ISSUES IN SCIENCE EDUCATION IN NIGERIA

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ABSTRACT

This paper attempted to suggest that a more humanistic, science-oriented approach to teaching should be adopted as a way of moving forward in science education in Nigeria. The paper also suggested inclusion of the issue of value clarification in science education as well as integrating science with other areas. The roles expected of the classroom teachers, ministry of education, curriculum development agencies, professional association and organized private sectors were also highlighted.

INTRODUCTION

In the year 2000 A.D and beyond there appears to be increased concern toward greater emphasis on humanistic, society-oriented science education with a value-clarification component. Therefore, science education must become more relevant to children's lives and society's problems placing more emphasis upon societal issues and problems as the focus for its processes and content. Science educators should identify issues that are relevant and controversial to the student for selection. After identifying such issues, search through them for broad appeal and importance. The essence of this is to determine those with current social concern

Although, it is difficult to handle controversial topics, but teachers have to deal with them if they are to help develop" scientifically literate citizens!. Andrew (1980) suggested the following criteria when selecting issues for science program: social relevance and controversial overtone, relevance to the student of the designated level or potential for such relevance, pertinence to several disciplines and potential for substantial direct student experience.

Community media (TV in particular) expose pupils to issues, problems and insight that stir excitement, fear, question and anger around which the society-oriented science program might be built. Some of these issues include:

- Adequate testing of "Pill" Cyclamates etc
- Racial conflict, environmental waste, pollution, energy crises;
- Over-population;
- Drug, Alcohol, Tobacco and chemical control of man's mind;
- Use of insecticides;

Activities and projects can make science education relevant to man's needs. It may be in the form of taking adequate care of pet or aquarium and observing and comparing similarities between man and animal environments; water pollution and health; food and

growth, overcrowding; life and death. Such activities create an appreciation of the relationship of life and growth to individual and group responsibility (Sharefkin 1979). With teacher's guidance, the students can be made to be aware of their community's environmental and social problems.

Suggested ways by which children can be exposed to realistic views of their own communities and their social problems includes designing city programmes in different part of Nigeria. The Programmes could be termed "City Design and Urban Change" and "Kid, Cameras, Community" etc.

The "City Design and Urban Change" should be such that it shows what can be done (even in inner-city areas) to tie together science and society through the study of pollution. The program should be designed such that it awakens in children the importance of ecological problems in city planning. Pollution problems highlight the inter-relationship between man and his environment that has special significance in studying urban ecology. Such programme is expect to expose children to such ecological concepts of grouping systems, population, food chain and food webs, communities and ecosystem and interaction as well as interdependence. These concepts are needed by children in housing, recreation, transportation and other services necessary for satisfactory living in their urban environment.

The "Kid Cameras Communities" can be designed such that children learn how to insert film and take pictures with inexpensive instamatic-type cameras. The unit should contain specially designed dark bags that serve as portable dark rooms. Using these bags, children learn to prepare developing and printing solutions. The pictures that mighty be developed tell much about the community e.g. garbage overflowing uncovered cans, "junkies" dope on street corners, derelicts sleeping in doorways, rats scurrying across backyards, kids playing ball in the traffic-congested streets etc.

It is expected that such humanistic programme will assist the children in identifying the health problems in their community e.g. littered streets, garbage collection, air pollution from incinerators etc. The children therefore see that such conditions can be improved upon if the community is alerted to these problems.

Which Way Forward?

Integrating Science with Other Area

If science is to be taught with a more humanistic, society-oriented value-clarifying approach, it will have to be integrated more with other areas of the school curriculum. Gardner (1973) identifies the following trends in the interdisciplinary approaches to science teaching:

- From discipline-based science to interdisciplinary science to fully integrated science;
- From structure courses organized in scope and sequence fashion to interchangeable modules with multiple options and high degrees of flexibility and adaptability to local, regional or national situations;
- From teacher preparation in specific disciplines to broadening teacher perspectives and teaching competencies through interdisciplinary science.

Classroom Teachers

There are many things that teachers can do. It is important that all science teachers possess the competencies necessary to handle effectively these social issues and others dealing with inter-relationships of science, technology and mankind. The teachers should therefore be confident, industrious and hardworking apart from being well trained.

Ministry of Education

State and Federal Ministries of Education should as matters of urgency do the following:

- Provide modern basic equipment in schools laboratories for use not only by the teachers but also by the students.
- Provide fund for the training of the teachers.
- Make textbooks available for the students and teachers

Curriculum Development Agency and Professional Associations

The efforts of these various bodies should be appreciated and more contributions from them should be sought for improvement in science education in the year 2000 AD and beyond. The efforts of the professional organisation will be needed in term of new issues-oriented science programs or modification of existing ones. Team writing approach is suggested in creating the new current program.

Organized Private Sectors:

Finally, organized private sectors should identify areas where they can be adequately helpful in terms of funding science projects and programmes.

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