



# Education for sustainable development and global citizenship

## An evaluation of the validity of the STAUNCH auditing tool

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The STAUNCH  
auditing tool

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Received 18 November 2009

Revised 10 March 2010

Accepted 20 August 2010

### Abstract

**Purpose** – The purpose of this paper is to test the validity of the curriculum auditing tool Sustainability Tool for Auditing University Curricula in Higher Education (STAUNCH®), which was designed to audit the education for sustainability and global citizenship content of higher education curricula. The Welsh Assembly Government aspires to incorporate sustainability across all sectors and required an audit of all higher education curricula within Wales. The paper also discusses responses to the auditing process, findings at an institutional and national level and proposes recommendations for improvements.

**Design/methodology/approach** – The University of Wales, Newport, provides the case study to test the validity of the STAUNCH® software.

**Findings** – The quality and effectiveness of the curriculum content was not identified by the audit. The audit identified what the curriculum offered but did not necessarily reflect that studied by students. Modules offered on more than one course were awarded credit within the “cross-cutting” criteria of the audit and this distorted the final results. The audit enabled curriculum managers to identify programmes of study which exhibited strengths and limitations in this area. Utilising a common auditing tool across the Welsh higher education sector allows for future developments to be collective and collaborative.

**Practical implications** – A general consensus of opinion from a network of Welsh higher education institutions regarding any future use of this auditing tool is currently one of uncertainty as far as any validity the tool may bring to driving the sustainability agenda forward. Alterations to the STAUNCH® software and auditing process are proposed if possible future audits are to be more effective. Nevertheless, within a relatively short time span education for sustainable development and global citizenship within Welsh higher education is gaining momentum. Amendments have been made to university documentation, staff-training initiatives developed and the potential impact of curriculum development in this area is beginning to be realised.

**Originality/value** – This paper discusses the application of a new sustainability curriculum-auditing tool and the validity of the tool in progressing sustainability within the higher education sector.

**Keywords** Universities, Curricula, Auditing, Higher education, Sustainable development, Wales

**Paper type** Case study



International Journal of Sustainability  
in Higher Education  
Vol. 12 No. 2, 2011  
pp. 125-144

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1467-6370

DOI 10.1108/14676371111118192

## **1. Introduction**

The Talloires Declaration made by university administrators in 1990 provided an impetus to raise the profile of sustainability issues on campuses and within higher education curricula. This official statement of commitment to sustainability in higher education made by universities included the agreement for higher education to address awareness of environmental sustainability, create an institutional culture of sustainability, educate for environmentally responsible citizenship and promote environmental literacy for all (University Leaders for a Sustainable Future, 1990). The Conference of European Rectors Copernicus Charter (Co-operation Programme in Europe for Research on Nature and Industry through Coordinated University Studies) was launched in 1993. The Charter was presented to more than 500 European universities from 36 nations and it “reiterated the desire for universities to become leaders in creating sustainable societies, and stressed the need for a new set of environmental values within the higher education community” (Wright, 2004, p. 12). This Charter has impacted European Higher Education; by 2006, 328 universities had signed it (Copernicus Campus, 2010, p. 36) and by endorsing it, higher education institutions are encouraged to conduct a gap analysis of curricula for sustainability content, publicise sustainability learning, provide workshops on sustainability, develop recommendations for lecturers and review the situation annually (Copernicus Campus, 2010, p. 29).

Other initiatives have emerged including the Toyne Report (Toyne, 1993), in which senior higher education managers in the UK were encouraged to accept their environmental responsibility. Landmarks, such as the Talloires Declaration, Copernicus Charter, Toyne Report and many other declarations and policies have been reviewed previously by others including Alabaster and Blair (1996) and Wright (2004). Currently, the United Nations Decade of Education for Sustainable Development (DESD) is underway (2005-2014), with the overall goal being to integrate the principles, values and practices of sustainable development into all aspects of education and learning (United Nations, 2009). An important aspect of the DESD is the creation of Regional Centres of Expertise on Education for Sustainable Development. A Regional Centre of Expertise is a network of existing formal, non-formal and informal education organisations mobilised to deliver education for sustainable development (ESD) to local and regional communities (United Nations University, 2009). If awareness of environmental sustainability is to increase, an institutional culture of sustainability is to develop and educating for responsible citizenship is to be a priority, then the higher education curricula must address these issues. Higher education needs to provide evidence of progress in this area and auditing campuses and curricula offers indicators to evaluate the situation.

## **2. Auditing sustainability in higher education**

The auditing of the sustainability of higher education institutions has taken many different forms, as they strive to assess and record progress in this area; identifying strengths and weaknesses, and setting targets for future improvements. Graedel (2002) acknowledged that a myriad of ways could provide targets for action for sustainability at universities but meaningful environmental targets would be a good place to begin; relating proposed targets and actions to energy use, water use, the use of resources, emissions and the use of land (Graedel, 2002, p. 350). The Global Reporting Initiative (GRI) developed in 1997, which originated in the CERES and the Tellus Institute

in Boston, USA, now results in more than 1,000 organisations self-declaring the use of GRI Guidelines for their sustainability reports and many more applying them informally (Miles-Hill, 2007, p. 1). These guidelines are directed at business organisations and according to some (Cole, 2003a; Lozano, 2006) were lacking in their applicability to the higher education setting, as an educational aspect was absent.

