International Journal of Global Science Research **ISSN: 2348-8344 (Online)**
Vol. 7, Issue. 2, October 2020, pp. 1308-1320 **DOI: 10.26540/ijgsr.v7.i2.2020.153**
***Available Online* at www.ijgsr.com**

Research Paper

Teaching of Environmental Education in Secondary Schools: Experience of Teachers and School Leaders in Ngoma and Tumba Sectors, Rwanda

Abel Dufitumukiza and Jacqueline Mukanziza
Director of Quality Assurance/ Protestant Institute of Arts and Social Sciences, Rwanda
Department of Applied Pedagogy / Protestant Institute of Arts and Social Sciences, Rwanda
P. O. Box 619 Butare – Rwanda
Corresponding author Email: dufitumukizaa26@students.uonbi.ac.ke
ORCiD: https://orcid.org/0000-0003-3510-2413

Received: 08/08/2020
Revised: 15/08/2020
Accepted: 24/08/2020

Abstract: The current deterioration of the environment as a result of human activities and behaviours attracts a need to educate people about the environmental protection. This study, therefore, examined the experiences of teachers and Head-teachers in secondary school about the teaching of Environmental Education (EE). The study followed a case study design. The target population was teachers, director of studies and head-teachers in day secondary schools located in Ngoma and Tumba sectors, Rwanda. Primary data from a purposive sample made of 12 teachers, 2 head-teachers and 2 directors of studies were collected using a semi-structured interview. Respondents shared the experience on integration, delivery and challenges facing EE. Thematic content analysis technique was used. The findings revealed an absence of taking EE as a necessity in the teaching and learning process. The time given to the teaching of EE is down-graded simply because it is a cross-cutting issue in other subjects. A teacher may or may not talk about it during lessons. Also, the study of EE suffers its small weight in national exams compared to other competing subjects. Much effort is concentrated on the courses assessed in the national exams. There is also a knowledge gap of how to teach the content of cross-cutting issue subjects inside the main course. The EE is in the curriculum, but its teachings face challenges mostly related to the mind-set of teachers to include it or not in their main subjects, lack of didactic materials and skill gap in its teaching process.
Keywords: teacher's experience, environmental education, curriculum, cross-cutting issue subject, Rwandan education system

INTRODUCTION:

Education is a social mechanism necessary for enabling people to learn how to live as a useful member of society. Through education, people can acquire relevant

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

knowledge, skills and attitude that are desirable and useful in the production function, preservation of cultural values and protection of the environment as well (Owolabi, 2005). Education is of a good quality it enables learners learning to know, learning to do, learning to live together and learning to be (Delors, 2013). The current deterioration of the environment due to human activities and behaviours, therefore, attracts an urgent need to develop environmentally literate citizens able to makes informed decisions concerning the environment (Hollweg *et. al.*, 2011). It also brings to wonder the dependability of the current teaching of environmental education to change the mind-set of present and future generations towards environmental protection. Thus, environmental education being a mechanism to bring about in the person admitted to it knowledge, skills and attitudes that are relevant for interrogating and interpreting environmental systems, issues and suggested solutions, has to be evaluated and promoted on regular basis. It is through its quality teaching and learning process the belief to have individuals be able to take personal and collective responsibility in favour of environment (NAAEE, 2010).

Despite pressing issues of global warming, climate change, air pollution, soil degradation and others (Taylor et al., 2009), some people still have false information about the environment (Franzen, 2017). In addition to that, the integration of environmental education into the curriculum continues to be a debate vis-à-vis traditional discipline. For instance, in some education systems, environmental education is treated as a cross-curricula embedded into the content of traditional disciplines (Tilbury, 1995) whilst in others, the progress was made by taking environmental education as a separate subject under the title of either environmental studies or environmental sciences. But, still with a high competition of established traditional disciplines.

At the teaching level, deficiencies in teachers with knowledge and interest remain a barrier to environmental education delivery at the school level (Ashmann and Franzen, 2015). The teachings of environmental education content rely on teachers' interest. Teachers who were not trained in a programme related to environmental education are likely not to include this subject in their courses. In contrast, teachers who are knowledgeable about environmental education are likely to tackle a different aspect of environmental issues in their courses. This situation for Ashmann (2010) is a consequence of integrating environmental education in the curriculum as a crosscutting issue not as an independent subject. Thus its integration in lessons depends on the interest of the teacher (Ashmann, 2010).

