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Undergraduate Students' Learning for Sustainability through Crosscutting Courses in Higher Learning Institutions

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Abstract

This study employed a case study design underpinned by an interpretivism paradigm to assess higher education students' acquisition of education for sustainability (EfS) competencies through learning crosscutting courses at one University in Tanzania. The study involved eight (8) crosscutting course tutors and 72 students who were purposively selected from six different faculties. Forty-eight (48) students were first and second years while 24 students were third years. Data was collected by documentary review, interview, close ended questionnaire, and focus group discussions. Lambrechts et al. (2009), Scott and Gough (2003), Roorda(2010), and the UNECE (2012) frameworks for analyzing the higher EfS competencies guided both the thematic and content analysis process. The findings indicated that, the curriculum documents did not explicitly address EfS competencies. The lectures' applied teaching approaches which were more traditional which lead to undergraduate students' demonstration of weak higher EfS competencies. The findings also indicated that, the reasons for inclusion of the crosscutting courses in programmes were not explicitly related to enhancing EfS competencies. The study recommends a major review of all programmes so as to incorporate EfS competencies. An action research approach is recommended so that the teaching of EfS is contextualized in all higher learning institutions in Tanzania.

Key words: Education for sustainability, crosscutting courses, Higher EfS competencies

The United Nations Economic Commission for Europe (UNECE) report of the year 2012 show that, both developed and developing countries are facing numerous problems that are leading to unsustainable development (UNECE, 2012). The major source of problems as reported by the Association for the Advancement of Sustainability in Higher Education (AASHE) to be human activities on the earth which

put the life of future generations in danger (AASHE, 2010). The problems include; the degradation of ecosystems and peoples' exploitation of natural resources (UNECE, 2012). It has been reported by the National Environment Management Council (NEMC) in Tanzania that, the environment is damaged equally by both less educated citizens and graduates (NEMC, 2015). The Ministry of Education and Vocational Training (MoEVT) has also reported that, environmental damage is among the indicators that, most curriculum implementers in Tanzania are not fully addressing current need for education for sustainability (EfS) (MoEVT, 2014). Education for sustainability equips people with skills and knowledge to maintain significant values, peoples' capabilities and attitudes that guide them to behave in a manner that maintain their life and that of others through life (Scott & Gough, 2003; Huber & Mompoint-Gaillard, 2011; Gulati & Pant, 2016). The focus of EfS is on the use of education as a tool to achieve sustainable development as distinguished from theoretical exposure to sustainable development (Tilbury, 2004; Koda, 2007). EfS emphasizes on individual learner's involvement in the sustainability issues rather than imparting learners with pre-determined ideas (Vare & Scott, 2007). Learning is by means of both formal and informal processes (Parker, 2008). Through EfS, environmental, social, and economic issues are balanced (Fig. 1) in the search of development for life today and the future (Parker, 2008; UNESCO, 2015).

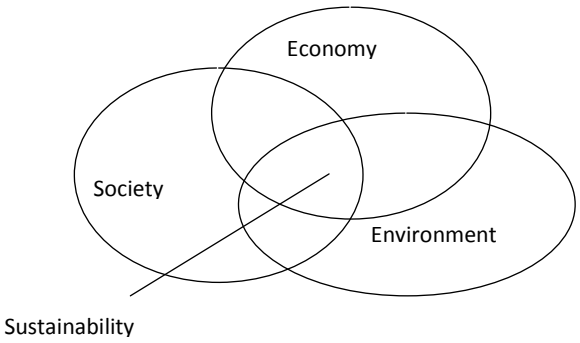

Fig. 1: A balancing approach to sustainability as proposed by Parker (2008)

Socio-political issues, equity, gender equality, peace, democracy, culture and health are regarded as social-cultural issues while natural resources, climate change, rural development and sustainable urbanization are environmental issues. Poverty, market economy, corporate responsibility and accountability are included in the economic perspective while environment education (EE) focus is on conservation of the natural environment and its relationship with human kinds (UN, 2009). The purpose is to engage the whole community in order to bring sustainable changes in a broader scale.

EfS is a powerful tool for transformation, shaping and having responsible citizens (Sterling, 2001) who are able to see far without undermining the physical and

social systems that support life (Meadows, 1992). EfS helps to establish a link between long terms goals and immediate action to save the world and helps learners to challenge their actions that lead to unsustainability (UN, 1987). EfS enhances an individual's participation by getting involved in the analysis of behaviors and action in order to control their decisions. EfS strengthens an individual's ownership and commitment to sustainability actions. System thinking is valued and more holistic approaches are recognized than reductionist approaches during teaching and learning about the world components and its complexity of nature.