Consequently, tools have been developed to specifically assess the environmental impact of higher education campuses. The Campus Sustainability Assessment Framework (CSAF), developed by Cole in 2003 for Canadian universities, incorporated over 175 indicators, performance benchmarks and resulted in a campus sustainability index (Cole, 2003a, p. 2). Cole (2003a) acknowledged the influence of Prescott-Allen's (2001) wellbeing index in constructing the CSAF indicators with issues, such as open space, trees and equal pay among the many that also included environmental measures and references to policies. Cole's framework assessed the curriculum via the proportion of courses with some sustainability content, applied learning included and number of students taking relevant courses. According to Cole, this was difficult to measure as definitions were loose and determining benchmarks problematic (Cole, 2003b, p. 32). Beringer (2006) reviewed the effectiveness of the CSAF as an auditing methodology concluding its role in developing a baseline for sustainability and acknowledging the value of "synergising research, education and campus operations" (Beringer, 2006, p. 438). Limitations of the CSAF auditing methodology were highlighted by Beringer including the demands on volunteers to collect data; however, this allowed the opportunity of using the tool as teaching material. Even though tracing the relevant information proved problematic and hard to find for many indicators the achievement of developing a sustainability baseline was deemed worthwhile (Beringer, 2006, p. 448).

The Auditing Instrument for Sustainability in Higher Education produced by a Dutch working group provided criteria and a framework to conduct internal and external sustainability audits (Roorda, 2001). About 20 criteria were split into three groups; "plan", "do" or "act", and institutions located within one of five stages of development resulted in a matrix representing status and goals complete (Shriberg, 2002, p. 262). Although environmental management appeared as a criterion, others included staff development, educational methodology and curriculum reflecting the process-oriented approach of the audit (Roorda, 2001, p. 22). Following successful testing in universities in The Netherlands and Sweden, utilising the tool to develop policy was explored and training offered to university sustainability staff as the tool continues to be applied to more and more institutions (Roorda, 2004, p. 305).

The aforementioned sustainability tools and several principal others have been succinctly reviewed by Shriberg (2002, 2004) and Lozano (2006). Shriberg (2004, p. 82) concludes that the tools are useful in capturing baseline data on environmental performance and they are a foundation for strategic planning on campuses. He questioned the necessity to develop a "universal assessment tool" and whether cross-institutional rankings of sustainability have a future (Shriberg, 2002, p. 268). More recently Rauch and Newman (2009) assessed the applicability of a sustainability metric, however, this only focused on generating targets for emissions, energy use, water use and waste and recycling for a campus with no reference to the curriculum. Responding to the UK sustainable development strategy the Higher Education Academy (HEA), who provides support to the higher education sector, commissioned a study to identify current practice and future developments for sustainable development in higher education

(Dawe *et al.*, 2005). The research identified three categories into which disciplines were ranked; those embedding ESD in a major way, those that have made limited progress to embed and those which although having an interest have found it difficult to embed (Dawe *et al.*, 2005, p. 5). Data collection involved literature reviews, internet searches and an investigation of the curricula content of HEA subject centres. Consequently, disciplines were grouped, for instance languages and psychology were keen to progress ESD but were encountering difficulties whereas bioscience and economics were regarded as being of intermediate status, with high potential and enthusiasm to embed ESD (Dawe *et al.*, 2005, p. 25). As a result of the study, barriers and solutions were presented and recommendations proposed to progress ESD in higher education.

The momentum to address sustainability has continued to increase in the UK with the Higher Education Funding Council for England producing a strategic review of sustainable development in higher education institutions in England in 2008 (Policy Studies Institute, 2008). The methodology behind the review involved environmental management systems data collection, searches of higher education web sites for key sustainability terminology, interviews and the collation of research data, such as funding and the number of published journal articles relating to sustainability issues. This review included four case studies and the expressed intention was not an audit but aimed to gain insights into sustainability within the sector (Policy Studies Institute, 2008). As a result, the review included databases of courses containing elements of sustainability, funding levels for research and accounts of the interviews citing good practice.

### 3. Background to Welsh curricula audit

Sustainability is being incorporated into many higher education institutions worldwide via research, buildings, operations and outreach activities (Lozano, 2009; Lozano and Peattie, 2009). However, many continue to struggle to integrate sustainability into curricula. As a result of his audit of existing tools Lozano (2009) concluded “there was no existing tool that could provide sufficiently robust and holistic information to complete the task”. Here, he was acknowledging the balance of environmental, social and economic elements which a holistic sustainability curricula demands. Lozano was recognising the fact that of the many possible auditing tools available it is the quantitative “environmental” data collection and analysis that has been so often targeted (Graedel, 2002; Lozano, 2009; Lozano and Peattie, 2009; Rauch and Newman, 2009).