Behavioural and learning process theories conceptualize education as an instrument to promote responsible human behaviour (Hungerford *et. al.*, 1980). Thus education should not only be put on knowledge, attitudes and skills but also activity in the society. Environmental education should, therefore, be provided to link knowledge to behaviour and attitude to action. It is important to permit learners to believe that they have the power to solve environmental problems by letting them have a deep understanding of environmental problems and its ecological and human implications (Tilbury, 1995; Hungerford and Volk, 1980). Many emphases have then to be put on developing learners' opportunity to practise the acquired skills successfully in the community (Hungerford and Volk, 1980).

In contrast, practically environmental education's content is taught from associated courses and the important affective elements

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

tend to be neglected. For Tilbury, the teachers are always focusing on the subjects which are assessed in national examinations and they claim to have a little time to provide all topics prescribed in the formal curriculum. Thus, it becomes difficult to enable the realization of the essential purposes of environmental education (Tilbury, 1995). McKeown-Ice considers the setting up of environmental education as a crosscutting issues to be a problem even for the teachers who want to influence learners' behaviour towards environmental problems (McKeown-Ice, 2002).

In Rwanda, environmental education takes its root in Rwanda's vision 2020 as well as in international development goals. In this regard, learners at all levels of basic education are expected to learn and be sensitized about environmental issues and their role to address them (Rwanda Environmental Management Authority (REMA, 2010). To arrive at that, much effort has been mobilized to organize teaching by focusing on providing skills, values and perspectives that encourage and support participation in environmental protection. Thus, the progress has been made by taking environmental education as an integral part of the curriculum at basic education levels (REB competency-based curriculum handbooks). Teachers as the principal factor in the provision of education, are expected to teach environmental education content by starting from what is familiar to the learners' daily life and build on this to enable them to relate their learning on what is happening in their living environment (Taylor *et. al.*, 2009). In addition to the theoretical content, through the organization of practices, the students are to acquire competencies needed to allow them to have both understanding of environmental problems and acquire problem-solving skills.

However, environmental education in Rwanda education system is a new subject in the basic education curriculum. According to REMA, the content of environmental education competes with other disciplines which lead it to be downgraded (REMA, 2010). It is considered as a cross-cutting issue in all subjects. For this authority, environmentally-based content are given lower status compared to other subjects in the curriculum. Also, the gap in teachers of environmental education is traced from the programmes taught in different colleges and universities having teacher education programmes. So far, there is no college or university in Rwanda preparing teachers of environmental education or sciences (Ministry of Education, 2018).

Thus, the current study aims to understand teachers' experience about teaching and learning of environmental education in day secondary schools in Tumba and Ngoma sectors, Huye district. Specifically, the attempt focuses on the understanding of the integration of environmental education in the curriculum, how its content delivery addresses awareness knowledge, attitude skills and participation and the challenges faced in teaching and learning of environmental education.

MATERIAL AND METHODS:

This case study was carried out in four selected day secondary schools located in Ngoma and Tumba Sectors in Huye District. A qualitative approach was adopted to deepen the understanding of teaching and learning process of environmental education in those selected schools (Hancock, Windridge and Ockleford, 2007). Thus, a sample composed of 12 teachers, 2 head-teachers and 2 directors of studies was chosen purposely. Teacher participants were selected based on years of teaching

International Journal of Global Science Research
Vol. 7, Issue. 2, October 2020, pp. 1308-1320
Available Online at www.ijgsr.com

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

experience at both primary and secondary education. Head-teachers were chosen because they participated in different reforms and review meetings of the current curriculum. Directors of studies were chosen because they are responsible for all matters related to teaching and learning activities at school level. They are responsible for quality assurance.

