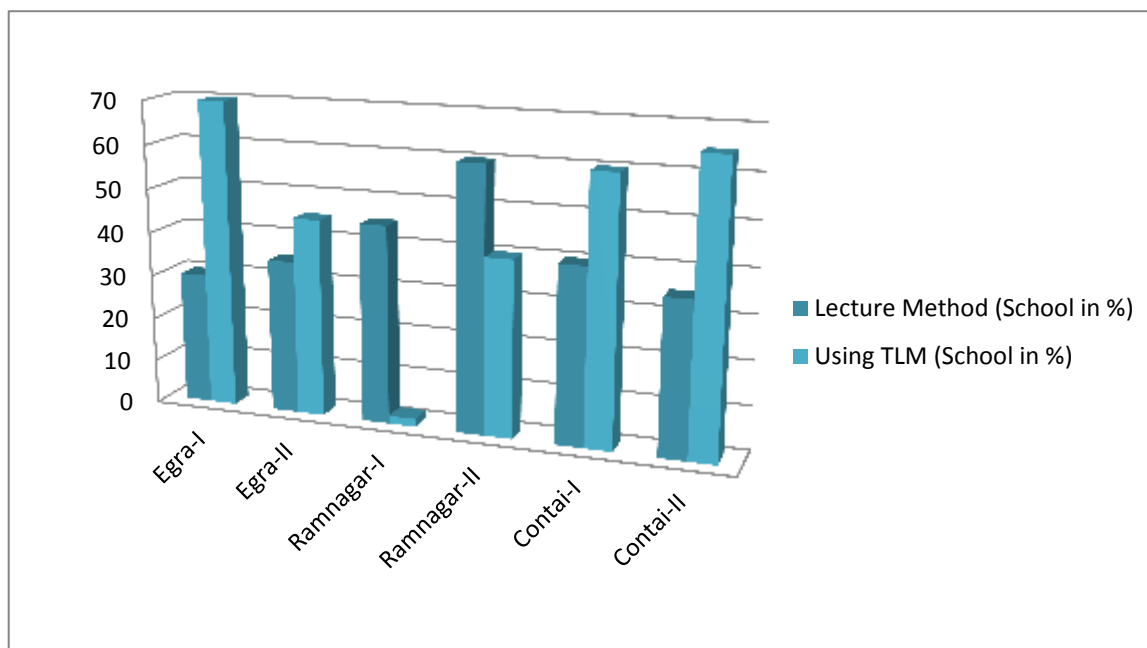


Fig-3, Teaching method used in environment class, Source: Field study and Author’s calculation

Table 2: Frequency of Evaluation regarding environmental studies in an academic year

Name of the Blocks	Number of Test Taken in an Academic Year (School in %)			Total(%)
	>2	2	<2	
Egra-I	30	60	10	100
Egra-II	25	55	20	100
Ramnagar-I	15	70	15	100
Ramnagar-II	15	80	5	100
Contai-I	30	50	20	100
Contai-II	15	75	10	100
Total	31.67	65.00	13.33	100

Source: field survey

Conclusion:

On the basis of the findings of the study, it is very difficult to arrive at any definite conclusion. The findings of the study are revealing that although in every school there is a provision of formal environmental education (EE), but its standard is not well, most of the school did not conducted theoretical and practical classes regularly, age old teaching method have been followed by most of the schools, nature study classes did not conducted regularly and seriously, school administration did not consider evaluative test regarding ES as important as other discipline, moreover in all school there are no specialist teacher for truly conducting EE. So for strengthening and improvement of this kind of poor situation some recommendations are as follows: (i) Govt. should take care about the proper implication of EE in high schools in true sense of the term. (ii) Govt. should prepare a proper guideline for school management and not only this; there should be an enquiry team in every district, headed by District Inspector of School, for monitoring school education system, especially EE. (iii) It is quite impossible to appoint specialist teacher in each and every school all of a sudden, but it should rather possible to train frequently existed teachers of science faculty about environmental studies (ES) and the application of TLM in class management. (iv) Formal system of education should also incorporate in its curriculum, some elements of environmental awareness programmes. (v) Aside this, with the help of mass media and modern means of communication the concept of environment, environmental deterioration, conservation of environment etc. should be published and popularised. (vi) It would more beneficial if special programmes are launched to develop environmental awareness among the students.

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