

AWARENESS OF SUSTAINABLE DEVELOPMENT AT CUT

Z. UWAH AND M. MOTSOENENG

Abstract

The study presents the results from a project that was aimed at determining the level of awareness and understanding of sustainable development at Central University of Technology, Free State (CUT) among staff and students at the time of the commencement of the institutional Sustainable Development Project. The objectives of the study was twofold, firstly to assess the level of students' knowledge and understanding of sustainable development; and secondly to find out whether staff and students are interested in sustainable development and if they find it relevant to the university's mission. In achieving the objectives of the survey a pilot study was undertaken to test the understanding and awareness of sustainable development at CUT.

Key words: sustainable development, knowledge and understanding of sustainable development (SD)

1. INTRODUCTION

The article presents the results from a project aimed at determining the level of awareness and understanding of sustainable development at Central University of Technology, Free State (CUT) among staff and students. According to the World Commission on Environment and Development, the Brundtland Report (WCED, 1987) the concept sustainable development is broadly defined as the development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.

The growth of sustainable development is a result of growing awareness of global links between mounting environmental problems, socio-economic issues to do with poverty and inequalities (Hopwood, Mellor & O'Brien, 2005). Education is seen as critical in promoting the principles of sustainable development (Azapagic, Perdan & Shallcross, 2005).

CUT has decided to implement sustainable development as a central characteristic of its strategy and everyday operations. Realizing this will inevitably require the institution's staff and students to be aware of sustainable development and to ascertain their interest in the topic. The article aims at establishing the understanding at the beginning of the project. Azapagic, et al. (2005) indicated that university students did not possess a satisfactory level of knowledge and understanding of sustainable development and there existed significant knowledge gaps with regard to SD legislation, policy and standards, SD social issues and several environmental issues.

The questions of the survey held in this connection were asked specifically to staff in order to ascertain whether the SD has been integrated into their curricula.

The objectives of the pilot study were to:

- (i) Assess the level of students' knowledge and understanding of sustainable development;
- (ii) To find out whether staff and students are interested in sustainable development and if they find it relevant to the university's mission;

2. RESEARCH METHODOLOGY

Since education and learning are key to achieving sustainable development, questions posed to staff and students were mainly aimed at determining the current knowledge of Sustainable Development issues and the importance thereof as part of Higher Education for Sustainable Development (HESD) (Barth and Rieckmann, 2012). The increasing importance that is attached to education in sustainability is arguably due to the fact that sustainability issues in higher education, as well as in the general population, have been attracting increasingly high attention (Yaun & Zuo, 2012). This also created an opportunity for the university to embark on adopting more responsible behaviour by pursuing a sustainable development agenda (Nejati, 2012).

The respondents' profiles are shown in Table 1. The pilot survey covered all levels of the academic programs; operational units; staff and students. A total of 92 completed questionnaires were received from staff and 200 from students. There were 12 644 students studying and about 715 staff working at the CUT at the time of the pilot survey. The student survey paid attention on the following five characteristics of the participants:

1. *gender;*
2. *programme of study;*
3. *age;*
4. *understanding of the concepts of sustainable development; and*
5. *description of sustainable development keywords.*

The staff survey was more comprehensive focusing on sustainable development in the curriculum; research; operations and community engagement. Responses were received from the following units at Bloemfontein and Welkom CUT campuses:

Human Resource Systems;
Library and Information System (LIS);
Faculty of Management Science,
Faculty of Health and Environmental Science,

Faculty of Engineering and Information Systems, and
Faculty of Humanities.

Table 1 shows the demographics of the respondents who participated in the survey and Table 2 shows the different faculties and operational divisions at the CUT.

Table 1: Demographic profile of participants at CUT

Demographics	Percentage (%)
Gender (Staff)	
Male	50
Female	50
Gender (Students)	
Male	37.5
Female	62.5
Age (Staff)	
21-<40	37.4
40-<65	64.7
>65	5
Age (Student)	
<21	83.50
21-<40	12.50
Student Enrollment	
Engineering	36.50
Health and Environmental Sciences	12.50
Management Sciences	33.00
Humanities	18.00

Table 2: Faculties and Operational Divisions at CUT

Faculties	Operational
Engineering and Information Technology	Human Resource Systems
Health and Environmental Science	Library
Humanities	
Management Science	

The staff and students` awareness survey on sustainable development were classified into four categories in descending order, i.e.