Hancock, Windridge and Ockleford (2007) support the use of qualitative methods for understanding and interpreting lived experience and complex reality embedded in a given phenomenon. In this study, a semi-structured interview which is a qualitative method to elicit information in the form of narratives were used to gather the information from respondents. Each respondent was asked to share his/her experience about the teaching and learning of environmental education with an emphasis on integration, effectiveness of content delivery in addressing awareness knowledge, attitude skills and participation, and challenges faced in teaching and learning of environmental education.

The analysis of data was done through thematic content analysis by organizing large quantities of text into much few content categories and them probing similarities and differences (Savin-Baden, 2013). Findings are then presented in block texts and interpreted. For more confidentiality and anonymity, the names of respondents do not appear in this study.

RESULTS AND DISCUSSIONS

Results

A. Perceptions on Integration of Environmental Education in Curriculum

According to the interviewed head-teachers, there is no particular subject titled environmental education in the curriculum of basic education in Rwanda. However, topics concerning the environment are dispersed in different subjects. Head-teachers and teachers are considering environmental education topics as cross-cutting issues to be ideally discussed in every lesson and course. This observation was in agreement with the way the programme of primary education was designed whereby topics like environment and climate are planned in the content of Social Studies in primary five, in the form of a chapter.

According to directors of studies, the way this topic is provided in the curriculum is not at the level of affecting the general purposes of environmental education. They doubt whether those topics are taught for environmental education purposes or general education purposes. According to respondents, the content of environmental education is not visible in the curriculum as compared to the consequences of changes in the environment.

"The appearance of topics of environment and climate in the content of geography are taught not as environmental education. The purposes are different. The topics are for geography purposes, not environmental education. Of cause, none can ignore that learners get a notion of what is the environment and climate change. But this is not the focus if change is being pursued. The fact that it is looked as a cross-cutting issue opens doors for teachers not putting much attention on it. Except for the fans of the environment who may talk about the environment in religious or mathematics subjects, normally no much weight is given to it. The content of environmental education is not wide in the curriculum as it was in the past. There was a subject called "Science et environment"; this was a single subject contrarily to the current program" (Interview with Head-teacher, 2019)

From the interview, the wideness of the subject in the curriculum says a lot and the

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

extent to which teachers weigh it in the teaching process. While the purpose of dispensing the course of environmental education is to affect the awareness, knowledge, skills, participation and behaviour change about environmental issues, the lack of a single subject in the curriculum has negatively affected the perception of teachers and head-teachers regarding the outcomes. Being a cross-cutting issue, the result is limited to the acquisition of basic notion. Why studying environmental education as a complement to Geography subject? For some teacher interviewees, the little consideration of environmental education in curriculum attracts teachers not planning didactically the content related to environmental education. There might be even to pass-by its content.

"….yes, environmental education is not a single subject in the curriculum. But, this should not be a problem because related topics are dispersed in other subjects. Whoever wants to participate in environmental protection, the content planned in the curriculum can be enough to open his/her eyes… Of cause it is not like when it could be a single subject in the curriculum. The attention would be very high than it is today. What is provided in the curriculum is considered enough by the curriculum developers. The doubt could be on whether those topics are taught or well taught for change" (Interview with Directors of studies, 2019)

For some director of studies, the effect of having a single subject in environmental education surpasses the consideration as a cross-cutting issue. They are convinced that existing topics about the environment are enough to promote awareness, knowledge, skills and attitude and participation. However, they doubt the quality of teaching those topics. For them, to help the students acquire needed competencies requires the teacher to be able to activate them cognitively by providing tasks that are related to the students' daily life. Such tasks allow the students to make a connection between the existing knowledge and the new one, which leads to the acquisition of critical thinking and problem-solving skills. Unfortunately, the topics on the environment are found in the subjects being taught by teachers who were not trained in the programme related to environmental sciences.

Both advocators of having environmental education as a single subject and those advocating having it as it is in the curriculum coincide on the (i) attention put on a wide/single subject in the curriculum and (ii) importance of quality teaching to affect the subject or topic purposes.