To address these deficiencies, Lozano developed Sustainability Tool for Auditing University Curricula in Higher Education (STAUNCH©) in 2007 at the Economic and Social Research Council funded Centre for Business Relationships, Accountability, Sustainability and Society at Cardiff University. Lozano aimed to undertake a systemic audit of curricula related to sustainable development across all Cardiff’s undergraduate teaching (Lozano, 2009; Lozano and Peattie, 2009). The main deficiency within already existing auditing tools that STAUNCH© aimed to address was the ability to quantify curriculum content by scoring sustainability course content. Such content was categorised into “economic”, “environmental”, “social” or “cross-cutting” themes, the tool aimed to highlight the proportion of courses containing sustainability content and whether this content emphasised environmental themes, such as pollution and climate change or stressed social elements, such as poverty and diversity (Lozano, 2008). This methodology not only provided the “balance” of the education for sustainable development and global citizenship (ESDGC) content, but the scoring also supplied

the depth of detail offered by the module or course. The auditing tool was nominated for outstanding contribution to sustainable development in the Times Higher Education Awards (The Times Higher Education, 2008). The STAUNCH© software was selected by the Welsh Assembly Government, the Higher Education Funding Council for Wales and Welsh higher education institution representatives on the ESDGC network group as the method of choice for auditing Welsh higher education curricula.

The Welsh Assembly Government has uniquely assigned global citizenship of equal importance as sustainable development by adopting the term ESDGC. Since 1999, when power devolved to the Welsh Assembly, the Assembly have demonstrated a strong commitment to the sustainability agenda. Sustainability is written into the constitution in Wales and is evident in the publication and implementation of several policy documents. For example:

- ESDGC: a strategy for action, 2006; and
- One Wales One Planet, 2009.

The 2006 ESDGC Strategy for action stated that the widest dissemination of an understanding of ESDGC is vital and emphasised the key role higher education has to play. Higher education has responsibility to educate the leaders of tomorrow, conduct effective environmental management for their institutions and has potential for influencing others (Welsh Assembly Government, 2006, p. 32). Among essential strategies for action was for higher education institutions to conduct a self-analysis of their curricula for ESDGC content (Welsh Assembly Government, 2006, p. 8), identifying where ESDGC was being taught and any potential for future incorporation. In order to action this strategy the Welsh Assembly Government, via the Higher Education Funding Council for Wales, provided funding of £22,500 to each Welsh higher education institution to conduct audits to determine evidence of sustainability. There were two strands to the audit: environmental management systems and the curriculum.

The development of environmental management systems appears to be making good progress within many universities whereas evidence of embedding ESDGC within the curricula is not as visible (Scott and Gough, 2004; Locke *et al.*, 2009). However, an audit of the curricula at the University of Gävle, Sweden, resulted in raising the profile of sustainability (Sammalisto and Lindhqvist, 2008) and feasibly at least such an outcome could be anticipated in Wales. The audit aimed to establish the strength and balance of the ESDGC curriculum content of Welsh universities. Consequently, the main intention of this paper is to test the validity of the new curriculum auditing tool STAUNCH©, its ability to indicate sustainability curricula content and progress the sustainability agenda. Responses to the auditing process and findings at the institutional and national level will be discussed and recommendations to improve STAUNCH© proposed.

The University of Wales, Newport, has its main campuses in Newport, the third largest city in Wales. Newport has a multi-cultural population of 140,000. It is situated halfway between Bristol and Cardiff. The city of Newport is currently undergoing a new development programme worth approximately £2 billion. The University is also investing in a new city centre campus. The University of Wales, Newport, became a full constituent institution of the University of Wales in 2003. The University offers approximately 160 different programmes of study and has 4,556 full-time and 5,852 part-time students (2008 University data). The number of students in each school are:

Newport School of Art Media and Design, 1,684; Newport Business School, 3,440; Newport School of Education, 3,132; Newport School of Health and Social Sciences, 1,238 and the Centre for Community and Lifelong Learning, 914. These figures include 439 international students. There are 149 full-time academic staff plus 410 working part time, support staff total 874, with approximately half of these working part-time. The University of Wales, Newport, was one of two lead partners with Swansea University, who developed the successful application for the recognition of Wales as a United Nations Regional Centre of Expertise, announced at the beginning of 2010.

**4. The case study curriculum audit**

*4.1 Methodology*

The curriculum audit took place between September 2008 and February 2009. The university was provided with the STAUNCH© software and manual (Lozano, 2008), and one researcher attended a one-day training course. The audit involved three main stages:

- (1) data collection and input;
- (2) criteria grading; and
- (3) analysis and results.

Data were collected from the aims and descriptions of module specifications. At the University of Wales, Newport, all module specifications are inputted onto a template, which meant accessing the data was straightforward. In order to grade the modules for ESDGC content, 36 criteria were used to evaluate the balance and strength of course content. Table I lists the criteria (Lozano, 2008) identified to grade the module content. These criteria were based on earlier auditing initiatives (Lozano and Peattie, 2009, p. 183). It is important to note a large element of subjectivity exists when grading using these criteria. Unless the same researcher conducted the audit for all institutions reliability in comparing institutions is questionable.