The Role of Higher Education Institutions in Achieving Sustainability

Higher education (HE) institutions play a key role in preparing future employees and leaders who use their acquired competencies to respond to sustainability challenges (Martin & Jucker, 2005; Sonetti et al., 2016)). The UNESCO (2014) end of decade report on sustainability suggests a need for higher education institution to transform their curricula and pedagogy in order to deepen students' experiences in EfS. Universities are expected to make significant contributions through research, teaching, and community engagement (Yarime &Tanaka, 2012). The best practices in higher education institutions that are likely to enhance sustainability include; orienting students to practice what they learn and the provision of interdisciplinary education that covers EfS, modeling sustainability practices in their context, teaching by providing models of sustainability communities, and provision of sustainability foundation education to create awareness (Stewart, 2010).

Implementation and Challenges to Addressing EfS Issues in Tanzania

The government of Tanzania is addressing sustainability issues both in the social, economic and environmental sectors by supporting and implementing a number of international and multilateral environmental agreements (MEAs) (URT, 2012). The government of Tanzania has established a sector in each government Ministry to oversee environmental issues (URT, 2012). In the education sector, Tanzania has employed the use of crosscutting courses both at primary and secondary school levels in line with the UNESCO (2014) education goals, which demands that, sustainability education be integrated in other development goals. Achievement of efforts to ensure sustainable development has been limited by the lack of stakeholders' knowledge of sustainable practices (URT, 2012). Human activities, stakeholders' higher level of poverty, climate change, use of poor technology to earn a living, and lack of education are accelerating environmental destruction (MoEVT, 2008).

EfS through Crosscutting Courses in Higher Learning Institutions in Tanzania

Crosscutting courses at any higher learning institution in Tanzania are defined as non-core courses but are compulsory to all students enrolled in different academic programmes. Examples of crosscutting courses at the university level are; Development studies and Communication skills. At primary and secondary school levels, the government has identified three cross cutting issues; HIV and AIDs, environmental education, and gender equality which are integrated in the curriculum (MoEVT, 2008).

Researchers are indicating that, environment conservation in secondary and primary school curriculum is more covered than other sustainability issues (Stralin & Wiman, 2009). The challenges to EfS delivery and students' mastery of expected EfS competencies as identified by crosscutting issues in Tanzania are; lack of environment support, inadequate students' knowledge base in EfS, and non-holistic approaches. The other challenges are; lack of linkages among crosscutting issues, inadequate research and documentation on education for sustainability (MoEVT, 2014). Undergraduate students at higher learning institutions in Tanzania have earlier specialized in particular subjects at junior ordinary secondary school levels. Fines (1993) has identified this nature of curriculum to be neoclassical or vocational based. Learning of indigenous and social values have been suppressed by formal learning. Formal learning that is regarded as key to enable learners compete for securing jobs in the job market have dominated students' learning styles. Students are more knowledge receivers from books and their tutors. The tutors are regarded as having higher authority than being knowledge processors and constructors of their own understanding of what they learn (Tilya, 2006). Therefore, the education system does not allow students to specialize based on interests, rather it is based upon traditional examination-oriented scores. Thus, the system deters students' critical abilities which weakens their knowledge for sustainability.

Statement of the Problem

There is a global unsustainability crisis which can be addressed by EfS (Scott, 2002). Through EfS, people are oriented to a clear path to sustainability (UNESCO, 2006; Zenelaj, 2013). Higher EfS competences contribute positively towards addressing sustainable development challenges (Dunkley, 2013). EfS has an immediate interface with employers and future leaders. Graduates' competence in EfS is revealed by being able to integrate knowledge, skills, values, and attitudes (Rychen & Salganik, 2003; Wiek et al, 2011). The Tanzanian governments' efforts to integrate EfS at secondary and primary school levels has been through an integrative approach to designing of education curriculum (Kimaryo, 2011; Mwendwa 2017). Although, the number of graduates from different education levels is increasing, graduates are not changing to behavior that leads to sustainability. At the same time, little is known on how higher education in Tanzania contributes to students' knowledge of EfS (McKeown, 2009). This study assessed higher education students' EfS competencies after they had learned crosscutting courses at one of the universities in Tanzania.

