



EFFECTIVENESS OF THE ENVIRONMENTAL EDUCATION PROGRAMME IN SECONDARY SCHOOLS IN MUTASA DISTRICT, ZIMBABWE

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ABSTRACT

The study was designed to evaluate the effectiveness of the environmental education programme in secondary schools in Mutasa District, Zimbabwe. The researchers employed the descriptive research design to gather data from informants on the factors that influenced implementation of the programme. Three research instruments were utilised in this research including an open-ended questionnaire administered to the secondary school teachers, a semi-structured interview with school administrators and observations made of school surroundings to determine the level of environmental consciousness of the school community. The research findings showed that school administrators accept the idea of Environmental Education and the actual teaching of components of Environmental Education in core subjects added impetus to the programme. The use of varied didactic approaches and teaching media also acted as a positive factor in promoting implementation of the programme. The research likewise revealed that the co-curricular activities to a large extent enhanced the programme implementation thrust. In the majority of cases, school surroundings were shaped into moderately stimulating environmental models. Effectiveness in programme implementation was however limited due to non-existence of functional environmental education departments and functional heads of departments for the subject. Inadequate planning and preparation of the programme activities further drew progress back. Another obstacle was absence of statutory instruments or circulars from the Ministry of Primary and Secondary Education for guidelines on programme effectuation and inadequate environmentally oriented resources. The main recommendations were that the Zimbabwean Ministry of Primary and Secondary Education should provide clear guidelines and close supervision in the implementation of the programme. On the other hand, school administrators should procure adequate resource materials for educators and learners. School surroundings should be transformed and maintained in a highly environmentally stimulating state. It was also suggested that teachers should closely monitor pupils' participation in co-curricular activities to ensure the acquisition of the desired values, attitudes, skills, and knowledge.

Keywords: Effectiveness, environmental education programme, secondary schools, Mutasa District, Zimbabwe

INTRODUCTION

This research was designed to evaluate effectiveness of the environmental education programme in secondary schools in Mutasa District in Zimbabwe. The need for sensitization of the community on sustainable development comes in the wake of environmental degradation and resource depletion. Environmental Education was considered as an ideal response to the challenge. This has necessitated the introduction of education programmes that equip citizens with knowledge and skills on how to interact with nature. The launch of the Environmental Education programme has been supported by international conventions on the state of their environment held from 1962 to 1997 (Gopal and Anand, 2006; Ministry of Science, Technology and Environment, 2002).

In developed nations, governments have begun to integrate Environmental Education within their formal education structures (Gopal and Anand, 2006). Their target has been to introduce a relevant curriculum ideal approaches, adequate and relevant resources and appropriate assessment procedures (Mckay, 2000). It has also been considered appropriate that the school be an environmental model with strong influence to stimulate environmental awareness among learners. UNEP (2007) points out that without adequate address of these issues, the implementation of an effective Environmental Education programme in schools will not succeed. The youths should be sufficiently sensitised in order for them to adapt to the environment, participate in the environment, creatively contribute to the environment and constructively transform the environment (Doğan and Akaydın, 2001).

In the developing world the implementation of Environmental Education is still in the transition stage (Jones, Selby and Sterling, 2010). Most developing nations still depend on the education systems structured by the colonial governments (Zvobgo, 2004). This has tended to limit the success of any new programmes. The education style has been irrelevant in addressing the concerns of the indigenous people. In secondary schools, subject departments are run by a heads of departments (Dinham, 2007; Little, 2000). This interdisciplinary model of curriculum development has not proved easy in the implementation of environmental education (Barton and Smith, 2000; Bialach and Dunphy, 2005). For this reason, the multidisciplinary approach has been adopted in most education systems.

The Environmental Education planners have found the cross curricular thematic didactic technique imperative in the programme effectuation (Peschar, 2000; Reid and Scott, 2002). The approach integrates education from the environment, education about the environment and education through the environment. It should be added that sound organization and coordination of the whole curriculum framework has been instrumental in the success scored in the conscientisation of pupils on environment issues (Dennis, 2002). The attitude of the programme designers and implementers has been a critical factor in successful implementation of educational initiatives (Darlington-Hammond, 2001; Hoy and Miskel, 2001). When the educators lack sufficient information, environmental awareness and zeal for the innovation, progress is compromised. The school's learning surroundings should be environmentally appealing so as to cultivate in pupils environmental sensitivity. Research in Psychology has proved that quality of the environment has a definite impact on human behaviour (Woolfolk, 2004).

It has also been observed the absence of vibrant environmental interest groups in Third World nations has affected the implementation of Environmental Education programme in the schools (UNEP, 2005). Such organizations pressurize governments to design and effect viable programmes which paves way to improvement of environmental quality (Spencer, 2001). They can also partner with government in the planning and funding of educational innovations which makes implementation of the programme easily achievable creation of vibrant environmental institutions would also promote a similar situation. Meanwhile, the curriculum is centralised and inflexible, the syllabi and examinations are derived from the metropole. Citizens considered public examinations as the most important determinant of the learners' success (Leyendecker, Ottevanger and Van den Akker, 2008). As a result, to them a curriculum reform that does not provide the educatees high status examinations success is considered of much value (Ross, 2000).

Roffe (2010) states that in some developing nations, curricula changes have been made to match educational goals and socio-economic demands of the society. In such systems integration of Environmental Education to the school curriculum has been easier. In Zimbabwe, the government has supported the implementation of Environmental Education. In primary schools, it has followed the inter-disciplinary approach. The subject content is embraced in Environmental Science. At secondary school level, the multi-disciplinary approach is followed in all schools.

STATEMENT OF THE PROBLEM

One of the greatest current global challenges is sensitisation of the public on sustainable utilisation of natural resources. The campaign for sustainable development comes in the wake of environmental degradation and resource depletion. Environmental Education acts as ideal strategy to transform the attitude and behaviour of individuals to respect environmental quality. This has necessitated the introduction of education programmes to equip citizens with knowledge and skills on how to interact with nature. In Zimbabwean secondary schools, the environmental programme follows a multi-disciplinary model. There has been heated debate among educationists on the effectiveness of this pedagogical approach to sensitise the youth on the value of respect and care for environmental quality. This has prompted the researchers to carry out effectiveness evaluation of the programme in secondary schools in Mutasa District.

RESEARCH QUESTIONS

The present study was guided by the following research questions:

Main research question:

1. How is the Environmental Education programme in secondary schools in Mutasa District organised and coordinated?

Sub-problems of the study

2.1 What are the teachers' attitude, preparedness and involvement in the Environmental Education programme in promoting environmental awareness among students?

3.2 What is the quality and quantity of material resources used by the teachers in Environmental Education appropriate?

4.3 What didactic approaches and assessment methods do teachers use in the Environmental Education programme in secondary schools?

5.4 What school co-curricular activities are carried out to promote environmental awareness among secondary school students in Mutasa District?

REVIEW OF RELATED LITERATURE

The main focus of the study is to evaluate effectiveness of the Environmental education programme in secondary schools in Mutasa District. The implementation of Environmental education in both developed and developed nations has been long over-due. Environmental education has been seen to be the most effective strategy through which the character of human interaction with the environment can be transformed. However, implementation of the programme in both advanced economies and Third World countries has not been without challenges.

Environmental education has its origin in the human manipulation of nature that has led to the habitat degradation, reduction in composition, soil erosion, siltation and pollution. The chief human problem has been failure to perform activities within the carrying capacity of natural support systems and low commitment to environmental protection (Rischar, 2001). Humanity has the capacity to exercise sustainable utilization of resources. The origin of Environmental education as a discipline is related to key events that raised awareness on the need for protection of nature. The implementation of the programme in schools is governed by internationally agreed set of guidelines which has encouraged educationists to consider Environmental education to be a lifelong process beginning from pre-school level continuing through all formal and non-formal education structures. It must draw experiences from indigenous history and local culture (Zulu and Bunche, 2006).

In education, a variety of curriculum development paradigms are at the disposal of environmental educationists. In this study, the curriculum has been a factor influencing implementation of the environmental education programme. One option is the inter-disciplinary approach in which the environmental education programme acts as a single discipline and can be subjected to independent assessment and evaluation. One can relate it with the integrated curriculum action paradigm (Bialach and Dunphy, 2005). Only a few countries have effected Environmental Education this way. On the other hand, the multi-disciplinary approach fuses components of Environment Education with other disciplines. This approach falls under the green curriculum paradigm. It has been observed that the inter-disciplinary approach can be easily implemented and makes use of less teachers but demands higher budget allocations (Barton and Smith, 2000). It may be regarded as more ideal for the secondary school situation.

In the interdisciplinary model, the subject is managed just as done of other subjects. The set-up is common in education systems of Third World countries. School authorities appoint a coordinator is appoint to managean education programme. His or her task is to manage effectuation of the programme and monitor the progress being made (Busher and Wise, 2011). Apart from these roles, he or she directs the main activities of the department and prepares and chairs departmental meetings. Regular meetings provide platforms for discussions and prepare educators to face didactic challenges with confidence and competence (Anderson, 2002). On the other hand, with regards to the multi-disciplinary approach, curriculum reorganization is in the hands of the teacher. The officer as a subject specialist in Mathematics, Physics, Chemistry, Mathematics, Geography or any other subject handles the social, political and cultural dimensions of the Environmental education. It is the duty of the school authorities to ensure

appropriate staff development of officers to empower them so that they are to handle implementation of the programme (Joyce and Showers, 2002).

In the successful implementation of Environmental education in schools, the educator is a key factor. The teacher is believed to be in possession of knowledge and skill to transform the learner into an informed and active participant in fruitful production in his or her community and society (Price, 2004). The didactic situation permits him or her to determine on behalf of the learner the quality and quantity of learning in addition to material and when and how the didactic activities are executed (Kemp, 2002). The educator has the autonomy to determine objectives, content, activities and apparatus in the teaching – learning. He or she is known to possess command of the theoretical subject content, understanding of child behaviour and a repertoire of teaching skills and techniques that enable him or her to best handle the didactic situation (Woolfolk Hoy, Demerath, and Pape, 2002). A competent teacher carefully monitors the lesson as it progresses and examines the results on the teaching - learning sessions (Price, 2004).