During the training course, it became apparent that prior knowledge and understanding of the criteria to be graded was important. Some researchers had been appointed to conduct the audit as they had administrative skills yet they lacked experience with ESDGC terminology. The grading did not involve a word search for the terms presented but an appreciation that alternative terms may be evident and the relevant importance of terms within the ESDGC agenda. The training provided a collaborative moderating experience ensuring researchers were assessing consistently. This was important as the Welsh ESDGC network group had agreed to conduct the curriculum audit using the STAUNCH© tool and as a result all grading applied the fore mentioned criteria. In the future, there is the possibility that all Welsh universities establish a common baseline for ESDGC content delivery. Grading the criteria aimed to determine the strength of content covered. The criteria were graded on four levels (Lozano, 2008):

- Left blank – The issue is not mentioned in the module descriptor.
- 1 – The issue is just mentioned in the module descriptor with no further explanation provided.
- 2 – The issue is mentioned and there is a brief description of how it will be addressed.



Economic	Environmental	Social	Cross-cutting
GNP/productivity	Policy/administration	Population	People as part of nature/ limits to growth
Resource use/exhaustion	Products and services (transport)	Employment/ unemployment	Systems thinking/ application
Finances and sustainable development	Pollution/accumulation toxic waste/effluents	Poverty	Responsibility
Production/consumption patterns	Biodiversity	Bribery/corruption	Governance
Developmental economics	Resource efficiency/ eco-efficiency	Equity/justice	Holistic thinking
	Global warming/ emissions/ acid rain/climate change	Health	Long-term thinking
	Resources (depletion, conservation)	Social cohesion	Communication/reporting
	Desertification/ deforestation/land use	Education	SD statement
	Ozone depletion	Diversity	Disciplinary
	Alternatives	Cultural diversity	Ethics/philosophy
		Labour/human rights	

Source: Lozano (2008)

**Table I.**  
Criteria to assess  
contributions to ESDGC

- 3 – The issue is mentioned and there is a comprehensive and extensive explanation of how it will be addressed.

Within the cross-cutting theme, there was a disciplinary criterion and this was graded to reflect the number of courses on which a module was included. For example, grading left blank if only offered on one degree course through to “3” when the module was offered in two or more schools (faculties). Such grading dramatically affected results, as many programmes of study involve joint courses. Also if a module existed on several programmes of study the audit required the data to be inputted separately for each mention. This meant that some modules were recorded many times, however, this was necessary if data were to be analysed at the level of degree programmes. Different credit sizes for modules existed, usually from ten to 60 credits, with the majority of modules awarding 20 or 30 credits. The credit weighting for modules was not required for the audit, which meant that all modules were assessed as if they had equal weighting in terms of credits. In some instances, students choose optional modules and without auditing each student’s selection of modules exact combinations were not identified. These issues were recognised by several of the Welsh universities as possibly not providing a true reflection of the courses students study. The spreadsheet allowed for notes to be made and module credit weighting was recorded for possible future use. Table II is an extract illustrating the data input required before grading the ESDGC criteria. The spreadsheet used Microsoft Excel and could sort data by module code, module title, degree or year. If such data were already stored using Excel then it was possible to “cut and paste” into the STAUNCH© spreadsheet to save time.

Tables III and IV provide examples directly from the module aims and descriptions to illustrate the assessment of the grading criteria. The software could accept 360 modules per spreadsheet. As a large number of modules existed (4,200), each school's data were inputted into a separate version of the software and to provide results for the whole university, these were all transferred into another version.

4.2 Results

In order to consider the findings of the audit, the following results have been selected from Newport School of Education as a sample. The value of the audit at module, degree and department/school level is illustrated prior to reflecting on the findings for the whole university. This is the order the results are generated and these initial levels

**Table II.**  
Extract from  
STAUNCH©  
spreadsheet, illustrating  
data input for each module

Module code	Title	Tutor	Degree	Year	Notes
G106514	Academic skills	–	English and Counselling St and Society	1	Core 20
G105035	Counselling and society	–	English and Counselling St and Society	3	Opt 40
G106398	Counselling theory	–	English and Counselling St and Society	1	Opt 20
G105263	Intro to fiction and poetry	–	English and Counselling St and Society	1	Core 20

**Table III.**  
Examples of grading  
criteria blank to Level 2

Module aim/descriptor	Criteria	Grade
To study in depth, fundamental concepts and beliefs, predominantly in Hinduism, but also with reference to other Indian religions	Biodiversity	Blank
“Individual uniqueness” and the effects of social structure on identity – belonging to groups – class, gender and culture	Diversity	1
Poverty – definition, causes and consequences, degrees of poverty (life, financial, emotional, absolute and relative)	Poverty	2

**Table IV.**  
Example of grading  
criteria to Level 3

Module aim/descriptor	Criteria	Grade
Factors which influence the child's world. The child, herself, the family, the local social fabric and environment, the national and international environment, national and international affairs The main child health problems in developed and developing countries and strategies for their amelioration. Developed countries: severe chronic disorders, morbidity and mobility issues as a result of accidents, lack of family cohesion, socio-economic disadvantage and unequal access to health care. Developing countries: infection, malnutrition, sanitation, housing and education The devastating effects of war The UN convention on the rights of the child: implications for practice in the health field Population-based approaches for improving child health	Health	3



provided curriculum managers with insights about particular programmes of study as opposed to a summary for the whole school or university. Once all modules had been assessed the software analysed the contribution and strength of ESDGC content using proprietary algorithms (Lozano, 2008). The analysis is embedded in the tool and generated results for each programme of study, school and the whole university. Table V illustrates how the module strength is established, with Table VI showing the contribution of a single-degree programme to the assessed criteria.