"…The fact that it is a cross-cutting issue makes less interest on it. Simply, because the failure of it could not affect the results of learners in the national examination. Speaking with truth, the little attention in the curriculum has created the little attention to it in the preparation and teaching and learning process…" (Interview with teachers, 2019)

From the narrative above, it is not only wideness and quality teaching which preoccupying teachers. On top of that, it comes whether the subject is assessed in the national examination. The more the subject is part of national examination papers as a separate subject, the more it attracts the attention of teachers and head-teachers. From the discussions, it was found that those three elements do make teachers to ignore some topics despite being in the curriculum, simply because a topic is considered as part of a so-called "cross-cutting issues".

The study found that the weight attached to environmental education is about its wideness and the extent it is assessed in

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

different national examinations. The head-teachers acknowledge the subject titled geography and environment in the curriculum of junior secondary education through a competency-based curriculum. However, although the word environment is found in the title but many credits are put on geography content. In the same views as head of studies, teaching based on national examination does not allow teachers to provide competence necessary to deal with life challenging situations. Instead, the students are requested to reproduce what they have been given. In addition to this, some topics are neglected when they do not appear in national examination questionnaires while they are very important in everyday life.

B. Perceptions on the delivery of environmental education content

According to key informants, the delivery of topics related to environmental education is just a provision of basic notion which is not promising to address the problem of awareness, knowledge, attitude, skills and participation at a satisfactory and high level. For them, it could be possible to address all the above aspects if the learning and teaching conditions are improved and make it a separate subject from having it as a cross-cutting issue. The teaching of cross-cutting issue subjects reflectively is not understood by the teachers. The latter do not understand how to integrate environmental education in other subjects and which content to be discussed or reflected.

If the role of cross-cutting issues in the curriculum is to help learners understand and discover the inter-connectivity among different subjects, there is still a problem of teachers' understanding on how to integrate those cross-cutting issues in existing subjects. They confuse crosscutting issues' content with other subjects' contents. On the other side, the researchers do not have much evidence about the efficacy of making and teaching environment topics as crosscutting issues purposely to influence the learners' behaviour about environmental protection and related problem-solving skills.

The problem also exists in the way the content is delivered. The curriculum indicates different topics with hope that teachers will teach them in a way that permits learners to develop the required knowledge, skills and to participate in the protection and management of the environment, however, the content is sometimes not taught and/or when taught it is more theoretical for not highly shape the learner's knowledge and participation.

"During the supervision, we found some teachers preparing the content in their notebooks but not teaching the content. The reasons are threefold (i) there is a problem of understanding the subject itself because they were not trained in it. But they prepare to show that they had done something on it; (ii) the value attributed to the subject is not high. What is important for them is the subject to be assessed during the national examination; (iii) there are no appropriate teaching materials available for environmental education." (Interview with head-teachers, 2019)

From the narrative above, the delivery of environment-related topic is questionable in basic education: (i) schools do not have teachers who were trained in didactics for teaching environment related topics; (ii) the value attached to environmental education is small for it to be ignored and (iii) for those who make effort to provide something on the environment they prepare the content which is easier to them and escape what they consider difficult. This means that not all topics are taught. What is taught is what the teacher understands. This comes back to the

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

lack of trained teachers in environmental education.

According to head-teachers, teachers who properly teach topics related to the environment are the ones trained in agronomy, geography and biology. They have a notion on some topics concerning the environment. Gaps are remarkable when it comes to environmental management. Besides, the teachers are not familiar with peer learning to exchange the experiences. Contrarily to what said by Head-teachers, teachers observe a lot of potentials in didactic materials that could be explored in favour of environmental topics.

"…The small value we attach to environmental education in the curriculum makes us not even think how to use basic materials available to use in the teaching process. For example, we have a computer lab with a projector but none of us are is using them for demonstration or just for observations. Teachers could download from YouTube some audio-video lessons on the environment and use them for learners' observation. Forests and erosive areas are around schools, but, teachers do not go out with learners for just observations during the time they are teaching environment topics. It is sad to ask a child to show erosive area and not be able to do so, yet she/he studied it theoretically" (Interview with teachers, 2019)

From the above narrative, schools have the basic teaching materials they need to teach the topics related to environmental education. However, the lacks of interest stops the initiative and creativity to explore available teaching and learning resources. If it is not the lack of ICT skills and motivation among teacher, many learning materials that could help teachers on the internet are not explored. The principle of learning by doing is missing in the teaching and learning of environmental topics. Teachers have become the captive of class presentation while learners are made note-takers and then swallow them without understanding. Also, improvisation could be helpful for the environmental education, however, teachers do not exercise it. Teachers claim to have no time to fabricate materials on their own. Teachers lack the initiative and creativity in teaching the content of environmental education.

