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PROCEEDINGS

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Education for Sustainable Development (ESD): Change Agents' Perceptions through Subject of Science at Junior Secondary Level in Northern Province of Sri Lanka

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Background

After the postwar context several issues affect the sustainable development of Sri Lanka. Scientific literacy, relevant knowledge and skills are essential for understanding and addressing the issues related to sustainable development. To provide a proper education and awareness to the educational community and to the general public is one of the most effective strategies to solve these issues. And ESD-enriched primary and secondary education forms the foundation for these initiatives. Furthermore School Principals and Science teachers are the key change agents in the process of developing ESD among the school children.

Key Findings

Issues such as poverty, family violence, and consumption of liquor and drugs were frequently faced by the people in the towns/villages in which their schools are located. Natural disasters and sexual abuse were also moderately faced. The majority of school principals and Science teachers said that they have a better understanding about the concepts of SD and ESD when given the definition and requested them for rating the self understanding. But in the interviews most of them were unable to express the actual meaning of the above concepts. Only 25% of school principals and 8.08% of Science teachers had received training regarding ESD directly, even though most of them had obtained training regarding ESD related subtopics.

Teaching-learning techniques related to ESD and the out of school Science activities were “occasionally” used by Science teachers and principals in their schools. All of them agreed about the school policies and programmes which are prescribed in the curriculum for teaching-learning Science to grades 6 to 9 at their school. Their opinion regarding the cooperation extended by the personnel such as Science ADE’s, ISA’s, colleague staff and students was ‘good’, but their opinion on parents’ and community corporation is ‘satisfactory’. Formed the student associations such as Science club, disaster prevention committee, an environmental club and Nature appreciation club related to ESD in their school. They also celebrated the national and international days such as teachers’ day, children and elders’ day, hand washing day, environmental day, mental health day and health day pertaining to ESD at their school.

Research Problem

Compared with other countries, Sri Lanka is far behind in focusing on the ESD initiatives and is challenged with the task of embedding ESD atthenational, school wide and subject level. At the global level the key change agents such as School Principals and Teachers haven't adequate understanding about ESD and implementation of ESD (Burmeister *et al*, 2013; Qablan *et al*, 2009). An evaluation of their perceptions about ESD and its implementation through the subject of Science at junior secondary level is important for future development of ESD into the Sri Lankan general education.

Objectives

The objectives of the study is to identify the change agents' perceptions about

- the sustainability issues and concepts of “Sustainable Development(SD)” and “Education for Sustainable Development(ESD)”
- the implementation of ESD through the subject of Science at junior secondary level
- the constraints and barriers in the ESD implementation process and the strategies for identified challenges

Research Methodology

The study planned to use the survey method approach. A questionnaire was used as the data collection tool. The study sample consists of 60 Principals and 136 Science teachers from 60 secondary schools in Northern Province of Sri Lanka. In addition to the survey, face to face interviews were conducted with smaller sample of school principals and science teachers.

Science teachers and principals perceived many problems (Table-1) regarding implementation of ESD through junior secondary science education.

Table -1: Science teachers' and principals' perspectives about problems faced in junior secondary education

Problems faced in Science education	Science teachers' perspectives		Principals' perspectives	
	No.	%	No.	%
1. Students' related problems (Low basic literacy, Problems in Reading and Writing, Low Pre-requisite knowledge of Science and Mathematics, Poor Attendance, Low interest in study and doing practical, Less study at home, Inadequate maintenance of exercise book and Practical recording book, Psychological effects of war, Memorization Problems and Disciplinary Problems)	80	58.8	21	35.0

<p>2. Problems related to doing Practical (Lack of lab building, Inadequate facilities in Laboratory such as chemicals, apparatus and cupboards, Lack of lab assistant and attendant, Higher number of parallel classes in same grade and Problems in Organizing the practical)</p>	49	36.0	28	46.7
<p>3. School related problems (Lack of Science stream at G.C.E(A/L), Usage of Modern Equipments in teaching – learning, Inadequate time for teaching(Other workload in school), Lack and misuse of resources, Higher number of parallel classes at same)</p>	49	36.0	21	35.0
<p>4. Family related problems (Low economic level and Social Status, Parents' interest on their children's Education and their education, Problems in transport to School, Problems in transport to School)</p>	35	25.7	18	30.0

5. Curriculum related problems(Exam oriented curriculum)	10	7.4	4	6.7
Total number of respondents	136	60		

Science teachers and principals also gave suggestions for improving junior secondary Science education so that science education could contribute to sustainable development which are related to curriculum (10), pedagogy (8), resources (10) and community support (9) in different percentages.

Conclusion

According to the change agents' perception there are several sustainability issues faced by the people in the towns/villages in which their schools are located. They haven't enough understandings about the concepts of SD and ESD. They expressed their different opinion regarding using ESD pedagogies, school policies and programmes, cooperation extended by personnel and students associations and celebrated days at their schools. And they also identified many problems in the existing science education. Through solving these problems and enriching the science curriculum, pedagogy, resources and community support with respect to ESD, Sri Lanka could be expected to move towards Sustainable development.

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