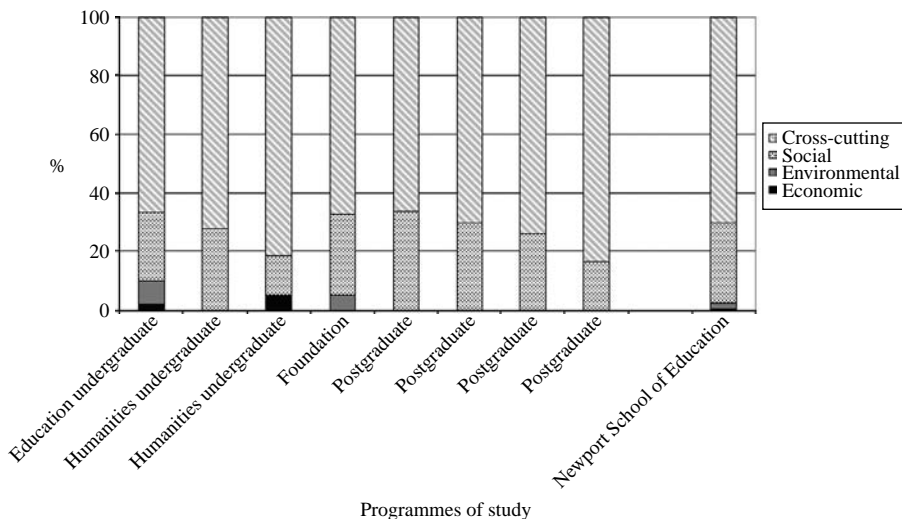
The software presented results graphically and summarised the findings. Figure 1 is a graph representing the balance of ESDGC criteria by department for Newport School of Education. Owing to the limit of 360 modules per spreadsheet, it was not possible to provide total results for departments, such as humanities or postgraduate courses, as these were spread over several sheets. To generate such results, each department would need to have data transferred to a new version of the software, in order to create a summary across a few spreadsheets and it was at the programme of study level that findings provided the most useful insights for curriculum managers. Figure 2 shows the same courses from the School of Education but in this instance the strength of coverage

Module code	Title	Module strength	Economic	Environmental	Social	Cross-cutting
G106243	Persuasion and influence	2	1		1	

**Table V.**  
Example of the contribution to ESDGC from a single module

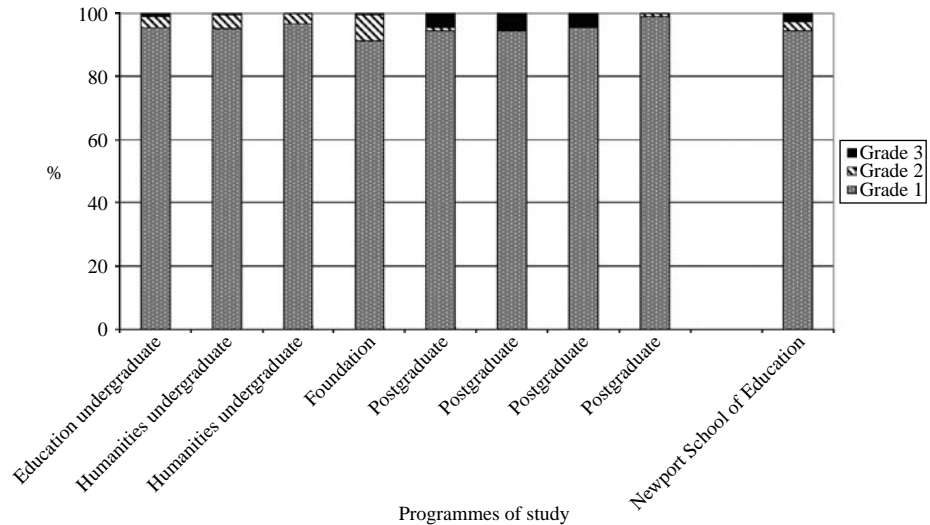
ESDGC criteria	Economic	Environmental	Social	Cross-cutting
Percentage of contributions	8	25	4	63

**Table VI.**  
Example of degree contribution (science with maths (QTS))



**Figure 1.**  
The balance of ESDGC contributions within Newport School of Education

**Figure 2.**  
The strength of ESDGC  
contributions within  
Newport School of  
Education



is shown. It is important to note that the graphs presented here are not directly from the STAUNCH© software as STAUNCH© produced all graphs in colour and it was not possible to edit their formatting. In order to illustrate the results, these quantitative data were inputted into Excel for redrafting of figures.