In Environmental Education, the importance of availability of relevant literature cannot be over-emphasised. In Third World countries, shortage of material resources needed to facilitate learning has been a common feature. Financial constraints have always forced school authorities to acquire quantities that are far below what is required. The teaching-learning programme takes into account education about the environment, education for the environment and education through the environment (Udry, 2003). Unless sufficient relevant literature is available, effective implementation of the Environmental education programme is difficult to achieve.

Didactic strategies employed by educators are also a key factor in the teaching-learning of environmental education. Several theories have been put forward and educationists strongly recommend the transmission teaching model. The transition model suggests that the educator uses show and tell, solitaire and communicates with learners using a variety of teaching media (Milner and Woolfolk Hoy, 2003). This approach has been of limited use in Environmental education due to its consideration of learners as passive participants in learning. Environmental educationists favour constructionism which is more learner-centered. The theory considers educatees as active participants in learning. It regards them as having potential since they bring into the didactic process their own experiences and understanding. This model brings the learner into touch with environmental phenomena. Behaviourists stress on the teachers role in changing the learners' behaviour and its advocates include Thorndike, Bruner, Skinner and Pavlov to mention but a few. Behaviourism however draws some criticism because it ignores the learners' ideas, meanings and experiences in the teaching –learning process (Woolfolk, 2011).

Co-curricular activities are also regarded as a significant influence in environmental education. The learner gets the opportunity to participate in programmes outside intellectual work which allows him or her to attain an inner consuming experience (Holloway, 2002). The school can organise environmentally oriented clubs and student participation in the activities sensitizes them on the value of wise utilization of the environment. Work on environmental oriented projects also strongly influences learners' development of attitudes, skills and knowledge on importance of environmental quality.

The physical outlook and maintenance of school infrastructure and surroundings also promote environmental awareness among learners. In other words, the appearance of institutions reveals the environmental consciousness of on part of planners and cultivates a sense of environmental consciousness among observers (Tuncer, Ertepinar, Tekkaya and Sungur, 2005). Well established

and maintained system of lawns, shrubs and flowers instils in educatees a deep sense of appreciation of the beauty of nature. Peaget, a leading educational psychologist stresses that a highly stimulating environment has a strong pedagogical impact on the learning of the child. Some educatees learn better through their own personal experiences outside formal learning programmes (Tuckman, 2004).

METHODS AND SETTING

A descriptive survey research design was applied to collect data in response to the research questions. It was found ideal due to its appropriateness in eliciting data for studies of this nature. Creswell (2012) stresses that the descriptive survey research design is instrumental in research involving humans as data source. It permitted the researchers to collect verbal information from school administrators. At the same time, it allowed the researcher to present the product of study in detailed descriptive terms in answer to the research problem and effectiveness evaluation of the environmental programme in secondary schools in Mutasa District was easily communicated. Tuckman (2000) defines this research design as an in-depth investigation of an individual or institution to determine the variables and relationships influencing the current behaviour or status of the subject under study. Best and Kahn (2000) share the same view and say it is an organized attempt to describe and interpret what exists at present in form of conditions, practices, processes, trends, attitudes and effects. Although the descriptive survey research design is non-experimental, its qualitative nature helps describe findings in a satisfactory accurate and clear manner. This was the chief goal of the study carried out. The design involved use of the questionnaire, face to face interviews and direct observation in data collection. Questionnaires were administered to secondary school teachers who were the actual implementers of the Environmental Education programme. From 54 secondary schools in Mutasa District, a sample of 12 schools was drawn. The target population was 769 secondary schools teachers from which 120 teachers were selected for the questionnaire survey. Interviews made possible capture of firsthand information from school administrators on issues related to the programme implementation. On the other hand, direct observation of school surroundings and activities enabled the researcher to establish tangible evidence on the extent to which the programme is being implemented. According to Khan (2006) in descriptive research 10 percent to 30 percent of the targeted population creates a suitable sample. In consonance with this notion, the subject sample for the questionnaire survey consisted of 120 teachers sampled from the targeted teacher population. The sample constituted 15.7 percent of the projected teacher population of the district. The researcher conducted interviews with school heads or their representatives at the 12 selected schools. The drawn schools constituted 33.3 percent of the total number of schools in the district.

In this study, the simple random sampling technique was used to select the 12 secondary schools from the targeted thirty six institutions. The sampling was done using the table of random numbers. The numbers allocated to the schools are the same as those used by the surveyor general in carrying out social surveys. To determine the number of participants in the questionnaire survey per school, quota sampling in conjunction with simple random sampling was employed. At each sampled secondary school, a quota of 10 teachers participated in the survey. The justification of the researcher's application of this approach lies in that in qualitative research, sampling processes are dynamic and are applied to suit specific situations (Shamo and Resnik, 2009). This is characteristic of descriptive surveys. Meaningful conclusions on the

research are guaranteed. The sampled schools for this research included A, B, C, D, E, F, G, H, I, J, K and L.

Research instruments

Questionnaire

The questionnaire was an ideal instrument for the purposes of this study because it offered the economy of time and facilitated a quick collection of data from a large population. At the same time, it ensured capture of a wide variety of data from the projected teacher population and schools of Mutasa District. The instrument was composed of thirty one items that were mixed into closed and open ended questions. The data generated included social demography, organization and co-ordination of the Environmental Education programme in the school, teachers' attitude, preparedness and involvement in the programme, quantity and quality of resources in Environmental Education in the school, teaching techniques in the programme and co-curricular activities involving Environmental Education in the school.

Interviews

As indicated earlier, in this study the researchers held face to face interviews with school administrators or their representatives at the sampled schools. The tool was found ideal in that the researcher had the opportunity to probe the informants for more specific answers and clarity. The author was able to capture precise details from the individuals who actually plan, organise and supervise implementation of the Environmental Education programme in schools. Best and Kahn (2002) emphasizes that findings of interviews are useful back-up information to cross validate data solicited through questionnaires. Accordingly, face to face interviews enabled the researcher to depict attitudes, feelings and emotions of the interviewees. It became possible to find out the reactions of administrators and judge the seriousness with which Environmental Education was treated.

Observation

An observation guide was used to firsthand information on the physical environment and co-curricular activities at sampled schools was carried out. The state of the school surroundings can stimulate environmental consciousness within educates. Hence, though observation of the physical outlook of institutions environments and co-curricular activities the researchers were able to determine the level of environmental awareness within a school community. Findings of the observations were used as appropriate back up material for information gathered through questionnaires and interviews. Observation as a data collection method also draws credit in that it provides instant information and saves time (Best and Kahn, 2002). In this way this approach enabled the researchers to gain immediate tangible evidence on the state of school lawns, shrubs and flowers quality of afforestation and rehabilitation of degraded sites as well as the purposefulness of co-curricular activities in the schools. In this study, the researchers made use of ratings scales in assessing the environmental aspects of the school surroundings and co-curricular activities. Rating scales are a basic mechanism in reducing subjectivity (Sergiovanni and Starrat, 2002). Data collected through the questionnaire, interview and observation combined. The main tenets of the chapter include organization and coordination of the programme, educators attitude, preparedness and involvement in its implantation, quality and

quantity of resources materials used in the schools, teaching techniques and the value of co-curricular activities in promoting environmental awareness amongst pupils. Bar graphs, pie charts and tables were as the chief media in presentation of numerical data.

PRESENTATION OF DATA

The presentation of results of the questionnaire, interviews and observation were combined. The findings of the questionnaire survey were presented using bar graphs, pie charts and tables while those of interviews and observation were shown in narrative.

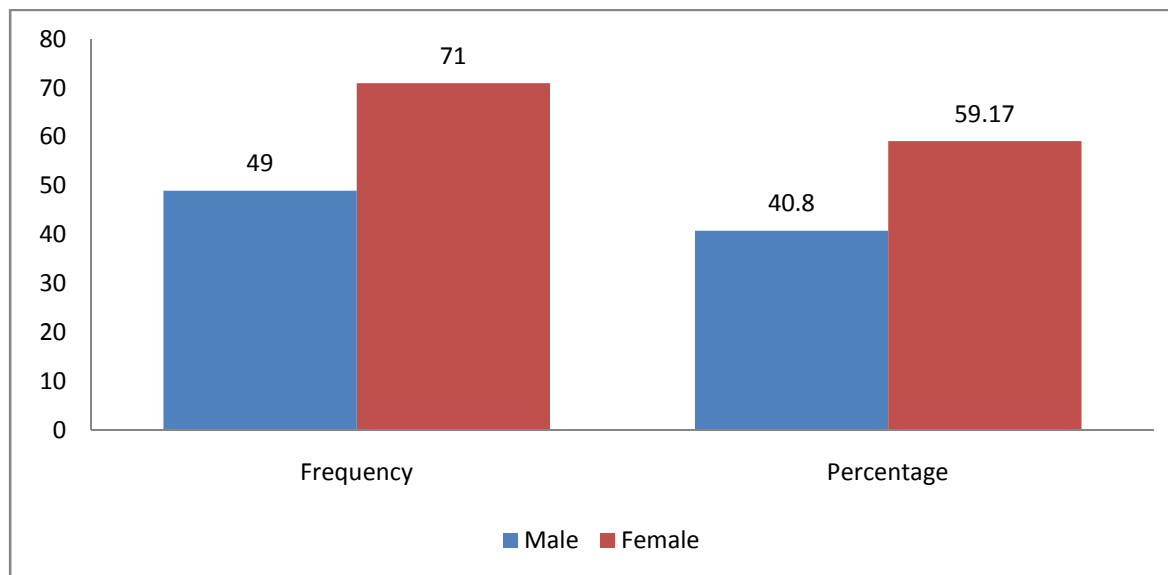


Figure 4.1: Sex distribution of sampled secondary school teachers

Figure 4.1 shows that the male teachers constituted 49 (40.8%) and their female counterparts made up 71 (59.2%).