“I have not seen teachers trying to go outside the classroom to show learners erosion and yet the school is not far from it. I don’t know, things have changed. During our time, teachers introduced to us the notion of dimension, meter, litre, etc. by bringing in class a meter or a wire equal to a meter. We measured the decametre by going outside the classroom and we used the meter. None could forget that exercise and everyone can have a mental representation of a meter. These days teachers make a class presentation, I do not know what has happened" (Interview with the director of studies).

The findings revealed that the problem is not the lack of sophisticated teaching and learning materials, rather than a commitment to teach innovatively and creatively and help learners relate theory to practice. According to some teachers, it does not cost a lot to make a field visit in the nearest forest while studying topics related to forests, but different obstacles made them not doing it.

“We know that students learn better when they are exposed to tangible things. But we don’t expose them to that due to time constraint. We are rushing to end up the programme, especially what will be asked in the national examination. Ask the Head-teacher! A teacher who does not finish the program is blamed, hence not organizing practices.” (Teachers’ argumentation, 2019)

According to teachers, the problem is (i) the willingness and motivation of teachers to

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

help learners understand; (ii) time constraints whereby teachers are rushing to finish the programme, thus going out is considered time-consuming and may not help teachers finish the programme (iii) the value attached to the environment subject itself. Beside it was discovered that the type of exams during the national examination dictates the way teachers teach different subjects. The subject which requires experiments in national exam is taught with some 'experiments' and teachers make sure that the whole programme as indicated in the curriculum is taught (presented in classroom and notes were provided). The teaching process is much motivated by finishing the programme to avoid the blame and to help learners grasp the whole programme for national examination purpose.

From above, it can be asked where the place for teaching for learning, understanding, participating is? This comes back to the perception that the way environment-related topic taught and learnt does not address the issue of awareness, attitude, skills and participation satisfactorily. Considering the current teaching approach in basic education, the value of using all senses (observation and practice) for quality teaching and learning is not explicitly considered not only for the teaching of environmental topics. Teachers could use available teaching materials, but there is no motivation which might be associated with the little space attached to environment topics in the curriculum and national examination.

The study discovered that subject under the consideration of "cross-cutting issue" are not given much attention in comparison to other subjects. Its value is downsized in teaching strategies and effort made by teachers to talk about it. Below is an example of how difficult is for mathematics' teacher to talk about the environment during mathematic lesson according to interviewed Head-teachers and head of studies:

"…as we said, every teacher is motivated to finish his/her programme. It is not easy to find time for other topics than the topics related to the programme they are entrusted to teach. Mathematics is mathematics not environment or health issues. How could a teacher of mathematics talk about environment in mathematics' lesson instead of focusing on mathematics? Those two subjects have different objectives…it does not work and if it is done the outcomes are not met." (Discussion with head-teacher and Head of studies)

From above, the priority is math content, not the environment. This implies that the priority is other subjects than crosscutting issues. It will take time and much effort to change the mind-set towards the value attached to the subject or topics considered to be crosscutting issues. Probably by addressing the issues associated with subject wideness in curriculum and national examination, teaching strategies with emphasis to observations and practices and availability of trained teachers in environmental education, to mention a few, the perception of teachers and head-teachers on the teaching of topics of environment will change. The thinking also goes to the assumption that where teachers could talk about cross-cutting issues in a different subject it depends on the extent to which the teachers are relating themselves with the environment and/ or perceived incentives associated to environmental education.