The graphs reveal that the majority of modules provided ESDGC content via the cross-cutting criteria and the strength of mention for ESDGC content in the vast majority of instances was very brief. It was also apparent that social criteria featured within many modules and in several instances, a more comprehensive explanation was provided. Considering the nature of the courses within education such emphasis on social criteria was to be expected. It became apparent during feedback sessions that the brevity of the module specifications failed to present the depth of content necessary to grade up to “3”, yet when content was expanded upon via discussion this depth of coverage was evident. Other graphs were also generated by the software to illustrate contribution and balance of the degree versus the strength of the school and a similar graph that only includes those degrees that contribute to ESDGC. As well as presenting the data graphically the programme provided a quantitative and semi-quantitative summary of the results. Table VII is an extract from a more extensive table, illustrating the balance of contributions for the School of Education. The duplication in the degree course headings demonstrates the inability of the STAUNCH© software to input more than 360 modules per sheet. Postgraduate courses, particularly Masters, would benefit from auditing the student experience as more than 60 modules are offered to students who then select to study five of them to complete the course. Following is an extract of the summary produced by the STAUNCH© software for Newport School of Education:

- From 2,052 modules analysed 1,846 relate to SD.
- The contributions to SD are predominantly medium.
- The strength of contributions to SD is mainly low.
- The main focus of the courses is on cross-cutting.

Degree courses	Economic (%)	Environmental (%)	Social (%)	Cross- cutting (%)	Number of modules		Percentage of modules of school total	Percentage of modules contributing to SD
					Touching SD	Total		
Education undergraduate	2.25	7.87	23.26	66.62	224	305	14.86	73.44
Humanities undergraduate	0.00	0.00	27.68	72.32	271	306	14.91	88.56
Humanities undergraduate	4.83	0.00	13.90	81.27	102	109	5.31	93.58
Foundation	0.00	5.02	27.82	67.15	300	312	15.20	96.15
Postgraduate	0.00	0.00	33.58	66.42	306	323	15.74	94.74
Postgraduate	0.00	0.00	29.99	70.01	308	313	15.25	98.40
Postgraduate	0.00	0.00	26.20	73.80	255	276	13.45	92.39
Postgraduate	0.00	0.00	16.54	83.46	80	108	5.26	74.07

**Table VII.**  
The balance of ESDGC  
contributions for  
Newport School of  
Education

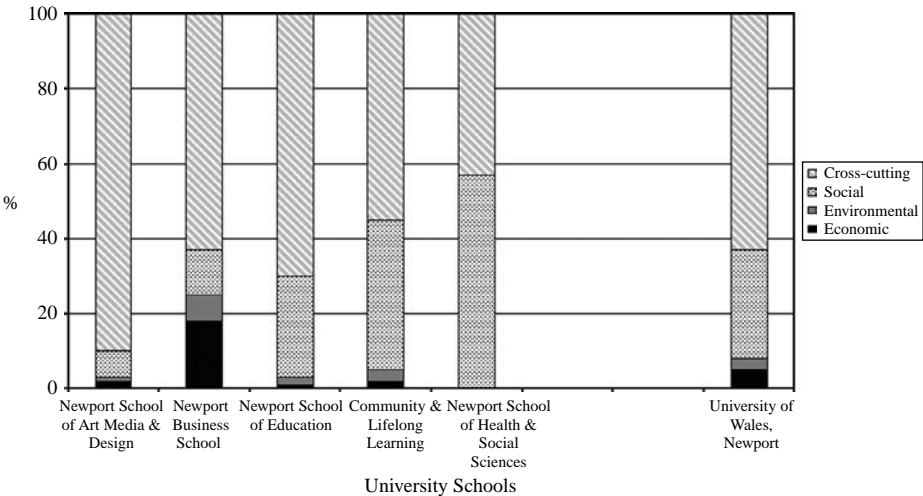
- The least focus of the courses is on economic aspects.
- About 1,846 modules contribute mainly to cross-cutting aspects.
- All degrees have fewer than 35 per cent of their modules contributing to SD.
- About 1,846 have more than 50 per cent with a low contribution to SD.
- Few degrees have medium contribution to SD.
- Few degrees have a high contribution to SD.

This summary is very broad and generalised; drilling down to module and may be course results were where strengths and weaknesses in ESDGC delivery could be identified.

The overall summaries produced are interesting but by looking at each programme of study in more detail it is possible to determine areas with existing ESDGC contributions and those with the potential to embed content to a greater extent. This proved to be a useful tool for programme leaders and academics responsible for learning and teaching within different schools. The data had been inputted using a new version of software for each school, resulting in a summary report and graphs generated for each school. It had been necessary to use multiple sheets to input all modules for a school due to the limitation on module numbers per sheet. When data from all schools were transferred into a separate version of the software the balance and strength of contributions for the university as a whole was generated. Figure 3 shows the balance of contributions across the whole university.