The age distribution of sampled secondary school teachers is shown on Figure 4.2 below

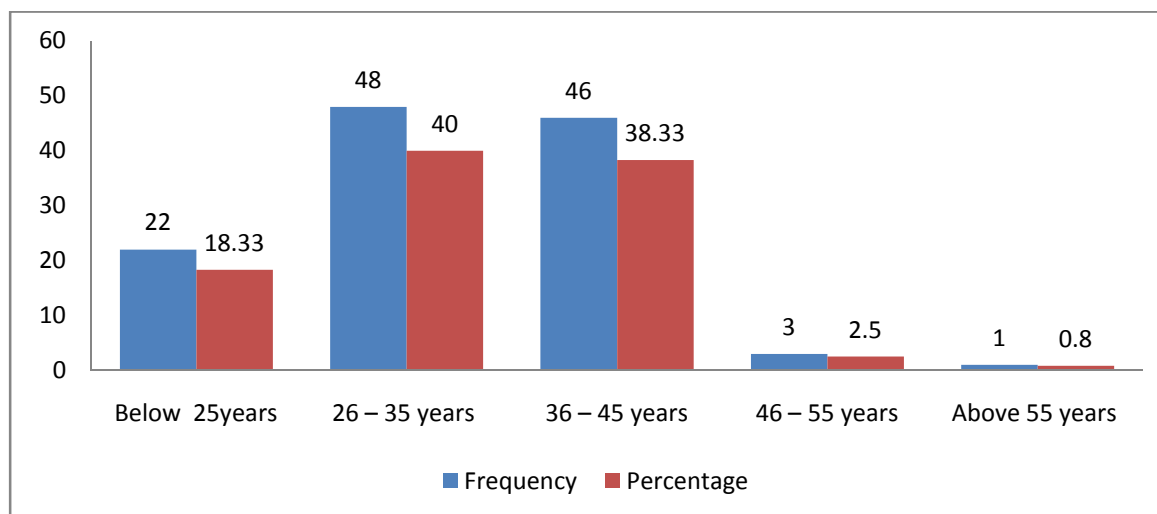


Figure 4. 2: Age distribution of sampled secondary school teachers

Figure 4.2 shows that the age categories of 26-35 years registered the highest response rate of 48(40%) and the age category of 36-45 years recorded 46(38.33%). Respondents of age below 25 years registered a response rate of 22(18.33%).

The marital status of the sampled secondary school teachers is shown on Figure 4. 3 below

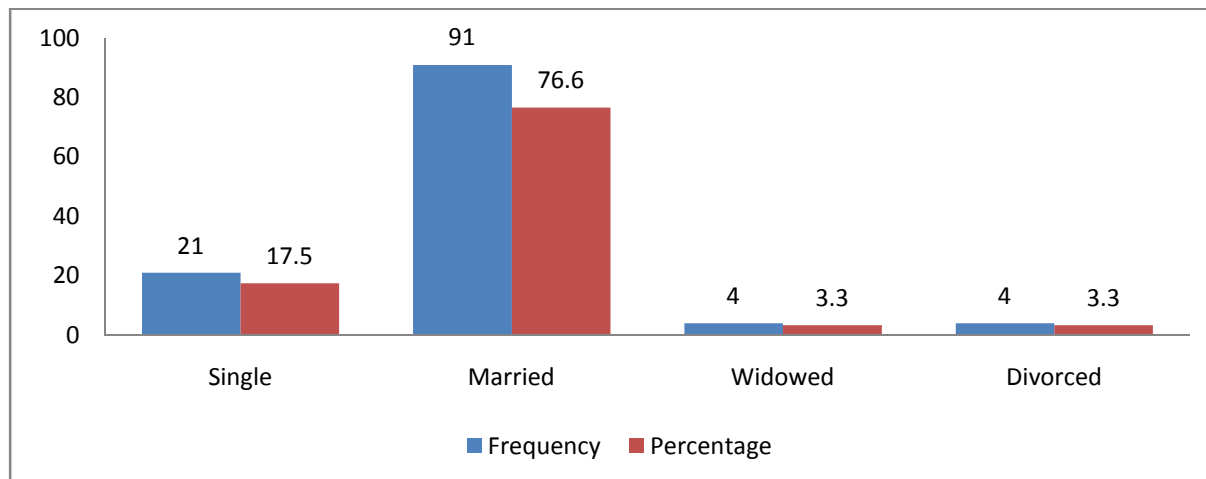


Figure 4. 3: Marital status of the sampled secondary school teachers

Figure 4.3 shows that the majority of the respondents 92(76.6%) were married. Only 4(3.3%) of the respondents were widowed and another 4(3.3%) were divorced.

The professional qualifications of sampled secondary school teachers are shown on Figure 4. 4 below

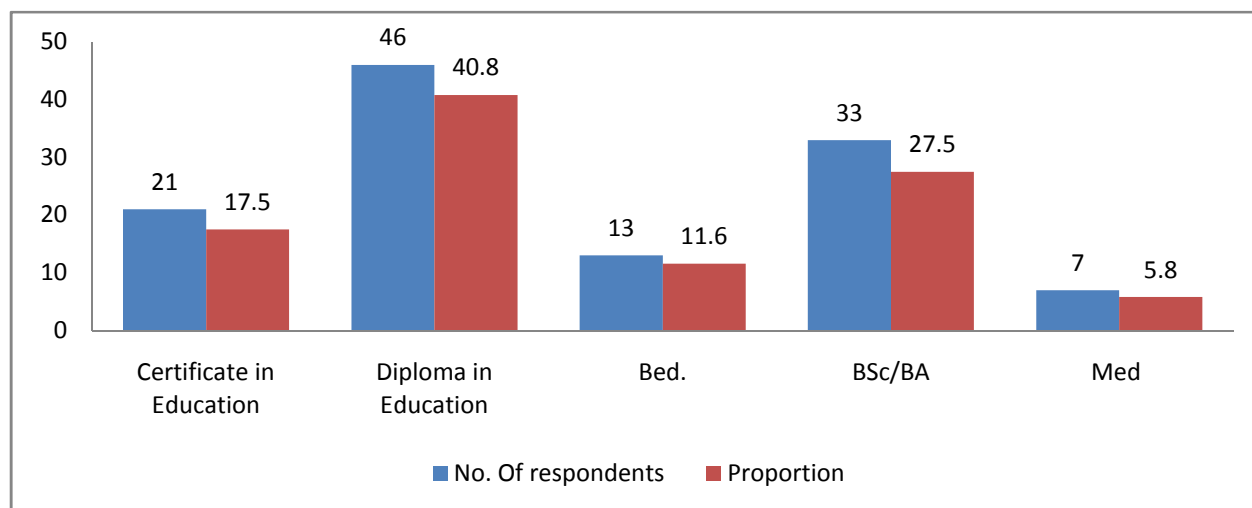


Figure 4.4: Professional qualifications of sampled secondary school teachers

Figure 4.4 shows that respondents in possession of Diploma of Education registered the highest response rate of 46(38.3%) and those with Bachelor of Science or Arts degrees registered a response rate of 33(27.5%). The lowest response rate was recorded in the 'Med' category with 7(5.8%).

The teaching experience of sampled secondary school teachers is shown on Figure 4.5 below

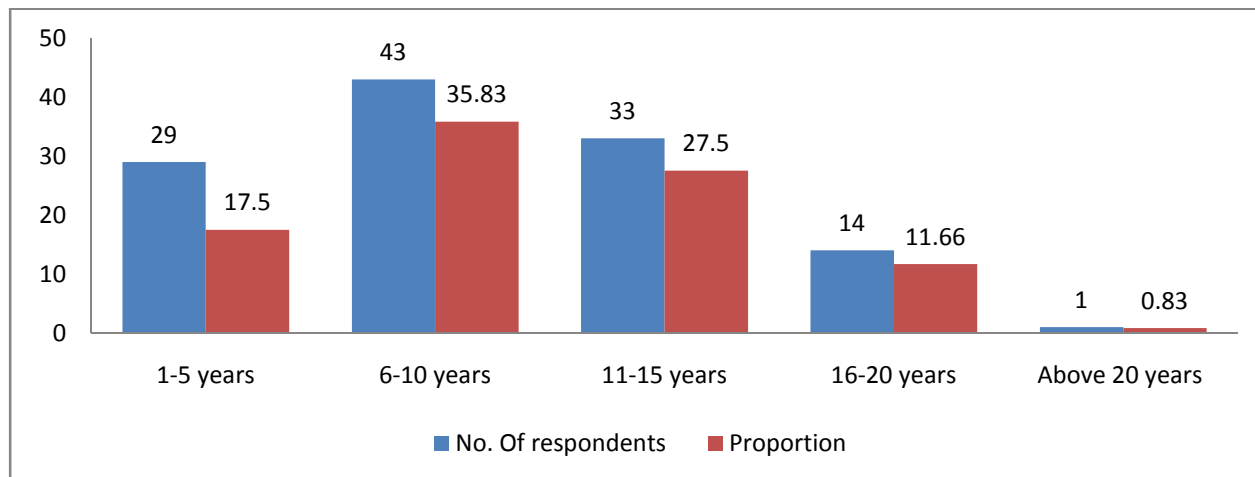


Figure 4.5: Teaching experience of sampled secondary school teachers

Figure 4.5 shows that 43(35.83%) of the respondents had been in the teaching field for 6-10 years while 33(27.5%) had been in the field for 11-15 years. Those who had been in the field for 1-5 years were 29(24.3%). Only 1(0.83%) had been in the teaching field for more than 20 years.

Organisation and coordination of the environmental education in schools

One hundred and two respondents(85%) indicated that the environmental education programme in schools operated under no subject department and no specific coordinator. This was confirmed in interviews with school administrators. It was revealed that the implementation of environmental education followed the multi-disciplinary approach in which aspects of the subjects were taught as components of other subjects. The administrators added that the curriculum was so rigid that it would not accommodate the subject. It was difficult to create any space for the subject on the school time-table because the time-table was congested. One school head pointed out that there was no statutory instrument from the Ministry of Primary and Secondary Education which directed and guided schools to implement Environmental Education as a subject.

Table 4.1: Respondents' perceptions on whether staff development sessions that included environmental education were held in the schools

Response	Frequency	Percentage
Yes	86	71.6
No	34	48.4
Total(N)	120	100

Table 4.1 shows that 86(71.6%) of the respondents indicated that staff development sessions that included environmental education were held in the schools. The respondents' perceptions on whether the staff development sessions motivated staff members to integrate environmental issues in their lessons are shown on Figure 4. 6.