C. Teaching and learning challenges faced in teaching and learning of environmental education

From the findings, it was understood that the desired teaching methods to the teaching of environment topics are observations and

International Journal of Global Science Research **ISSN: 2348-8344 (Online)**
Vol. 7, Issue. 2, October 2020, pp. 1308-1320 **DOI: 10.26540/ijgsr.v7.i2.2020.153**
***Available Online* at www.ijgsr.com**

field learning visits according to teachers and head-teachers. However, the organization of field learning visits implies some costs which seem to be a burden to the school and parents. Some parents are somehow sceptic to any additional fees about the education of their children. The schools do not have a budget allocated to those specific methods of teaching and learning.

"There was a time when the school general assembly decided to add 1500 francs to normal contribution to improve the quality of the meal provided to learners under the programme of school feeding. This amount was not to be paid at once. As we started inducting parents in paying that contribution, some of them went to one Radio station saying that I (head-teacher) am charging additional money for my interests. I would had been in trouble if the sector executive secretary were not aware of the school general assembly's resolution. He was the one who convinced the journalists that it was a meeting's decision. Now, come back to practice or field learning visits, the school does not have a budget for that. Now, if the parents were against addition little money for their children to eat well at school, how will they accept to contribute a single coin for their children to visit the arboretum forest, museum, I don't know where else? This is our (head-teachers) everyday experience" (Interview with head-teacher, 2019).

From the above information, the teaching of environment topics is challenged by:

(i) Budget constraints for field learning visits and appropriate didactic materials. It was found that the budget allocated to schools is committed to specific activities and the room for the school to purchase didactic materials is very small. Schools rely on the didactic materials provided by Rwanda education board or donor agencies. Thus the field learning visits that attract additional costs could not found a place in the teaching and learning process. However, the study found that even the available resources are not used effectively due to the mind-set.

(ii) Teachers' mind-set and motivation. In addition to the budget constraints, the teaching of environment topics is challenged by the teachers' perception and motivation. Teachers attach little value on environment topics in their respective thought subjects. For them, they are not the priority. The philosophy of using topics under cross-cutting issues as a way to connect theory to practice and knowledge to real everyday life is not well established among teachers. Crosscutting issues are considered to be taught as a separate subject rather than infusing it in the teachings of other subjects. On that, the question to ask might be whether teachers were trained in composing reflection questions that attract to think about crosscutting issues.

"….tell those teachers at *Karub*--- to do all these things, they are paid a bonus for that…" (Head-teacher explaining some behaviours of teachers when asked more input)

Above information revealed the de-motivation among teachers and how they try to equalize the effort-input to teaching and work to be accomplished. From an interview with Head-teachers, existing facilities and resources are not explored because of de-motivation among teachers. Teachers compare themselves with peers so that to determine the level of effort to put in their work. Teachers know what is necessary for making the teaching quality and success. For them, until extra-effort is considered in terms of incentives or bonus or salary increase the change in teaching will be observed. Although teachers mainly point out the problem of a small salary as the root

International Journal of Global Science Research **ISSN: 2348-8344 (Online)**
Vol. 7, Issue. 2, October 2020, pp. 1308-1320 **DOI: 10.26540/ijgsr.v7.i2.2020.153**
***Available Online* at www.ijgsr.com**

cause of de-motivation, one addressed it will not be the only solution. The need for addressing the shortage of didactic materials and teacher professionalism will impose.

(iii) Parents' mind-set toward the financing of education. It was found that since the declaration of tuition-free education in basic education, parents have become reluctant to financially contribute to the children education. For them, the government pays for everything and the role of parents is to send the children at school with notebooks etc. not additional fees. This understanding has handicapped the effective teaching and learning process of some practical topics, whereby a small contribution was needed from parents.

However, the question raised after testimony from one head-teacher indicated the contribution of parents for senior five students to visit a water treatment station and the museum. Probably the parents have not refused to contribute to field learning visits either they are not explained well the importance of those fields learning visits to the acquisition of knowledge, or they understand but the schools do not have a good organization and effective communication. The refusal may be caused by different reasons which need to be identified.

Perceptions about content wideness and integration to national exams

As it was discussed earlier, topics considered as crosscutting issues suffer the small value attached to them in terms of wideness in other subjects. Teachers concentrate more on the other subject content. They fail to use the content of cross-cutting issue subjects to connect one course-subject to another. According to Head-teachers and teachers, this attitude is a result of the need to finish the programme to be assessed during the national exams. In other words, environmental education topics would have much attention if its content is part of the national examination explicitly.