In summary, 4,200 modules were analysed for the University of Wales, Newport, with 88 per cent containing some contribution to ESDGC. However, the cross-cutting criteria provided 63 per cent of these contributions and many of these classifications were a result of the module existing on more than one programme of study, as many joint degrees are offered at the University of Wales, Newport. Almost all the degrees offered contained an element of ESDGC according to the audit. The credit given for a module existing on several programmes of study by STAUNCH© in many instances provided the only ESDGC reference. It must be noted that the application of percentages by the STAUNCH©

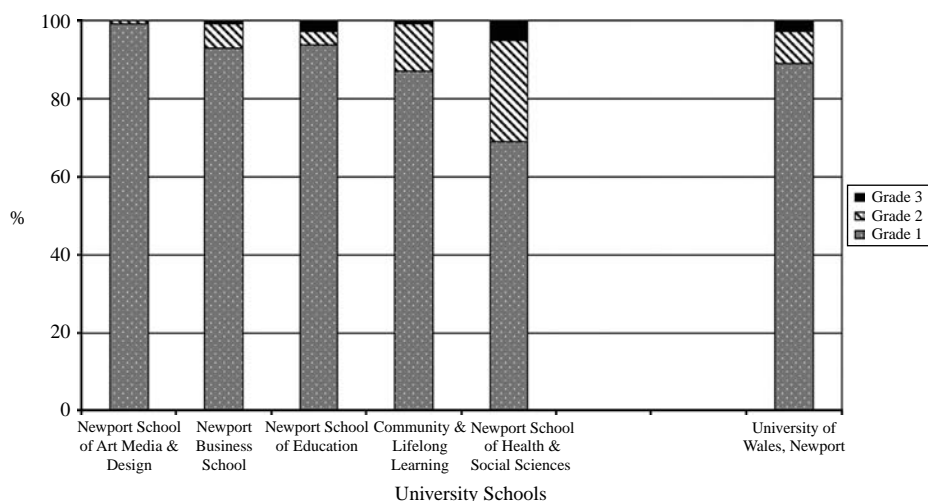
**Figure 3.**  
The balance of ESDGC  
contributions for each  
school at The University  
of Wales, Newport



software meant the incidence of ESDGC criteria was only evident in the tabulated results sheet. For example, the results for a module which contained no ESDGC criteria apart from the module being offered on other programmes of study, scored “1” under disciplinaryity and displayed as 100 per cent cross-cutting, which was misleading. A few modules were offered to other schools and possibly only these should have been recorded to illustrate the interdisciplinarity. Within all audited programmes of study at the University of Wales, Newport, social aspects accounted for 29 per cent, economic 5 per cent and environmental 3 per cent of the ESDGC contributions.

The strength of contributions, that is the percentage of modules graded “1, 2 or 3”, is shown in Figure 4. It is evident that Grade 1 (a brief mention) was dominant within all schools. This was not surprising when considering the briefness of module descriptors. According to this STAUNCH© analysis, the University of Wales, Newport, fell within the group of relatively medium contributors to ESDGC (1.20). Table VIII illustrates the university by school and the percentage of modules contributing to ESDGC and the STAUNCH© interpretation of the balance and strength of contributions. It is important to note that the software generates much data and that selected for inclusion throughout this paper are what have been the most useful during feedback sessions with management and teaching staff.

The findings of the audit were discussed with each school, the University’s Learning and Teaching Committee, submitted to the Higher Education Funding Council for Wales and subsequently the HEA. The HEA summarised all the Welsh submissions (HEA, 2009). Although findings were produced for the university as a whole and each school, it became apparent during school feedback sessions that the most useful interpretations were at module and programme of study level, as it is here that strengths and weaknesses are identifiable. Discussion also took place as to the interpretation of the criteria terms within different disciplines and the impossibility of the audit to capture all course content.



**Figure 4.**  
The strength of ESDGC  
contributions for each  
school at The University  
of Wales, Newport

Percentage of modules contributing to ESDGC	High	HSS (1, 94%)	NBS (1.30, 91%)
		NSE (1.05, 90%)	University (1.20, 88%)
			CCLL (1.11, 65%)
	Low	AMD (0.77, 53%)	
	Low		
	Contribution and balance to ESDGC		
			High

**Notes:** HSS: Health and Social Sciences; NSE: Newport School of Education; AMD: Art Media and Design; NBS: Newport Business School; CCLL: Centre for Community and Lifelong Learning; STAUNCH© interpretation – low contribution and balance: 0-1, relatively medium contribution and balance: 1-1.5 and relatively high contribution and balance: above 1.5

**Table VIII.**  
Summary of  
STAUNCH© findings for  
University of Wales,  
Newport

## 5. Discussion

The validity of STAUNCH©, as a successful auditing tool, was tested throughout the auditing process. The auditing process at the case study university highlighted strengths and limitations of applying such a rigid tool. All Welsh higher education institutions participated in the auditing process and much data were generated. All courses offered by the University of Wales, Newport, were audited for ESDGC content. The cross-cutting theme featured very strongly across all schools and was accounted for by the high number of joint courses offered. The strength of contributions, identified via the grading of the criteria varied between schools, with a brief mention of criteria arising frequently. More detailed explanations of ESDGC criteria content were also evident. The feedback process within the University at Newport provided useful insights into such strengths as identifying specific modules and programmes of study delivering ESDGC content and those where it was lacking and limitations, such as the practicalities of inputting such large series of data, the lack of detailed course content available to the researcher and the appropriateness of auditing the “offered” curriculum as opposed to the student experience.