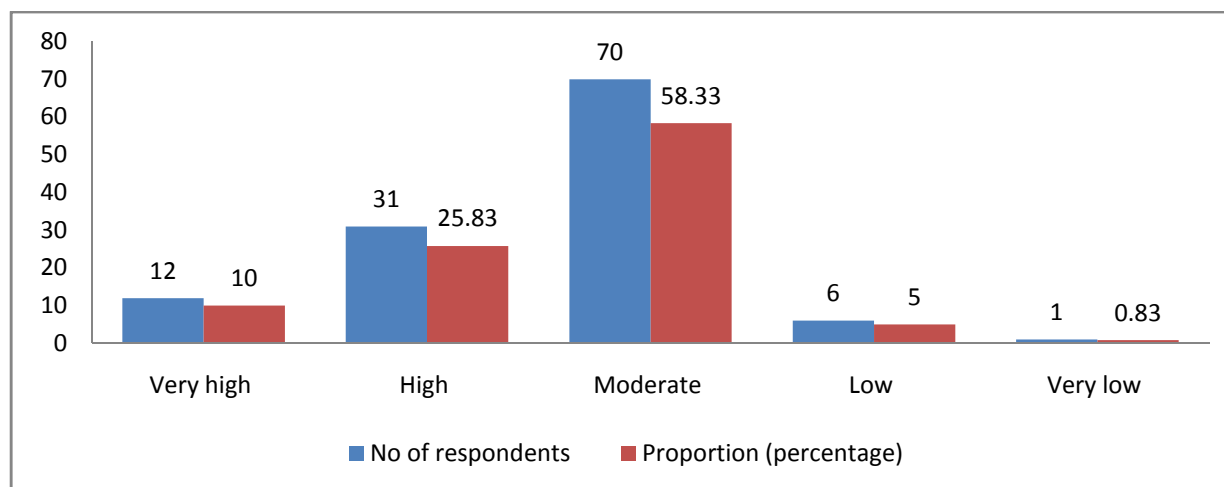


Figure 4.6: Respondents' rating on motivation of staff through staff development sessions in schools in Mutasa District

Figure 4.6 shows that 12(10%) and 31(25.83%) of the indicated respondents rated the motivating effect of staff development sessions on staff members to maintain the school environmental quality as 'very high' and 'high' respectively. The majority of the respondents, 70(58.3%) indicated that the effect was moderate.

On being asked the perceptions on the availability of clearly defined documented policy on Environmental Education, 77(65%) of the respondents revealed that in schools there existed no clearly defined documented policy on Environmental Education.

Table 4. 2: Respondents' view on reasons for lack of defined documented policy on Environmental Education in schools.

SA- strongly agree, A- agree DA- disagree, SD strongly disagree	Ranking							
	DA		S D		A		S A	
	No	%	No	%	No	%	No	%
The programme is not taken seriously	10	8.3	9	7.5	69	57.5	32	26.6
The coordinator is not competent	35	29.2	57	47.5	16	13.3	12	10
There is no specific coordinator for the programme	16	13.3	13	10.8	42	35	49	40.8
The school is in the process of preparing one	23	19.2	24	20	40	33.3	33	27.5
School authorities negatively view the programme	27	22.5	30	25	35	29.2	28	23.3

Table 4.2 shows that of the 120 respondents, 32(26.6%) and 69(57.5%) strongly agreed and agreed respectively on the notion that the programme was not taken seriously in schools. Another factor which showed prominence and registered 42(35%) and 49(40.8%) response rate in the strongly agreed and agreed category respectively was that there existed no specific coordinator for the programme. In face to face interviews with the researcher, school administrators expressed the view that they were in a dilemma. They went on to say that appraisal of teacher performance was result based and the slogan of the Manicaland provincial office was “Manicaland for results” which forced schools and teachers to give higher priority to activities that yielded high academic results for pupils.

The respondents’ perceptions on effect of the current multi-disciplinary set up on the teaching of Environmental Education are shown on Figure 4.7.

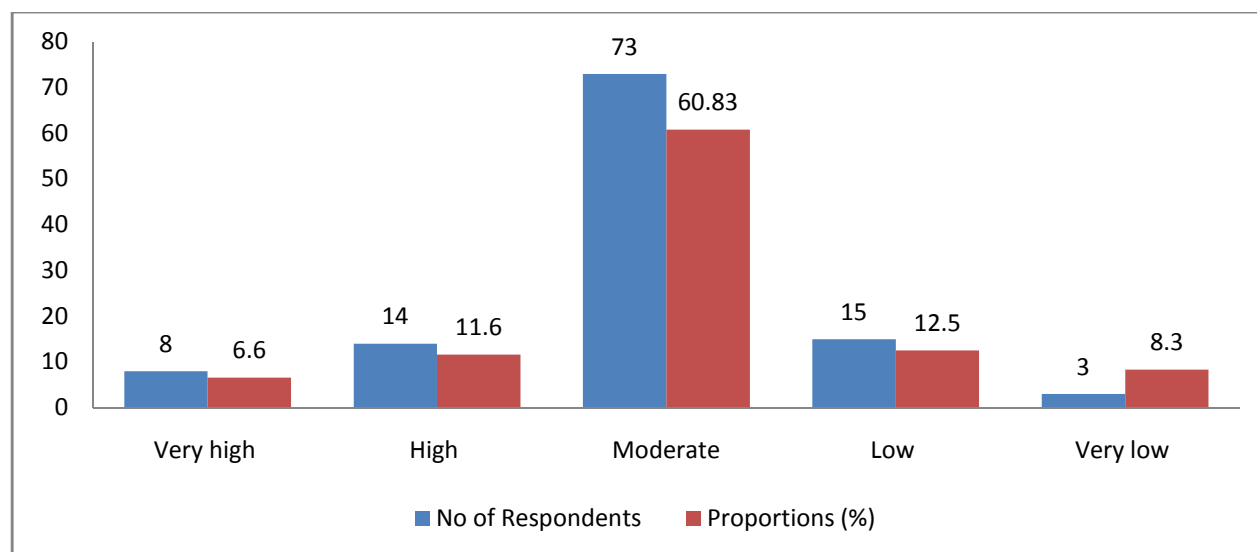


Figure 4.7: Respondents’ views impact of the existing set up in Environmental Education

Figure 4.7 indicates that the majority of the respondents 60(72%) viewed the effect of the current set up of the Environmental Education programme in promoting environmental awareness amongst pupils as moderate. Only 10(8.3%) of the respondents indicated that the extent was very large and 12 (10%) showed that it was large. The perceptions of participants on subjects taught by secondary school teachers sampled in Mutasa District are indicated on Table 4.3.

Table 4.3: Subjects taught by secondary school teachers sampled in Mutasa District.

Subject	No. of respondents	Proportion (%)
Mathematics	105	87.5
English Language	120	100
Shona	101	84.2
History	75	62.5
Integrated Science	112	93.3
Biology	48	40
Chemistry	24	20
Commerce	113	94.1
Agriculture	84	70
Building	13	10.8

Geography	15	12.5
Woodwork	10	8.3
Fashion and Fabrics	13	10.8

Table 4.3 shows that English Language registered the highest response rate with 100% seconded by Integrated Science with 112(93.3%). The lowest response rate of 10(8.3%) was captured in Wood Work. Only 10(8.3%) of the respondents indicated that the extent was very large and 12 (10%) showed that it was large. On being asked on the existence of components of environmental education within their subject syllabi, 81(67.5%) of the respondents indicated positive impressions on the view. Most school administrators confirmed this finding during the semi-structured face to face interviews with the researcher. They gave some as of the subject areas as Integrated Science, Biology, Chemistry, Agriculture, Geography, Fashion and Fabrics, Building and Wood Work.

The views of participants on reasons for non-inclusion of environmental issues in lesson preparation, respondents showed perceptions on Table 4. 4.

Table 4.4: Respondents views on factors for non- inclusion of environmental issues in lesson preparation.

SA- Strongly, A- Agree D. A.- Disagree SD- Strongly Disagree	Ranking							
	SA		A		DA		SD	
	No	%	No	%	No	%	No	%
It is a waste of time	23	19.2	30	25	37	30.8	30	25
Examinations do not take into account environmental issues.	49	40.8	36	30	15	12.5	20	16.7
Lesson objectives do not take into account environmental issues.	58	48.3	49	40.8	9	7.5	4	3.3
Reference to environmental issues demotivates pupils in my subject area	15	12.5	21	17.5	48	40	36	30
Environmental issues are divorced from my subject area.	34	28.3	33	27.5	28	23.3	25	29.2
Environmental issues are difficult to explain.	12	10	24	20	44	36.7	40	33.3

Table 4.4 indicates that of the 120 respondents, 49(40.8%) and 36(30%) fell in the ‘strongly agree’ and ‘agree’ categories respectively on the perception that examinations did not take into account environmental issues. Another factor that gained prominence was that lesson objectives did not at all take into account Environmental Education. Of the 120 respondents, 58(48.3%) fell in the ‘strongly agree’ and 49(40.8%) in the ‘agree’ category on the opinion that Lesson objectives do not take into account environmental issues. The third factor that received prominence as contributing to apathy in application of the concepts of Environmental Education in lessons by teachers was the question of divorce of environmental issues from subject areas. Thirty-four(28.3%) of the interviewees ‘strongly agreed’ and 33(27.5%) agreed respectively to the view. In interviews conducted, school administrators confirmed this trend and expressed doubt on teachers’ inclusion of environmental issues in lesson preparation and lesson delivery. They confessed that teachers appeared focused on work that raised student pass rate. They went on the

say that that schools had developed the practice of rewarding teachers who achieved outstanding academic results especially in the examination classes.

The perceptions of respondents on level of teacher participation in outdoor environmentally biased activities in the schools is shown on the Figure 4.8.