Purpose of the Study

The purpose of the study was to assess what higher education students learn for sustainability (EfS) competencies through learning the crosscutting courses at one University in Tanzania.

Research Questions

In line with the purpose, these are the research questions;

1. What kind of EfS knowledge and skills are included in the crosscutting course curricula?
2. Which pedagogical approaches are applied by crosscutting course tutors that are likely to enhance EfS delivery?
3. What are crosscutting course tutors' knowledge of the reasons for inclusion of crosscutting courses that are in line with enhancing EfS competencies?

Related Literature Review

Theories and Approaches to Education for Sustainability

EfS draws teaching and learning approaches from multiple methodologies that encourage human construction of their knowledge. For example, the social critical approach (Fiens, 1993), Instrumental theory (Parker, 2008), constructivist learning theory (Von Glasersfeld, 1995) and the learner-centred instructional framework (Martin-Kniep, 2005). This interdisciplinary approach informs EfS practitioners to interpret knowledge and theories from different fields (Beinhocker, 2006). Examples of such disciplines that inform EfS are natural science, engineering, education, social sciences and humanities (Kates, 2011). This ecological approach allows for inclusion of evolving ideas and values that people in a community hold from different disciplines (Duenkel & Pratt, 2013). The focus on constructivism approaches allow learners to construct knowledge and acquire the EfS competencies for self-action and active process (Scott, 2002). Learners engage in learning, learn through a pragmatic process rather than learning from pre-specified contents.

The social critical approach to EfS emphasizes enabling an individual to be a critical thinker by critically questioning the social environment that leads to unsustainable condition (Scott & Gough, 2003; Wals & Jickling, 2002). The social critical approaches direct an individual to recognize the link between human life, economic development and human well-being (Osborn et al, 2015). The social critical approaches require integrating both informal and formal learning in societies to explain issues and is a basis for decision making and guiding changes in societies (Fiens (1993). Kohlberg (2004) has identified that, social critical learning approaches value and respect experiential learning of an individual to aid their and society's transformation. Experiential learning incorporates the individual's direct experience, critical reflection, and negotiation as a foundation for their learning process (Kohlberg, 2004). Social learning approaches consider the importance for learners' readiness for change in their social, economic, and environmental conditions. A learner is regarded as a critical and constructor of knowledge who sees self-actualization in his/her social context. A learner pursues truth in not only transforming and being transformed by society but also as an individual herself. This kind of learning experience encourages learners to initiate changes within their societies by using knowledge on how societies operate (Fien, 1993).

The instrumental approaches to EfS utilize education as an instrument to achieve policy outcomes (Parker, 2008). Policy formulation and decisions for implementing policies are decided in the light of information about the ecological impact of a behavior. The approaches require educators to deliver EfS for behavioral change in the light of

knowledge of ecological impact. Sandell et al. (2005) have criticized the approach by stating that it leaves more power to the policy makers decision rather than the affected participants. The approach is also criticized due to being highly individualized with no control for informal and social learning which influence individual learning.

The Higher EfS Competencies

Higher EfS competencies are a combination of knowledge, ability and behavior of an individual to cope successfully and responsibly with changing situations (Weinert, 2001). A student demonstrates EfS competencies through being able to integrate knowledge, skills, values, and attitudes from EfS (Rychen & Salganik, 2003). Roorda (2010) identified six higher EfS competencies; being responsible, use of systems thinking, future thinking, emotional intelligence, action skills, and personal involvement. For higher education students to achieve EfS competencies, the UNECE (2012) framework identified three majour competencies that a higher institution educator should possess. An educator must be able to use a holistic approach to help learners seek and integrate their practices when dealing with complex sustainable issues. An educator should be able to envision change by helping learners to explore human behaviours of the past, engaging learners, to exploring alternatives for a better future. The third is society transformation which is demonstrated through being able to help learners realize what they can change. The UNECE (2012) identified contents that higher education students are expected to learn that are not limited to; Peace, ethics and philosophy, cultural diversity, biological and landscape. Other contents are; environment protection, ecological principles, natural resource management, climate change, personality and family health. In addition; economic health, corporate social responsibility, poverty alleviation, human rights, rural/urban development, economic studies, and production and/ consumption pattern studies are recommended. Lambrechts et al (2009) two-dimensional EfS framework regards EfS as both reflective and transformative because it regards management of both the individual's life and others in a contemporary life focusing on now and in the future (Lambrechts & Hindson, 2016). For learning and change, individual's needs and problems are identified and analyzed in the context of the practitioners which is then followed by building an individual's capacity to think critically about what they learn.