1. Very familiar,
2. Familiar,
3. Heard of but could not explain, and
4. Never heard of.

Students were also asked to provide key words which would be associated with SD whilst staff were requested to indicate which programmes address sustainable development topics within their curricula and to identify essential sustainable development courses not taught at the university.

3. RESULTS AND DISCUSSION

Awareness of sustainable development

The number of responses for each statement is tabulated in Table 3. The data revealed that there is generally a moderate understanding within the student community of sustainable development. However there is a low level of awareness of the meaning of Higher Education Sustainable Development (HESD) among the students. However, the students showed a keenness to learn more about SD and HESD. From the keywords identified by students it is clear that they are aware of the importance and purpose of sustainable development. Interaction with students after the survey also made it quite clear that an integrated, applied approach to learning more about SD was needed. Students still battle to implement SD practices within their activities on campus. Integrating SD approaches from the learning environment into their daily practices and events at the university is still not evident - particularly in terms of students gaining an understanding of how their decisions and actions affect the environment and society (Lozano & Young, 2012).

Table 3: Students' and Staff's understanding of Sustainable Development (SD) concepts at CUT

Options	Percentage (%)Students	Percentage (%)Staff
Very Familiar	6.50	22.00
Familiar	53.50	43.00
Heard of but could not explain	31.50	34.00
Never heard of	8.50	1.00

From the 90 staff respondents it transpired that only 65 % of the staff were Very familiar or Familiar with the concept of sustainable development. This might seem moderate but in reality the survey only reflects the situation with respect to 12.6% of the CUT workforce at the time the study was done. About 35% of the staff indicated that they had never heard of SD nor could they explain the concept. This was especially evident from staff working in the non-academic divisions.

The keywords identified by the students (Table 4) on the perception of sustainable development clearly indicated that they are aware of the developmental principles of sustainable development. The students could clearly identify keywords related to the three pillars of sustainability namely; environmental development, economic development and socio-economic development. Even though the students couldn't clearly explain the sustainable development concepts the keywords evidently showed the awareness of the students regarding the importance of sustainability.

Table 4: Students' perception of Sustainable Development Keywords

Environmental Development	Economic Development	Socio-Economic Development
Conservation Preservation Saving Recycling Re-use	Employment Development Education Farming	Housing Resources Responsible Passion Desire Growth Hands-on

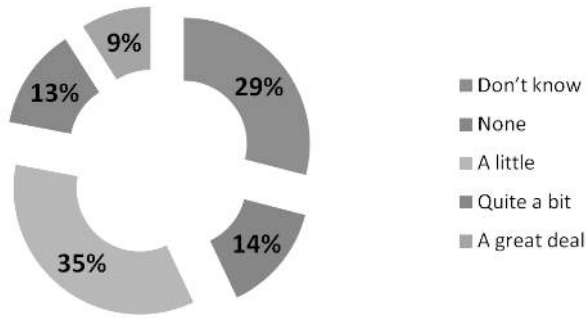


Figure 1: Topics relating to Sustainable Development in academic programmes by staff

Taking into consideration that Higher Education Institutions (HEIs) are considered to be significant contributors to the promotion of SD and HESD it is important to note that 43% of the respondents indicated that they had no idea whether CUT academic programmes addressed topics related to sustainable development (Figure 1). Lozano (2006) reports that still many university leaders and academicians are oblivious or ignorant of sustainability principles in the university setting. The respondents did however indicate a strong need to have sustainable development issues integrated into all undergraduate programmes.

Table 5 provides the number of courses perceived by the respondents to be teaching sustainable development topics.