For some Head-teachers, the teaching and learning based on examination does not permit lifelong learning and participation. There is a lack of ownership and appropriation of knowledge for transferability purposes.

“As the exam is done as the content is gone. Look, why do we have illiterate people who attended primary education? Why those attended schools are suffer hygiene problem yet basic health practices are in the curriculum? Learning for exams" illustrated Head-teacher.

On the other side, Head-teacher acknowledged the role of exams not only to check the achievements of learning outcomes but also the pressure brought to learners to learn. Thus the question might not be the examination but the quality of assessment to measure what is meant to measure.

By definition, education had to address three main dimensions including knowledge, skills and attitudes. Therefore the examination should be organized and given to learners to assess and measure the extent to which expected change in knowledge, skills and attitude has achieved. According to Head-teachers, schools lack teachers who are trained in measurement and evaluation, and there no standardized tests available in each subject for teachers about test knowledge, attitude and skills. Every teacher prepares as he/she understand things and there is no organ to check the quality of tests and exams. It is not known whether the instrument used to examine is appropriate or not.

DISCUSSION:

The findings of this study agree with others’ findings in many ways. As Delors (2013) emphases on a quality education that enables

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

learning to know, to do, to live together and to be by stimulating curiosity, this study found that the way crosscutting issues content are taught addresses awareness level partially. The current lack of practical exercise and field visits do not ensure the leaners to be able to transfer the content into practice. There is a little confidence that the teaching and learning of EE fit the pillar of a quality education as expressed by Delors (2013). The existing knowledge gap in teaching crosscutting issue subjects and a shortage of well-trained teachers to teach environmental education does not warrant efficacy in reaching the EE goals, despite the integration of EE content in the curriculum. It is taught and learnt superficially or sometimes not taught at all.

Findings also corroborate with Tilbury (1995) that EE is embedded in other subjects' content. Thus it is submitted to a high competition with a risk of being undermined and Ashamann (2010) the little value in national assessment (not a standalone subject) has led to downgrading EE content.

The finding that the quality of the delivery process is negatively affected by the behaviour of teachers toward EE content and importance attached to it validates McKeon (2002) and Tulbury (1995) that test-oriented teaching and learning is not helpful for teachers to teach crosscutting issue subjects. They rather focus on the subject to be assessed in well-known tests and exams. The worse thing is that even those who are willing to engage learners in EE content and practice they found themselves trapped in the same tendency.

The study findings are in agreement with REMA (2010) on the effort made to integrate EE in the curriculum. However, the study question the quality of EE content delivery as there is lack of trained teachers in teaching environmental sciences at basic education level, low level of improvisation concerning EE teaching and learning at the school level, skill gap in linking the content of cross-cutting issue subject with the main subject without deviating from the main subject's objectives to mention but a few.

In view of the above findings and discussions, there is still a need to reflect on the following questions: (i) How wise is it to turn EE into standalone subject to achieve its goals? (ii) How if arethe efforts channelled to the methods of teaching EE and didactic materials instead of a standalone subject? In the same line, the findings by Nayaz, Vaida and Bhat (2019) that students may have an understanding of water conservation for example but display a different and abusive behaviour regard water use (p.902) bring to continuously examineschool practices, whether in-classroom or outside, towards raising students' conscious and positive attitudes on environmental protection and conservation.

CONCLUSION:

The study at hand aimed at exploring the experience of teachers and school leaders about the integration, delivery and challenges of EE in the provision of basic education. The findings revealed that teachers and head-teachers where the study was conducted felt integration of EE in the curriculum. However, they felt an absence of a curriculum that gives priority of EE with a considerable number of hours and teachers EE subject. Consequently, teachers do not give due value the teaching of EE simply because it is considered as a cross-cutting issue. Some teachers have gaps in link the content of cross-cutting subject with the main subject while others do not have basic knowledge in environmental science. They majored in other fields of study and during their study journey were not introduced to the course of environmental

ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.153

science. Besides, the teaching of EE suffers its meagre place in national examination compared with other competing subjects. The test-oriented education system has made schools and teachers to focus on the subject assessed in the national examination. Thus, teaching of EE does not fit in the category of those subjects, hence the reluctance to teach its content as appropriate. Also, the teaching and learning of EE content faced challenges including budget constraints for field learning visits, didactic materials, and teachers' mind-set and motivation. The study findings, therefore, stimulate questions on the quality of EE content delivery as there is lack of trained teachers in teaching environmental sciences at basic education level, low level of improvisation concerning EE teaching and learning material at the school level. The findings suggest a need for special teacher trainings about the teaching of cross-cutting issue subject and EE in particular. Researchers and research institutions should explore (i) whether turning EE into a standalone subject can promote better understanding and practices of environmental protection among students as compared to channelling effort to the methods of teaching EE and didactic materials.

REFERENCES:

Owolabi J. (2005) Policymaking and Educational policy analysis, 1st Ed, Kampala: Makerere University Printery.

Delors J. (2013) The treasure within: Learning to know, learning to do, learning to live together and learning to be. What is the value of that treasure 15 years after its publication? International Review of Education, 59(3), 319–330. DOI: 10.1007/s11159-013-9350-8

Hollweg K. S., Taylor J., Bybee R. W., Marcinkowski T. J., McBeth W. C., and Zodio P. (2011) Developing a Framework for Assessing Environmental Literacy: Executive Summary. National Science Foundation Grant No. 1033934. Retrieved from https://cdn.naaee.org/sites/default/files/envliteracyexesummary.pdf

NAAEE. (2010) Excellence in Environmental Education: Guidelines for Learning (K-12). Washington, DC: North American Association for Environmental Education.

Taylor N. (2009) Environmental education in context: International perspective on Development of Environmental Education. The Netherlands. Sense Publishers.

Franzen L. R. (2017) Environmental education in teacher education programs: Incorporation and use of professional guidelines. Journal of Sustainable Education, Vol. 16. Retrieved from http://susted.com/RATS_2.3/UploadsFinalPDFs/459_2018-01-08%2017.17.39_Franzen%20JSE%20Fall%202017%20General%20PDF.pdf

Tilbury D. (1995) Environmental education for sustainability: Defining the new focus of environmental education in the 1990s. Environmental education research, 1: 2, 195- 212

Ashmann S. and Franzen R. L. (2015) In What Ways are Teacher Candidates being prepared to Teach about the Environment? : A Case Study from Wisconsin. Environmental Education Research, DOI. 10.1080/13504622.2015.1101750

Ashmann S. (2010) In What Ways are Pre-Service Teachers being prepared to Teach K-12 Students about the Environment? An Investigation of Wisconsin's Teacher Education Programs. Produced under a 2008-2009 grant from the Wisconsin Environmental Education Board

Hungerford H. (1980) Goals for curriculum development in Environmental Education.

The journal of environmental education, 11, 3, 42- 47

Hungerford H. R. and Volk T. L. (1980) Environmental education: Changing learners' behaviour through environmental education into elementary schools. Carbondale. Illinois University.

McKeown-Ice R. (2002) Environmental Education in the United States: A Survey of Pre-Service Teacher Education Programs. The Journal of Environmental Education 32(1), 4-11.

REMA (2010) Guidelines for infusing Education for Sustainable Development into Schools in Rwanda. Kigali. REMA.

Ministry of Education. (2018) Education Statistics. Kigali: Ministry of Education, Republic of Rwanda.

Hancock B., Ockleford E. and Windridge K. (2007) An Introduction to Qualitative Research. The NIHR RDS EM / YH available on https://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/5_Introduction-to-qualitative-research-2009.pdf

Savin-Baden M. and Major C. H. (2013) Qualitative research: The essential guide to theory and practice. London and New York. Routledge

Niyaz A., Vaida N. and Bhat A. B. (2019) A study on the awareness of water conservation among students and their perception of water related risk in Kashmir. International Journal of Global Science Research, *6*(1), 896-908. DOI:10.26540/ijgsr.v6.i1.2019.117