Empirical Literature Review

Ferrer-Balas et al (2008) conducted a case study with seven universities worldwide which practiced an interdisciplinary strategic approach to sustainability. The purpose was to identify the dimensions to change towards sustainability. The findings showed that, in all the seven universities transformative learning was less present. Transformation framework (culture, structure, and technology), levels of change (optimization, improvement, and renewal) and actors in the change process (involvement and participations) were the three dimensions which were found to equally change universities towards sustainability. The barriers to change were lack of an incentive structure for promoting changes at the individual level. The main drivers for change were networking with society and funding.

Dunkley's (2013) study on how teaching staff were interested to teach about EfS in tertiary institutions revealed that, lack of institutionalized approach to EfS was a barrier. Although EfS contents were included in Universities' curricula, the teaching staff taught contents on EfS that they were interested in such subjects like chemistry, engineering, life sciences and physics. Dambudzo's (2015) study evaluated sustainability issues in a curriculum which was purely academic and one that was integrated with industry-based education. The finding indicated that, the integrated curriculum was more beneficial for education for sustainability. Patel (2003) implemented a holistic approach to teaching and learning processes at three higher learning institutions over nine years of reflective teaching practice in the field of information systems and computing. It was identified that a holistic approach was appropriate for developing learner's critical thinking, confidence and independence.

Studies about EfS at primary and secondary school level in Tanzania show that, EfS is more on environmental education (Mwendwa, 2017). Sustainability issues in the economy, political, and in the social sector gained less emphasis (Kimaryo, 2011; Kongela, 2014). Stralin and Wiman (2009) interviewed eighteen (18) secondary school teachers and observed their lessons in order to gain a better understanding on values teachers attached on environmentally sustainable development. The findings indicated that, the sampled teachers valued more the teaching about both reasons and effects of environmental destructions than other issues. Kimaryo (2011) investigated primary school teachers' perceptions of environmental education (EE), its integration, and teachers' implementation practices of the Tanzania primary school curricula. The findings indicated that, most teachers' focus was on knowledge about environment rather than sustainability. Environmental issues were documented in the curricula; however, it was not equally integrated in all subjects that were taught. Teachers failed to teach EE because the curricula did not clearly stipulate exactly what was to be taught, lack of teaching resources, and large class size.

Studies at secondary school level in Tanzania show that attention is paid to Social studies, Environment, Science subjects, Biology, and Geography (Rajakorpi, 2001). Geography, Science subjects and Biology are sought to enhance environmental education competencies at secondary school level (Mwendwa, 2017). The integrated approach is preferred over other approaches because of its possibility to fuse knowledge and skills from within and across subject disciplines and establish a link between key ideas (Kimaryo, 2017). The challenges with this approach have been teachers' inability to recognize and establish the link when implementing curriculum. At the level of higher education institutions Kongela (2014) investigated the challenges of introducing sustainability aspects in the curricula of the built environment courses that are offered. The findings indicated that sustainability education was taught in courses related to resources, light, and agriculture, rather than those related to the built environment. The reason was lack of coordination, bureaucracy in the curriculum review process to integrate sustainability and participants' misconceptions of sustainability concepts.

Conceptual Framework

The assessment of students' acquisition of EfS competence began by identifying content, knowledge, skills, approaches and values that were present in the crosscutting courses as guided by Lambrechts et al. (2009). This was followed by identifying tutor's and students' knowledge skills, involvement and actions that promote EfS both in curriculum documents and during teaching and learning processes as guided by Roorda (2010). The UNECE (2012) competencies for enhancing learners' EfS competencies, were applicable in the assessment process of approaches that tutors used. Scott and Gough (2003) model aided identification of skills that students acquired. The elements of this conceptual framework are summarized in Figure 2.