Table 5: Courses taught with Substantial Sustainable Development Content at CUT

Courses
Human Resources
Project quality
Economics
Management IV
All Technology subjects at diploma level
Urban and Rural Planning
Architecture
Civil Engineering
Project Management
Agricultural Management
Environmental Health

Fire Technology
Biology Education
International Marketing
Information Technology
Internal Audit
Industrial Relations
Tourism Development
Organisational Behaviour
Labour Law
Electronics
Information Systems
Accommodation Management
Business Ethics
Sports Management
Building

Quarterly reports from the faculties presenting these courses still need to identify how much (percentage) of the content taught deals with environment development, economic development or socio-economic development. Once this has been established the university can work towards classifying and ESD-labeling of programmes similar to the eco-labeling model used at the University of Gothenburg as seen in Fig 2 below (Boman and Andersson, 2011). The filled symbol labels courses and programs where more than 50% of the content deals with the environment and sustainable development. The bordered whiter symbol labels courses or programs where less than 50% deals with the environment and sustainable development.



Figure 2: An example of the eco-labeling symbol used to identify sustainable development courses or programmes (Boman and Andersson, 2011).

Interesting enough Table 6 identifies the number of important courses with a possible bearing on SD not taught at the university as of yet. CUT has recently undergone a recurriculation process and courses in renewable energy have been identified and will be presented at the university in the near future. New and exciting developments are emanating from the university's built environment unit and progress in green building design research and incorporation into curricula is in the developmental phase. Tons of research still needs to be done on mining methodologies and the university realizes the importance on finding sustainable techniques that will not only enhance environmental development but both socio-economic and economical development.

Table 6: Nationally curriculated courses relating to Sustainable Development not taught at CUT

Courses
Mining Engineering
Green building design
Rehabilitation and maintenance of infrastructure
Recycling material for construction material
Natural Resource management
Human Evolutionary needs
Practical / creative problem solving
Generic skills
Academic life skills
Renewable and sustainable energy
Ethics

Staff still need to be trained and educated on concepts of sustainable development. Staff within the operational sector of the university identified a great need for more awareness on sustainable development principles especially within their working environments. Table 7 indicates the percentage of awareness amongst staff.

Table 7: The awareness of Sustainable Development Research within CUT staff

Awareness	Percentage (%)
A Great Deal	19
Quite a Bit	45
A Little	15
None	11
Don't Know	10

Most of the academics identified the importance of having relationships with external partners on sustainability-related matters as this involves public / private participation and citizen involvement. About 40% of staff indicated a great deal while 35% quite a bit acknowledged that partnerships help to foster and embed sustainable development into the university. The university also recognizes that more development and education needs to be rolled out on how to foster relationships and partnerships with external stakeholders which will promote sustainability.

Table 8: Formal partnerships or relationships at local, regional, national or international level which promotes Sustainable Development engagement

Sustainable Community Engagement	Percentage (%)
A Great Deal	40
Quite a Bit	35
A Little	15
None	5
Don't Know	5

4. CONCLUDING REMARKS

Even though the Central University of Technology, Free State has declared its commitment towards actively implementing sustainability there are many challenges and hurdles to overcome. The understanding of the concept is still in its initial stage. SD has not yet been fully integrated into the curricula at CUT. Few courses that are taught do incorporate the concept of SD. The understanding of SD among students is fairly poor. This is informed by what is taught to them.

There is still an increasing need to foster sustainable development into the day-to-day activities at CUT. The greatest challenge of all will be to educate the educators on how to educate their students in sustainable development. Research has clearly shown that sustainable development should evolve as the Golden Thread integrating curricular, community engagement, operations and most importantly research (Lozano et al., 2011) in a university system.

The commitment of implementing sustainable development at CUT is really crucial and as a university of technology it is important to reinforce this commitment through support from all the organizational members (Nejati, 2012). Implementing sustainable development offers CUT the opportunity to introduce new and innovative learning and teaching approaches but will also trigger social learning within the organization (Barth And Rieckmann, 2012). The main challenge though would be to change mindsets, attitudes and perceptions on SD.

5. REFERENCES

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