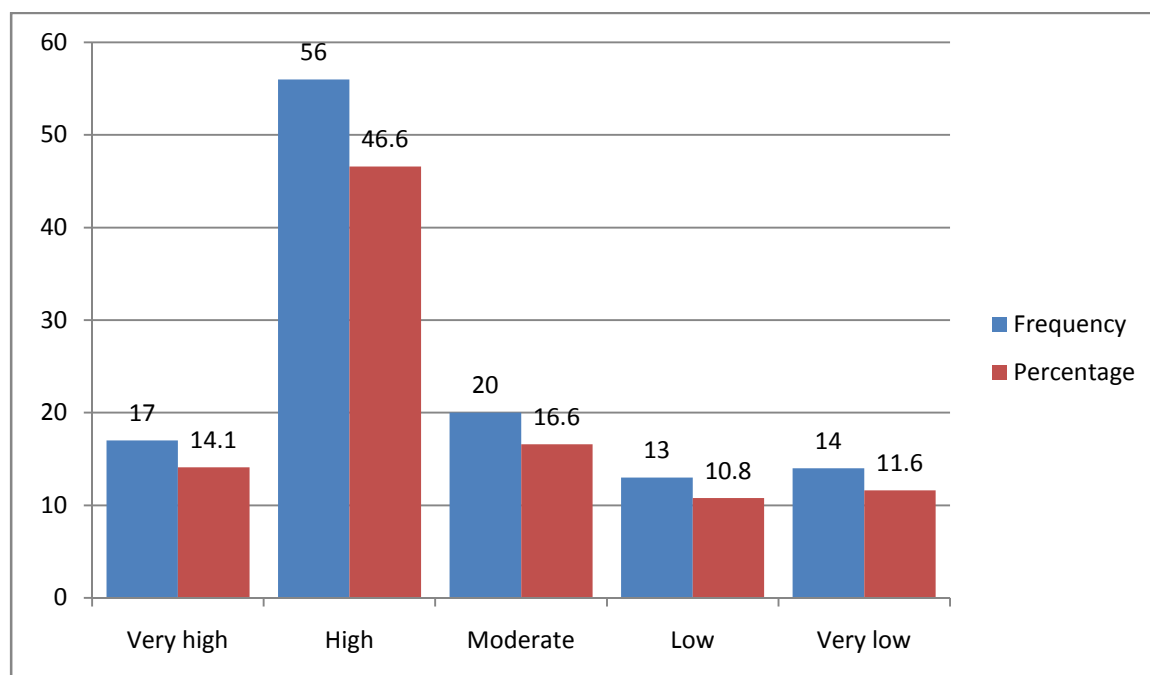


Figure4.8: Respondents' views on teacher participation in outdoor environmentally biased activities in the school.

Figure 4.8 shows that 17(14.1%) of the respondents indicated that teachers in schools in Mutasa District to a 'veryhigh' extent participated in environmentally biased outdoor activities. Fifty-six (46.6%) of the respondents showed that the extent was 'high'. In interviews with the researcher, school administrators said that most of the school teachers maintained good flower gardens at their cottages and maintained short grass around their premises.

Quality and quantity of material resources in environmental education in schools

The perceptions of participants on the quality and quantity of material resources in subject areas are shown on Table 4.5.

Table 4.5: Textbook- pupil ratio in subject areas taught by sampled teachers

Text-book- Pupil ratio	No of respondents	Proportion (%)
Below 1: 5	115	95.8
Between 1: 6 and 1: 10	4	3.3
Between 1: 11 and 1: 20	1	0.8
Above 1: 20	0	0
Total (N)	120	100

Table 4.5 shows that of the 120 interviewee, 115 (65.9%) revealed the existence of a textbook-pupils ratio of 1: 5 and below. There was no respondent in the 'Above 1: 20' category. The interviewed school administrators said that with the ETF books donated by UNICEF, textbook

shortage has been alleviated in the ordinary and junior certificate levels. The core subjects covered by the textbook grant included Mathematics, English Language, Shona, History and Geography. Shortages still remained in other areas. Most A-level school Heads added that their schools experienced shortage of resources which greatly affected the performance of their students in ZIMSEC A-level examinations.

The participants' views on relevance of available resources in promoting Environmental Education are shown on Table 4.6.

Table 4.6: Rating on suitability of available material resources in promoting Environmental Education

SA- Strongly, A- Agree D. A.- Disagree SD- Strongly Disagree	Ranking							
	SA		A		DA		SD	
	No	%	No	%	No	%	No	%
The pupils' resources are in very small quantities	21	17.5	18	15	45	37.5	36	30
Resources have little bearing with environmental issues	49	40.8	56	47	6	5	9	7.5
Text book materials are poorly organized	16	13.3	19	15.8	29	24.1	56	46.7
The language used in textbooks is difficult	34	28.3	49	40.8	21	17.5	16	13.3
The textbooks lack adequate illustrations	41	34.2	51	42.5	17	14.2	11	9.2

Table 4.6 shows 81(67.5%) of the respondents recorded negative impressions on the opinion that pupils' resources are in very small quantities. Of the 120 respondents, 105(87.5%) respondents registered positive impressions on the view that resources available had little bearing with environmental issues. Commenting on the suitability of available material resources in promoting Environmental, most school heads said that although books in the various subject areas were not meant specifically for environmental education, pupils benefited something in terms of the environment in concepts they read on. They went on to say that pupils however benefited most when the covered materials that had direct bearing with environmental issues.

Table 4.7: Rating of adequacy of literature related to Environmental Education

SA- Strongly, A- Agree D. A.- Disagree SD- Strongly Disagree	Ranking							
	SA		A		DA		SD	
	No	%	No	%	No	%	No	%
The school library has plenty of environmentally biased magazines	23	19.6	10	8.3	21	17.5	54	44.6
The school library has plenty of environmentally biased books	14	11.6	17	14.1	62	51.6	11	9.16
Our pupils show interest in environmentally biased literature	30	25	43	35.6	32	26.6	13	10.8
The school authorities regularly order reading materials on environmental issues	23	19.1	13	10.8	49	40.8	38	31.6
The school regularly receives copies of local newspapers with environmental issues	14	11.6	22	18.3	36	30	28	23.3

Table 4.7 shows that only 33(27.5%) of the respondents recorded positive impressions on the view that the school libraries had plenty of environmentally biased magazines and 31(25.8%) also registered positive impressions on the view that school libraries had plenty of environmentally biased books. Twenty-three(19.16%) of the research subjects 'strongly agreed' and 13(10.8%) 'agreed' to the idea that school authorities regularly ordered reading materials on environmental issues. School administrators echoed the sentiment that it was difficult to secure adequate resources due to limited financial resources. They went on to say that in the past donors assisted schools with library books and this had become rare due to donor fatigue.

Teaching techniques in environmental education in sampled schools

The perceptions of participants on teaching aids used by secondary school teachers in their subject delivery were indicated on Table 4.8.

Table 4.8: Teaching media used by secondary school teachers sampled in Mutasa District

Teaching medium	No of respondents	Proportion (%)
Slides and film strips	4	3.3
Computers and videos	3	2.5
Maps and sketch diagrams	52	43.3
Photographs and cartoons	18	15
Black/ green board illustrations	91	75.8
Text pictures	59	49.1
Overhead projector, charts models	18	15

Table 4.8 above shows the black/green board illustrations registered the highest response rate of 91(75.8%) and use of maps and sketch diagrams registered the second highest response rate of 52(43.3%). Application of computers and videos recorded the least response rate of 3 (2.5%). It emerged that only 38(31.6%) of the respondents recorded positive impressions on the influence of the applied teaching media in promoting environmental awareness among pupils.

The views of participants on teaching methods used by teachers sampled in Mutasa district are shown on Table 4.9.

Table 4.9: Teaching methods used by teachers sampled in Mutasa district

Teaching method	No of respondents	Proportion (%)
Debates	24	20
Lecture method	69	57.5
Experimental approach	39	32.5
Lecturettes	12	10
Panel discussions	36	30
Demonstrations	69	57.5
Games and stimulations	20	16.6
Text reading	53	44.1
Field Work	45	37.5
Use of resource persons	6	5
Group and pair work	67	55.8

Table 4.9 shows that the lecture method and demonstrations captured the highest response rate of 69(57.5%) each. Group work registered the second highest response rate of 67(55.8%). The lowest response rate was 6(5%) was registered in use of resource persons. School administrators confirmed this trend during semi- structured interviews. Most of them indicated that use of lecturers and panel discussions were most common at A-level and in lower forms groups work was greatly encouraged as it promoted a high level of pupil rapport.

Perceptions of participants on usefulness of teaching techniques in integrating environmental issues in lessons are indicated on Figure 4.9.below.

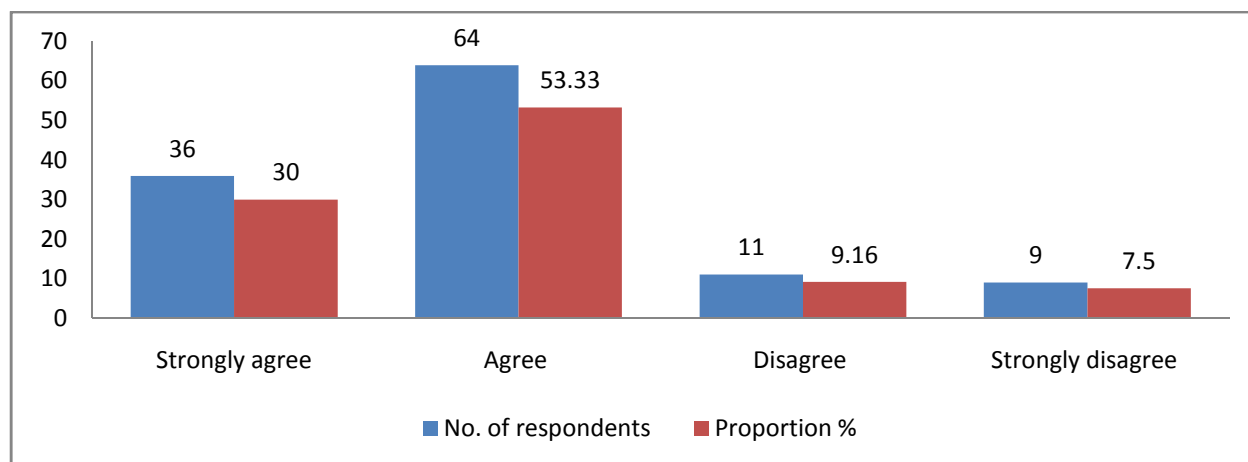


Figure 4.9: Rating on usefulness of teaching techniques in integrating environmental issues in lessons.

Figure 4.9 shows that of the 120 respondents, 64 (53.3%) occurred in the 'agree' category and 36(30%) in the 'strongly agree' category. Only 20(16.7) registered negative impressions on the view.

Co- curricular activities and environmental awareness in the schools

Views of participants on environmentally related clubs that operated in schools sampled in Mutasa District are indicated in Table 4.10.