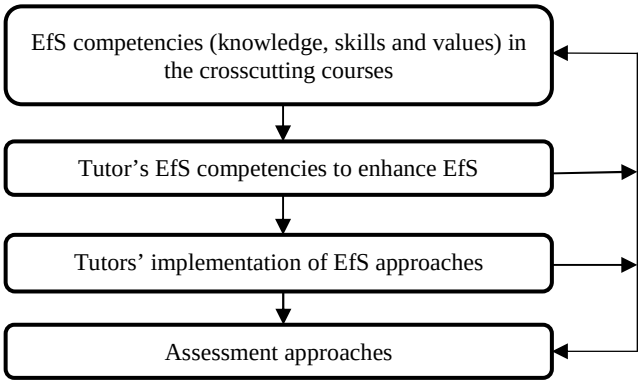

Fig. 2 ***A Conceptual Framework for Assessing Students' EfS Competencies as Adapted From Lambrechts et al. 2009), Scott & Gough (2003), Roorda (2010), and UNECE (2012)***

Research Methodology

The study employed a case study design in the interpretivism paradigm because EfS competence is an internal construct and is demonstrated through the demonstration of behavioral change. In this qualitative study, one university was purposively selected because it implemented curricula which were approved by the Tanzania Commission for Universities (TCU). Three (3) undergraduate crosscutting courses were purposively selected; Development studies, Information and communication technology, and Foundation of faith and ethics. The courses were compulsory for all students from six faculties; Theology, Business and Economics, Arts and Social Sciences, Law, Psychology, Science and Education. Apart from TCU, all teaching units were approved by the University senate and regularly reviewed after every three years of implementations. These crosscutting courses were taught in the first three semesters when students were in first and second years of study. Above 1500 students were enrolled and similarly approximately the same number of students graduated in each academic year.

Twelve students who were either studying the courses or had already studied and class representatives in academic matters were interviewed. Eight crosscutting course tutors who were teaching the crosscutting courses and those who had earlier

taught the courses were interviewed. Each tutor had taught the crosscutting courses for at least five years. Sixty (60) students participated through focused group discussions (FGDs) and filled in the close ended questionnaire. Selection of students and tutors was purposively done to ensure credibility of the findings. The tutors were identified as LDS1, LDS2, LCS1, LCS2, LICT1, LICT2, LFF1 and LFF2. The first letters represented a tutor or a lecturer while the second letters are course initials. A digital recorder was used to record interview sessions and these were later transcribed for thematic analysis processing. Inductive content analysis was applied to analyze data from documentary review. Content analysis began by coding contents and grouping text into five themes; EfS themes, EfS competencies, EfS approaches, assessment approaches, and learning outcomes. The unit of analysis was the presence of EfS contents in crosscutting course contents. Data were first interpreted from each source before interpretation of its meaning from the framework to ensure confirmability of the findings. Identification of EfS themes was guided by UNECE (2012), Lambrechts et al. (2009), Scott and Gough (2003), and Roorda (2010) framework. This description of the process of data collection and analysis is meant for ensuring transferability to another similar context.

Results and Discussions

Curricula documentation of EfS contents and learning outcomes

The findings revealed that, documentation of the crosscutting course contents and learning outcomes were more theory based than competence based. Contents and sub-contents did not explicitly address EfS. This is revealed by examples of statements about the crosscutting course learning outcomes; *"At the end of this course, students should demonstrate basic knowledge of computer networking, emails, and internet"* (Learning outcome in ICT course outline), "*At the end of the course, students should demonstrate knowledge of core instructions, concepts, principles, and theories related to development studies"* (Learning outcome in development studies course outline). "*Upon completion of the course, students should be able to explain about religion and human experiences*" (Learning outcomes in a Foundation of faith and ethics course outline). "*After completing this course, students should be able to use speaking, reading, listening techniques to communicate*" (Learning outcome in a communication skills course outline).

With regards to contents, the Development studies (DS) and Foundation of Faith and Ethics course outlines had some EfS contents. The Communication Skills and ICT course outlines did not explicitly include the EfS contents (Table 1).

Table 1: Course Contents and Sub-contents in two Crosscutting Courses

Course	Contents
Development studies	• Development planning and public policy
	• Globalization and development
	• Gender and development
	• Population, environment and energy management
	• Social services and development education: Education, health and culture
	• Urbanization and development

Foundation of faith and ethics	• Doctrines and practices (Practices in different kinds of faith) • Dimensions of religion • A changing world • Religion and politics, democracy, environment, • Morality and religion • Religion ethics and secular ethics

Source: The University curricula

In the same line, the DS and Foundation of Faith and Ethics tutors identified some EfS contents in the crosscutting courses that they taught. The ICT and Communications Skills tutors did not identify the EfS contents in the courses that they taught (Table 2).

Table 2: EfS Themes that the Crosscutting Courses Tutors Identified

Tutor	Crosscutting Course taught	EfS themes
LDS1	DS	Rural/urban development
LDS2	DS	Peace, citizenship and democracy, poverty, environmental protection, climate change, environmental health, nation building, agriculture, corruption and globalization.
LCS1	Communication skills	None
LCS2	Communication skills	None
LFF1	Foundation of faith and ethics	Ethics and philosophy, poverty, Environment education, family life, and morality
LFF2	Foundation of faith and ethics	Ethics, poverty, Environment education, family life, Morality, peace, religion, democracy
LICT1	ICT	Networking and communication
LICT2	ICT	None

Through interviews with ICT tutor, it was further identified by the tutors that, environmental education was an EfS content but was not included in the ICT course outline. The ICT tutor unveiled that:

Our course outline has no elements of environmental education. But ICT and environment cannot be separated. Where does ICT equipment go when are not useful? I think we are missing a point. I hear politicians in the country talking about this. No implementation. We are a dumping place. Our students must know about effects of disposing electronic equipment. Anyway, we are using LCD at least. But there is a lot and more to be done… (*LICT1 tutor's view on EfS themes in the ICT course*).

The Communication Skills tutor had a similar line of thought:

I don't teach the concept of climate change in Communication Skills. What I know is that, the concept and skills are taught in subjects like environmental geography and environmental studies. I teach Communication Skills. However, I know the effects of climate change are; low rainfall, deforestation, and loss of water. The mitigation skills here then would be to avoid destroying forest and creating of citizens' awareness on measures against. The government should continue imparting knowledge about the effects of the problems that are related. People must re-plant trees that are lost through overgrazing and agricultural activities (*Interview with LCS1*).

These findings revealed that not all EfS contents as identified by UNECE (2012) were included in both crosscutting courses that were taught at the University. Course contents in Foundations of faith and ethics had more contents in religious studies, ethics studies, and philosophy than contents in EfS. The contents in communication skills course outlines based more on the aspects of communication skills competencies than EfS.

It was further revealed that the crosscutting course tutors identified few EfS themes in the Development studies and Foundation of faith and ethics courses that they taught. This finding was in line with Kongela (2014) and Mwendwa (2017) whose study delineated that, limited EfS content in school curricula was a result of EfS issues being treated as related to environmental issues. The wide scope of the EfS theme which covers the economy, social, and political issues (Sterling, 2001; Parker, 2008) was less covered. This limited EfS content in the crosscutting course outlines influenced negatively the crosscutting course tutors' implementation.

The Teaching and Assessment Approaches Applied by Tutors

The findings from this study revealed that, crosscutting course curriculum documents recommended discussion and lecture as main teaching approaches. The two approaches were applied by tutors in the study in more traditional than transactional ways. The tutors' application of traditional approaches are confirmed by the crosscutting course tutors responses on how they implement the recommended teaching approaches; "*I use discussions, brainstorming, the purpose is for students to learn and understand the concepts, I use information and communication technology (ICT) to help them find reading, surveys, case studies, so that students share their experience"* (LDS1's views during interview). The Communication skill tutors disclosed that, discussions, lecture, and ICT tools enabled students to search, read and present information; "*I ask students to conduct research, prepare speeches, and presentations. Other techniques that I apply are; discussions, concept mapping, ICT, case studies, and report writings* (LCS2's views during interview). The Foundation of faith and ethics tutors applied the recommended approaches; "I *set a case for students to share experiences, lecture and discussions are common, I use groups, they plan, prepare presentation on an assigned topic or concept*" (LFF1's views during interview).

The use of discussions, lecture, and problem solving were also confirmed by the students: "*Our lecturers teach in teams. Each finish a portion of a course outline after two or three weeks, they also use presentations, lecture, discussion, and problem solving*" (S1's view on tutors' use of the approaches). Students' agreements on tutors' use of discussion, problem solving, and lecture was confirmed by high mode and median scores in the named course than the other approaches (Table 3). In Table 3, discussions, ICT, lecture, and problem solving had a mode of 4. Projects, modelling, and outdoor learning scored the least mode.