Table4. 10: Environmentally related clubs in schools sampled in Mutasa District

Club	No. of respondents	Proportion (%)
Young farmers club	49	40.8
Environmental Action club	22	18.3
Wildlife societies	11	9.1
Conservation groups	17	14.1
Scouts	7	5.8
Environmental liaison groups	12	14.4
Consumer protection group	5	4.1
Herbal groups	1	0.98
Total(N)	120	100

Table 4.10 shows that pupils' participation in the Young farmers club registered the highest response rate of 49(40.8). Their involvement in the Environmental Action club registered the next highest response rate of 22(18.3%) followed by Conservation groups with 17(14.1%). Herbal groups recorded the lowest response rate with a response rate of 1(0.98%). Asked to rate how far environmentally related clubs in schools sensitized pupils to take care of the environment, the perceptions shown on Table 4.11 were registered.

Table 4.11: Extent on effect of club activities in sensitizing pupils to take care of the environment

Extent	No of respondents	Proportion (%)
Very high	27	22.5
High	43	35.83
Moderate	45	37.5
Low	3	2.5
Very low	2	1.6

Table 4.11 shows that 27(22.5%) of the respondents indicated that effect was 'very high' while 43(35.83%) indicated that the extent was 'high'. In the 'low' and 'very low' categories, the response rate was 3(2.5%) and 2(1.6%) respectively. In semi-structured interviews with school administrators, it was revealed that pupils very actively participated in the environmentally biased clubs under the guidance of their club masters. The school heads also confessed that the pupils showed a high level of enthusiasm to know about natural phenomena. Perceptions of participants on co- curricular activities on maintenance of school surroundings at sampled schools are shown on Table 4.12

Table 4.12: Co- curricular activities on maintenance of school surroundings at sampled schools

Environmental aspect	No of respondents	Proportion (%)
Shrub and flower planting	57	47.5
Lawn planting, watering and cutting	41	34.1
Shrub pruning and grass cutting	30	25
Terracing of steep slopes	32	26.6
Litter picking and burning	86	71.6
Afforestation	52	43.3
Establishment of storm drain and contour ridges	33	27.5
Filling in ditches and grooves with earth	31	25.5
Maintenance of natural habitats, planting herbal gardens	7	5.8

Table 4.12 shows that the most common environmental activity revealed was litter picking and burning which captured response rate of 86(71.6 %). Other outstanding activities were shrub and flower planting with a response rate of 57(47.5%) and afforestation with 52(43.3%). Maintenance of natural habitats and planting herbal gardens registered the lowest response rate with 7(5.8%).

Perceptions of participants on the extent of environmental stimulation of school surroundings are shown on Figure 4.10.

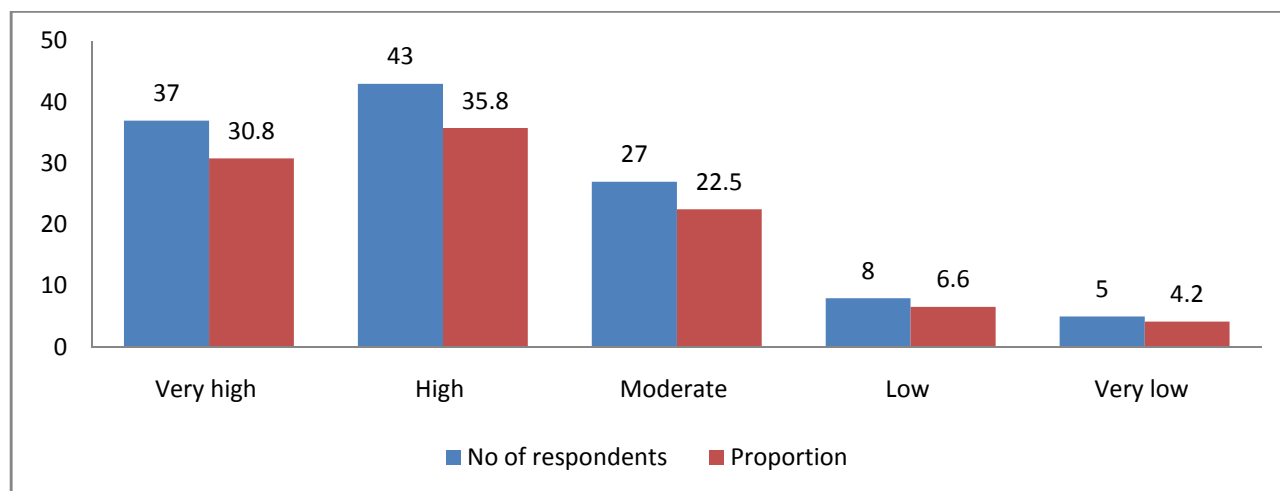


Figure 4.10: Rating on extent of environmental stimulation of school surroundings

Figure 4.10 shows that 37(30.8%) respondents indicated that the extent was very high while 43(35.8%) indicated that the extent was high. The low and very low categories captured a response rate of 8(6.6%) and 5(4.2%) respectively. Most of the interviewed administrators confirmed this trend and acknowledged engagement of services of support staff in the maintenance of school grounds. The premises observation yielded a similar result. The researcher observed that the private owned schools had very highly stimulating lawns, shrub and flowers. Afforestation sites were common in both council controlled schools and private schools. Although rural-day schools lagged behind in shaping school surroundings into environmental models, there was evidence that some significant effort was being made. The researcher also observed the establishment and maintenance of 'natural conservancies' in most schools.

DISCUSSION OF KEY FINDINGS

The research study was designed to evaluate effectiveness of the environmental education programme in secondary schools in Mutasa District, Zimbabwe.

Sex, age, qualifications and experience of respondents

With female secondary school teachers, 71(59.2%) dominating the didactic activities in secondary schools in Mutasa District, a high degree of sensitisation of educatees on the value of monitoring the environment, protecting and improving it is a likely reality. This uneven gender distribution is a common feature in Zimbabwean secondary schools. Doss and Morris (2000) and Valdivia and Gilles (2001) emphasize that in developing countries, women have shown more concern for environmental issues than their male counterparts. Their positive attitude and sense of responsibility stems from their chief role in management of family and household environmental resources. They enthuse to educate the youth to respect and care for the natural environment.

With 116(96.6%) of the educators below 45 years, the implementation of the Environmental Education programme could be easy. Research has proved that readiness to accept new

techniques and ideas is high in this age category. The introduction of Environmental Education in Zimbabwean secondary schools has been a recent development. The curriculum follows a multi-disciplinary approach. The situation requires self-propelled and innovative teachers who require minimum supervision. Without educators of such virtue, the infusion of environmental issues in the crowded secondary school curriculum becomes an uphill task.

The majority of respondents, 92(76.6 %) were married. Teachers who fell in the widowed and divorced categories were 4(3.3%) in each category. This could suggest prevalence of a considerably high measure of efficiency in the implementation of the programme. Marriage cultivates in the individual a high sense of purpose, emotional stability and social responsibility(Dhammananda, 2013).

These qualities shape in the teachers a clear vision and understanding on their pedagogic task. To them, implementation of Environmental Education becomes a moral obligation. With the will and love to accomplish, they are likely to encourage learners to recognise their worth and that of their environment. At the same time, they provide the fullest possible development of pupils' attitudes, values and skills required in positive interaction with the environment (Tuncer, Ertepinar, Tekkaya and Sungur, 2005). With 87(72.5%) of the respondents in possession of teacher training background, professional handling of the didactic sessions could be certain. Woolfolk (2011) points out that teacher education programmes expose graduands to detailed child study on the cognitive, affective, social, conative and physical development of the child. The pedagogic implication are analysed to establish sound classroom management, appropriate teaching skills and suitable learning principles. The college graduates are hence qualified to tailor any learning material to suit pupils' developmental level. They are able to effectively conduct the didactic activities to achieve set goals. Tuckman (2004) concurs and asserts that professional educators have the capacity to organise and sustain communication with the learners and enhance transfer of knowledge, skills, values and attitudes. Hence, infusion of Environmental Education into the crowded secondary school curriculum could be said to be achievable.

It also emerged that 91 (75.5%) of the respondents had been in the teaching field for 6 or more years. This could suggest easier effectuation of the multi-disciplinary approach that the Zimbabwean educational authorities have recommended in the implementation of the programme in question. Although experience can breed in an individual complacency, it enhances knowledge accumulation, skills perfection and confidence building. The study showed that the novice teachers of experience 1-5 years constituted 24.1percent. They could be said to benefit from the experience of their veteran counterparts if they emulated their good exemplary discharge of duty.

Organization and coordination of the environmental education in schools

One major finding of the study was that 102(85%) of the respondents indicated that the environmental education programme in schools operated under no specific coordinator and department. This could be an indication that implementation of the Environmental Education in schools could be facing some draw back. Functional departmentalization of subjects in schools is a logical management strategy to enhance efficient use of resources and effective accomplishment of set goals (Little, 2000). The Head of Department as coordinator is empowered to plan, organise, monitor and evaluate the subject programme (Poultney, 2000). In

the absence of a specific coordinator, material resources are abused, time is wasted and implementers frustrated (Harris, Busher and Wise, 2011; Poultney, 2007). However, the individual must be a man or woman of integrity and honour with a sound philosophy of life. During the face to face interviews with school administrators, the researcher was informed that professionals of this caliber were sometimes difficult to come by. There was high teacher turnover (Herbert and Ramsay, 2004; Ingersoll, 2001). Some reliable experienced teachers moved to work in industry and non-governmental organizations. Other teachers went to the Diaspora.

With 86(71.6%) of the interviewees indicating that subject departments held staff development meetings, fora at which environmental issues could be discussed were provided. However, only 43(35.8%) of the respondents rated the staff development sessions held as motivating for staff members to maintain the school environmental quality. This finding could point at perfunctory approach of administrators in performance of some tasks due to pressure and stress of work. Jewel (2000) puts forward that administrators have their attention time and effort focused on a multiplicity of administrative, informational and decisional roles within the organization. This makes them lowly prioritise and poorly plan some issues, which are otherwise important. Inclusion of environmental issues could be victim to conditions of this nature. To this, Adey (2000) and Joyce and Showers (2002) add that in schools, staff development should have precise objectives and take into cognizance the needs of the pupils, staff and the organization. Success in motivating staff members in this manner requires the services of a functional head of department (Weller, 2001).

Another finding was that in schools there existed no clearly defined and documented policy on implementation of the Environmental Education programme. This could be a pointer at lack of seriousness with which the subject programme is treated in some institutions. According to the Zimbabwe Government (2000) departmental policy document should clearly stipulate a department's aims, basic requirements and guidelines of operations. No effective implementation of a programme can be achieved without clearly defined vision, mission, core values and strategies (Dess and Lumpkin, 2003). Implementers require a clear source of reference during the course of discharge of duty. With 32(26.6%) and 69(57.5%) respondents in the 'strongly agree' and 'agree' categories respectively on the notion that the programme was not taken seriously in schools, a weakness of policy makers and programme planners is exposed. Their failure to make consistent follow ups in secondary schools to monitor progress being made could be accountable for this. Supervision is a crucial component of sound management in programme implementation (Sergiovanni and Starratt, 2002). Lack of clear ministry policy guideline also results in poor performance of duty by subordinates. In the face to face interviews with school administrators and their preventatives, all the interviewees confessed ignore of the existence of any Ministry of Education Circular or statutory instrument that gave clear stipulations on the implementation of Environment Education in secondary schools.

It also emerged that there existed no specific environmental education departments or coordinators in the secondary schools. Forty-two(35%) and 49(40.8%) 35 of the respondents indicated that they agreed and strongly agreed respectively in support of this view. In most Third World schools, preference is given to subject areas that are accompanied by public examinations and issue of certificates rather than those which offer development of intrinsic knowledge and understanding only. In other words, the grip of the Diploma disease is so strong that any innovations that do not lead to high status examination success and social mobility are rejected (Kellaghan and Greaney, 2004).

In face to face interviews, school administrators expressed the view that they were in a dilemma on whether or to seriously consider Environmental Education in their curriculum because appraisal of teacher performance was result based and the slogan of the Ministry of Primary and Secondary Education provincial office was “Manicaland for results”. Teachers were hence forced to give higher priority to activities that yielded high academic results for pupils.

It also emerged that the majority of the respondents 72 (60.83percent) respondents viewed the effect of the current multi-disciplinary set up of the Environmental Education programme in promoting environmental awareness amongst pupils as moderate. This could be a confirmation of the existence of some administrative arrangement and positive effort made in implementation of Environmental Education in schools. This finding could however suggest prevalence of some weaknesses of the established systems. This is consistent with the observation of Roffe (2010) who state that unless the curriculum is well designed, anticipated programme results may not be realised. The number of serious adopters of programmes of change increases only when awareness on the benefits of the change is noted. Some individuals or institutions are late adopters and others are laggards.

Teachers’ attitude, preparedness environmental education in schools

The study revealed that a wide range of subjects done in the schools. English Language registered the highest response rate with 120(100%) seconded by Integrated Science with 112 (93.3%). The lowest response rate of 10(8.3%) was captured in Wood Work. This could suggest application of a variety of subject for a sensitive educatees on sustainable utilization of resources, which is in line with the philosophy of Environmental Education. Any subject can be applied to educate the learners on issues related to the environment through “interpretation”. The concept of interpretation is central in the implementation of Environmental Education. The phenomenon is regarded as an educational activity which reveals meanings and relationships through the use of original objects, by firsthand experience, by illustrative media rather than simply to communicate factual information (Dan Kurland's www.criticalreading.com.) Through this approach, the educators use concepts of their subject areas of specialization to explain environmental issues that are prevalent. However, the formal education system in Zimbabwe is based on a long tradition of single subject teaching and learning. This could hinder the implementation of the cross-curricular Environmental Education programmes in schools.

With 81(67.5%) of the respondents and school heads confirming the existence of components on environmental issues within their subject syllabi, educators had an opportunity to engage and enlighten the learners directly on matters that concern them and nature. This could suggest deep sensitization of the educatees on the interdependent inseparable relationship between nature and humanity. Baez, Knamiller and Smyth (1997) content that through study of particular components related to Environmental Education, learners grasp basic concepts pertaining to uniqueness of individual environments. At the same time, they discover the impact of human lifestyles on nature in the short term and long term. In the process, learner acquisition of sensory capabilities and a sense of identity plus continuity with their natural surroundings is achieved.

Furthermore results of this survey indicated a positive teacher inclination towards inclusion of environmental issues in lesson preparation. Of the 120 respondents, 105 (87.5%) indicated a positive response. Woolfolk(2011) says at the helm of the pedagogic situation is the teacher.

When the educator is an individual of sound philosophy of life, in possession of expert knowledge and has the correct subject orientation, fruitful learning could be guaranteed. In didactic interaction, the teacher is expected to give sympathetic, authoritative and educative guidance to cater for the needs of the child in line with the subject philosophy. Although this was a cause for concern among proponents of Environmental Education, the divergence of perceptions has always been imminent among professionals. The situation could however mean retardation of progress in the implementation of Environmental Education in schools. Meyer and Allen (2007) points out that this scenario could be a result of existence some teachers who are disengaged. They are simply “out of gear” with respect to didactic tasks at their disposal due to demonization. Poor working conditions or unconducive organisational climate usually accounts for this. However, such as development portrays professional immaturity among some teachers in the schools, which draws back implementation of the programme under focus. Pedagogic interaction is a deliberate and purposeful attempt to build these “innocent souls” (learners) into autonomous and responsible individuals (Tuckman, 2004). Educators are called upon to develop the learners into worthwhile active and informed participants in production in society. That human practice earmarked to meet the needs of the present generation should not jeopardize the capacity of future generation to meet their own needs should not skip their notice.

The study revealed that there were three key factors that militated against consideration of Environmental education in subject lesson preparation. Of the 120 respondents, 58(48.3) fell in the ‘strongly agree’ and 49(40.8%) in the ‘agree’ category on the opinion that lesson objectives do not take into account environmental issues. Strict adherence to didactic objectives is characteristic of educators who lack conscientiousness and foresight. Tuckman (2004) indicates that objectives restrict learning to a somewhat mechanical process thus yielding rigid conforming procedures, standards and behavior. Teachers with professional foundation should realize this and ensure that the teaching learning activity does not school but educate.

It also emerged that 49(40.8%) and 36(30%) respondents fell in the ‘strongly agree’ and ‘agree’ categories respectively on the perception that examinations did not take into account environmental issues. This finding showed some misconception on the idea of education. Educators who subscribe to this school of thought are a definite negative influence in the implementation of Environmental Education. Meanwhile, embedded in the minds of some educationists is the relationship between education, public examinations and certificate, this deep seated attitude should change. This implies a draw back in the implementation of the programme in question. Woolfolk (2011) stresses that education is an activity directed at fellow human beings so that they live a meaningful life in society, in compliance with particular norms and values. Meanwhile examination are an acceptable means of assessment, it would be a falsification of reality to say examinations are the bench mark to all successful living. With or without examinations humans live to learn and learn to live.

The study also showed that another factor that contributed to apathy in application of the concepts of Environmental Education in lessons by teachers was the question of divorce of environmental issues from subject areas. Thirty-four (28.3%) of the interviewees ‘strongly agreed’ and 33(27.5%) ‘agreed’ respectively to the view. In interviews conducted, school administrators confirmed this trend and expressed doubt on teachers’ inclusion of environmental issues in lesson preparation and lesson delivery. They confessed that teachers appeared focused on work that raised student pass rate. They went on to say that that schools had developed the practice of rewarding teachers who achieved outstanding academic results especially in the

examination classes. Such a scenario implies sheer ignorance amongst some secondary school teachers on the philosophy of Environmental Education. In the school curriculum, no discipline is divorced from the environment (Tuckman, 2004). The subject content of whatever subject be it in the arts, sciences, commercials or technical category are anchored on the behavior of humanity in relation with the environment. What differs is the perspective from which phenomena are viewed. This leaves educators without any excuse for failure to apply Environmental Education ideas in the didactic activities.

With 73(60.8%) respondents indicating that secondary school teachers in Mutasa District were actively involved in environmentally biased outdoor activities, sensitization of pupils through the co- curriculum could be high. In the educative act, the learners regard the teacher as role model. They are ready to surrender to and accept help from him/ her. At the same time, they emulate the educator's behavior. Woolfolk (2011) show that through direct experience the educatees enjoy a more potent pedagogic orientation than the formal learning furthermore, the teacher's active participation in the outdoor curriculum implies coordination, control and improvement of pupils' behaviour, which is of necessity in the implementation of the Environmental Education programme.

Quality and quantity of material resources in environmental education in schools

It was noted that of the 120 interviewees, 79 (65.9%) revealed the existence of a textbook- pupils ratio of below 1: 1. There was no respondent in the 'Above 1: 20' category. In interviews with the researcher, school administrators confirmed that are hence unable to procure sufficient reading materials for the educates. The 1: 1 textbooks- pupils' ratio has been achieved particularly due to text-book donations from the joint effort of the Zimbabwean government and UNICEF to provide all secondary schools in Mutasa district and nation at large with text books in the five core subjects namely Mathematics, English Language, Science, History and Geography for forms 1- 4 students. This would provide the learners with a better opportunity to relate subject information with some environmental issues at will. This is however inconsistent with the views of Zvobgo (2004) who highlights that in Zimbabwean institutions today; there is a critical shortage of material resources as a result of escalating costs. Most school Heads in schools with A-level forms added that their schools experienced shortage of resources especially at A-level which greatly affected the performance of their students in ZIMSEC A-level examinations. They further asserted that some of the required books are imports and difficult to procure.

Concerning the quality of text organization, language and illustration, each aspect registered over 48(40%) positive response rate in terms of suitability in promoting Environmental Education in subject areas. This could suggest positive influence in the implementation of the programme. Woolfolk Hoy and Murphy (2001) highlight that associated with pupils' understanding, assimilation or sensitisation on any learning material is pupils' motivation. The nature of the content and its form play a decisive role in determining this phenomenon. The degree of difficulty as determined by the ordering and language applied influences the effectiveness and speed of material assimilation.