Table 2: Students' agreement on tutors' Use of Various Teaching Approaches

Teaching approaches	1	2	3	4	5	Median	Mode
Discussions	1	2	15	35	19	4	4

Conceptual and perceptual mapping	19	21	23	8	1	2	3
Philosophical inquiry	14	29	20	7	2	2	2
Value clarifications	5	25	27	13	2	3	3
Simulation, role playing, and games	18	35	13	6	0	2	2
Scenarios and modelling	29	29	7	6	1	2	1
ICT	0	17	10	30	15	4	4
Surveys	29	31	10	2	0	2	2
Case studies	23	23	18	4	4	2	1
Excursions and outdoors learning	31	23	11	6	1	2	1
Lecture	0	1	8	37	26	4	4
Learners' projects	31	25	12	4	0	2	1
Analysis of issues	27	26	13	6	0	2	1
work experiences	24	28	15	5	0	2	2
Problem solving	8	11	17	30	6	3.5	4

Key: 5= **Very often, 4= Often, 3=Sometimes, 2=Never, 1= No ideas**

With regards to assessment approaches, it was revealed that, the recommended assessment approaches in the crosscutting course outlines were more oriented to aiding determination of final students' scores and grading rather than learning. Both students and tutors worked most to meet requirement for students' grading requirements. The assessment based on assignments portion (individual and groups work) covered 25% of the assessment weight, midterm test covered 25%, while the final semester examination covered 50%. The data revealed that, tutors' lack of ability to approach the teaching by use of holistic and social critical approaches deterred students' acquisition of EfS competencies as suggested by Lambrechts et al. (2009) and Roorda (2010). The tutors' frequent use of lecture discouraged students' critical thinking skills (Wals & Jickling, 2002) and was contrary to the demand of experiential learning that is suggested in enhancing EfS (Scott & Gough, 2003). It was therefore concluded that, tutors' inability to use critical approaches suggested that they were less equipped in the higher EfS competencies.

Tutors' Reasons for Teaching Cross Cutting Courses

Results from interview and documentary review revealed that, the crosscutting course aims did not explicitly specify course aims that were in line with EfS competences. In addition, tutors' reasons for teaching the crosscutting courses did not reflect elements of EfS competencies. One ICT tutor had this reason: "*This century of science and technology, globalization, and sharing of information worldwide require graduates to be competent in ICT*" (Views from LICT2). The Foundation of Faith and Ethics tutor identified that: *"I think moral decay is in the society. The University must train students to develop their moral and ethical behaviours, the origin of ethics, religions, poverty and development in general"* (Views from LFF1). The Development studies tutor added that: "*Development is both for individual and nations. Students learn all aspects of development from the historical perspective and why we are underdeveloped,*

comparing others development stages and the way forward" (Views from LDS2). The Communication Skills tutor had a view that: *"Is to help students improve their communication skills, writing, and in their studies. Students' communication requires mastering the language and how to communicate"* (views from LCS1). This finding indicated that there was lack of institutional reasons, hence they did not find an integrative approach. As documented by Dambudzo (2015), lack of institutional approaches at the university led to failure to achieve common goals that were in line with EfS.

Conclusions and Recommendations

Conclusions

Based on the findings from this study, it was concluded that, the teaching of EfS in higher education learning institutions through crosscutting courses may address the country's challenges to achieve sustainability. However, the crosscutting course curriculum needs to be revised in line with the need to enhance the EfS competencies. To enhance EfS competencies, the tutors must be equipped with the higher EfS competencies. The crosscutting course outlines had few EfS contents. Therefore, students' expected demonstration of EfS competencies after graduating at the university were inadequate.

Recommendations

Based on the findings and conclusions from this study, it is recommended that;

1. crosscutting courses contents be harmonized so that the approaches to EfS are implemented country-wide.
2. Since crosscutting courses are compulsory at every university in Tanzania, there is a need for TCU to officially require curriculum developers at higher learning institutions to explicitly include EfS contents and approaches in any curriculum that is submitted for approval.
3. TCU should require the review of all crosscutting courses in Tanzanian universities in line with the EfS delivery.
4. Since participant tutors demonstrated non-related reasons for teaching of crosscutting courses, there is a need for curriculum developers at higher learning institution levels to clearly document the reasons for inclusion of crosscutting courses in line with EfS when designing the crosscutting courses.
5. There is a need for orienting crosscutting tutors to EfS approaches so that tutor put the approaches into applications.

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