The descriptive findings of the study revealed that school administrators were found wanting in four particular respects. Seventy-three(60.6%) of the respondents registered positive impressions on the existence of pupils' interest in environmentally biased literature in schools. In this the

Environmental Education drive had an acceptable point of departure. Attitude has a direct or indirect influence on individuals' perceptions and action (Robbins, 2005). Positive attitude places the learner in a conscious state of readiness to receive from the educator, hence its influence on the implementation of Environmental Education in schools. Seventy-five(62.1%) of the respondents registered negative impressions on the view that the school libraries had plenty of environmentally biased magazines. This could present a hitch at the intended environmental consciousness thrust in schools. A library is meant to serve individuals by providing materials for wide range of purposes and interest. According to the Buchanan (2000) and Lindel (2000), such centers are instrumental in the transmission of ideas, knowledge and experiences from generation to generation. Educatees visit such centres for both educational purpose and leisure. Eighty-seven(72.4%) of the respondents registered negative impressions on the view that school authorizes regularly ordered reading materials on environmental issues. Sixty-four(53.3%) of the respondents registered negative impressions on supply of local newspapers from which pupils could read some articles on environmental issues. Inequitable distribution of school financial resources and biased budget development could be evident in this instance. The various departments of an organisation jockey for high budget allocation and the final decision rests with the administrators on which areas get the highest priority (Robbin and Coulter, 2000). In secondary schools in Mutasa District, limited financial support by school administrators in procurement of local environmental biased newspaper publications is evident. This could be a deterring influence in the successful implementation of the Environmental Education programme. School administrators echoed the sentiment that it was difficult to secure adequate resources due to the hyper inflationary economic environment in Zimbabwe. Donors who used to support them have in most cases withdrawn. It is not uncommon for donors to withdraw their support from community programmes they sponsored (Smith, 2011).

Teaching techniques in environmental education in secondary schools

It was established that teachers employed a variety of teaching media in subject lessons. The black/ Green board illustrations registered the highest response rate of 91(75.8%) and use of text pictures recorded 59(49.1%). Application of computers and videos was least with 3(2.5%). Employment of the different projected and non- projected aids in didactic activities implies some sensitization of students on environmental quality. The approach helps cater for the pupils different learning style (Coffield, Moseley, Hall and Ecclestone (2004) emphasizes that meanwhile some teaching materials are useful and conceptually sound, any medium can be utilized to impact the desired knowledge, develop intended skills and cultivate appropriate attitude in Environmental Education.

With 100 (83.3%) of the respondents registering positive impressions on usefulness of the teaching techniques in integrating environmental issues in lessons, professional maturity among the majority of educators and their ability to responsibly handle didactic sessions involving environmental issues could be a reality. Teachers of this caliber require continued staff development and close monitoring. Their attitude and execution of didactic activities could limit progress in implementation of the programme under focus.

It was also established that teachers applied a variety of teaching strategies in their subject areas. The lecture method and demonstrations captured the highest response rate 69 (57.5%) each. The lowest rate was 6(5%) obtained on use of resource persons. School administrators confirmed this trend during semi structured interviews. Use of lecturettes and panel discussions at A level was

emphasized on. The varied distribution could suggest increased motivation of pupils in the learning of concepts associated with Environmental Education. Motivation guarantees individual attentiveness and orientation which determine material assimilation during learning (Mullins, 2007; Robbins, 2005). Successful learning depends on the teachers' capacity to exploit the students will and curiosity to learn as well as their manipulative and physical awareness. Teachers' adoption of varied methodology ensures elimination of stress and monotony in the didactic process.

It emerged that confirms the motivational effect of the varied distribution character of the techniques and response rate indicated on the table immediately above. With 64(53.3%) response rate in the agree category and 36(30%) in the strongly agree category, methodical induction of the pupils on environmental issues is likely to be high in didactic activities. Development of the pupils' minds, abilities and skills means a positive influence in the implementation of the Environmental Education in schools.

However, the 37.5% response rate registered in fieldwork stirs worry among advocates of Environmental Education. This trend could mean limited development of awareness and comprehension of concepts through firsthand experience among educates. Outdoor learning arouses the educatees' feelings and stirs their interest. It gives the students realization of the interviewing of humanity and nature. During the activities, they handle, observe and feel natural phenomena which yield motivation.

Environmentally biased clubs in schools

With establishment of a wide range of environmentally oriented clubs, involvement of pupils in inner consuming experience on environmental issues which cultivated environmental awareness amongst pupils was guaranteed. Holloway (2002) asserts that through non-utilitarian physical activity, a deep feeling of satisfaction develops. Associated with this is easy and fast cultivation of the desired environmental oriented values and attitudes. It was established that 27(22.5%) of the respondents indicated that environmentally oriented club had a 'very high' effect while 36(30%) indicated that the effect was 'high' in sensitizing learners to respect and care for environmental quality. In semi-structured interviews with school administrators, it was revealed that pupils very actively participated in the environmentally biased clubs under the guidance of their club masters. The school heads went on to confess that pupils showed a high level of enthusiasm to know more about natural phenomena which raised their level of awareness of value of environmental quality. These findings could mean a high level of sensitization of learners on environmental issues. It could also suggest a shift of school authorities from their concentrated support of sporting clubs towards environmentally oriented club activities which promotes sensitization of learners on environmental quality. These findings correlate with the perspective of Woolfolk (2011) that play enables the individual to explore and manipulate the environment discern its qualities and differentiate the real from the imaginary, it is of significance in the intellectual, social and moral development of pupils.

Co- curricular activities on maintenance of surroundings in schools

The study revealed that schools carried out a variety of co- curricular activities on maintenance of school surroundings. The most common environmental activity revealed was litter picking and burning which captured response rate of 86(71.6%). Other outstanding activities were shrub and

flower planting, 57(47.5%) and afforestation 52(43.3%). The lowest response rate of 17(14.1%) was captured in maintenance of natural habitats and planting of herbal gardens. The variability of environmental activities and response rates suggest sensitisation of the learners on the inter-connectedness of natural phenomena and value human care for the system through actual participative act. Engagement of pupils in environmentally oriented activities empowered the learners with physical skills, knowledge, values and attitudes. Spiropoulou, Roussos, and Voutirakis (2005) point out that educatees need these qualities in order to constructively interact with their natural surroundings.

With 76(63.3%) of the respondents indicating that the extent of environmental stimulation of school surroundings with 7(5.8%) and 23(19.16%) being very high and high respectively, sensitization of pupils could be regarded confirmed. Most interviewed school administrators acknowledged engagement of services of support staff in the maintenance of school grounds in an effort to make school grounds as environmentally stimulating as possible. This could mean the development of a deep sense of appreciation of the beauty of nature within the educatees. Direct experience with phenomena can make individuals learn better as compared to the formal classroom didactic situation (Sergiovanni and Starratt, 2002). The premises observation yielded a similar result. The researcher observed that the private owned schools had very highly stimulating lawns, shrub and flowers. Availability of financial and material resources could be accountable for this. Afforestation sites were common in council controlled schools. Although recently established schools lagged behind in shaping the school surroundings into environmental models, there was evidence that some effort was being made.

CONCLUSIONS

The study revealed that the multi-disciplinary approach was applied in the implementation of the Environmental Education programme in secondary schools in Mutasa District. One positive factor shown was that school administrators welcomed the idea of Environmental Education and backed implementation of the programme. Staff development sessions on subject areas were held and the sessions provided a platform for discussion on environmental issues. Non – existence of functional Environmental Education departments and specific coordinators however compromised effectiveness of the programme.

It was also concluded that effectiveness of the programme was compromised by non-existence of a clearly defined documented policy to guide operations of the programme. No circular or statutory instrument from the Ministry of Education, Sport and Culture clearly stipulated the vision, mission and strategies of the programme has reached the schools.

The teachers' positive attitude, preparedness and involvement in the programme to a large extent promoted environmental awareness among students. Actual teaching of components of Environmental Education in the lesson content of subjects further boosted the Environmental Education thrust. The majority of the educators hence had an opportunity to directly teach and sensitise educatees on the interdependence between man and the environment. However, that examinations did not include environmental issues received and teachers in most subjects had the perception lesson objectives did not take into account Environmental Education in their subject areas and that environmental issues were divorced from their subject areas compromised effectiveness of the programme.

The didactic approaches and media used by teachers largely reinforced implementation of the programme. It was established that teachers used a variety of didactic approaches and media. These teaching-learning means had positive effect in integrating environmental issues in didactic activities. The implementation of the Environmental Education programme received further boost through active involvement of learners in environmentally biased club activities and preparation of school environment into environmentally stimulating state. The activities sensitized pupils on the value of environmental quality.

Although available pupils' textbooks were general and maintained a structure compatible with core subjects, they remained useful in cultivating values of environmental education among pupils. The donated ETF text books helped reduce the pupil-text book ratio and had some positive influence on sensitization of pupils on environmental issues. School libraries were not adequately furnished with environmentally biased books, magazines and newspapers which compromised effectuation of the programme.

RECOMMENDATIONS

Based on the conclusions made, the following recommendations were given. The Ministry of Primary and Secondary Education should cascade into schools clearly streamlined guidelines on the implementation of the Environmental Education programme and the Zimbabwean education policy makers should introduce Environmental Education as a compulsory component of the teacher education curriculum to equip college graduands with knowledge and skills necessary to handle the subject when deployed in schools.

The District Education Officials should organise workshops for School Heads to enlighten them on the vision, core values and possible strategies of the Environmental Education programme. They should also pay close attention on school implementation of Environmental Education programme on their supervisory visits of schools and organise district panel workshops for school subjects Heads of Departments and teachers on the value and implementation procedures in Environmental Education.

The Curriculum Development Unit of the Ministry of Primary and Secondary should design pupils' reading materials on Environmental Education to be distributed into secondary schools. School administrators should establish functional Environmental Education departments and appoint functional Heads of Department to organise and coordinate the Environmental Education programme. They should also source and equip school libraries with more books, magazines and other materials that are environmentally oriented for pupils to read and give environmentally oriented clubs more moral, material and financial support to boost their activities.

The physical appearance of the school surrounding should be maintained in a highly stimulating state and, where possible schools should establish small environmental parks. School administrators should solicit and secure support of non- governmental organizations that are environmentally biased for their schools' environmental programmes.

Teachers should more consistently participate and more closely monitor pupils' manual co-curricular activities so as to more effectively equip the pupils with environmentally biased attitudes, values, knowledge and skills.

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