The profile of the ESDGC agenda within the university was raised and consequently discussions regarding building on the findings and embedding ESDGC within the curricula are underway. Such developments reflected original objectives for the audit (Lozano and Peattie, 2009). Progress involves changes to curriculum concept paper guidelines to include prompts ensuring ESDGC content. Validation document templates have been amended with further prompts provided. A “Task and Finish Group” was established with a remit to identify existing university ESDGC activity, determine key priorities for the university, investigate methods of mainstreaming ESDGC activity including identification of possible funding streams to support ESDGC work and identify an appropriate management and support structure for ESDGC work. Workshops have been provided for teaching staff to support embedding ESDGC content within programmes of study. Evidence of similar progress emerged following the audit of the sustainability content of courses at the University of Gävle, Sweden, where the raised profile of sustainability, via the audit, stimulated staff to integrate sustainable development into their courses (Sammalisto and Lindhqvist, 2008). This illustrates some justification for conducting an audit of the curriculum. Lozano and Peattie (2009) acknowledged that STAUNCH© can “kick-start” sustainability curricula development efforts (Lozano and Peattie, 2009, p. 190). Yet it could be fair to suggest that many of the above developments may have emerged as a consequence of the high profile of ESDGC expected by the Welsh Assembly Government and the funding council, or by applying alternative auditing techniques and not simply a positive outcome of the STAUNCH© methodology.

Welsh higher education institutions continue to meet and discuss the way forward for ESDGC within the sector and whether the curriculum audit exists in isolation or will be revisited in later years is currently uncertain. Institutions might elect to do their own follow up audit in future. There could possibly be requirements determined by the Higher Education Funding Council for Wales to provide such auditing information in relation to funding awarded. Potential for utilising this audit as a baseline for comparisons with future audits would be influenced by any amendments to the initial audit procedure, classifications, scope of data collection and whether staff viewed the process as simply “box ticking”. Issues were identified during feedback from all Welsh universities including the concern that the audit results did not provide any indication as to the quality or effectiveness of the content. Also there is limited research on ESDGC, principally, the existing awareness of students as they enter higher education (HEA, 2009). Some research is underway to determine student and staff understanding of sustainability issues (Gray-Donald *et al.*, 2007). Owing to the particular emphasis the Welsh Assembly has placed on ESDGC within the Welsh Education System, it could be wise to ascertain student understanding of ESDGC as they enter higher education. Learning that has taken place during primary and secondary education could be captured and further developed. There is a strong emphasis on ESDGC within the secondary and further education sector in Wales.

Throughout staff feedback sessions, it became apparent that much ESDGC content was overlooked by the audit. Dissertations, student placements and additional content not accounted for within brief module descriptors was not assessed. The practicalities of including this data would be difficult, as dissertations are individual and it would be almost impossible to account every learning experience students encounter. ESDGC content can also creep informally into the curriculum (Cotton *et al.*, 2009). The method



of searching module descriptors provided an overview of the curricula offered at the university, but did not allow for the credit weighting given to the module or the number of students studying a particular programme of study to be taken into account. For example, some modules were taken by hundreds of undergraduate students whereas others were studied by fewer than ten students. Without allowing for this factor the impact, direct or indirect, of ESDGC course content was impossible to identify. Although the audit identified the curricula offered it may not have truly represented what was taught or the impact course content can have on student understanding and potential decision making.

Following the ESDGC audit, it was straightforward to identify programmes of study where targeted themes were evident and vice versa those for which it was necessary to ensure coverage existed. Therefore, it would be possible to apply this methodology when searching for evidence of other suggested themes, for example, gender or religion. Although Lozano and Peattie (2009) acknowledge the necessity to complement the audit with interviewing teaching staff to discover incorporation of required coverage, this would be very time consuming if all teaching staff were to be interviewed. Therefore, by identifying programmes of study that appear to lack required criteria from the audit this could result in discussions being targeted. Despite the shortcomings mentioned the STAUNCH© audit stimulated much discussion and provided a launch for further developments for ESDGC.

### *5.1 Recommendations*

The role of STAUNCH© as an auditing tool was scrutinised throughout the auditing process, following audit completion and the compilation of results by individual institutions and during all Wales ESDGC network discussions:

- A more appropriate approach may be to work from the student outwards; that is take each student's combination of modules for the current year. This would ensure the audit assessed the student experience as opposed to the "offered" curriculum. Also the total number of students studying each module needs to be factored into the process.
- A method to allocate credit weighting to each module during the analysis needs to be developed as currently the audit views 20 credit modules as equal to 30, 40 and 60 credit ones.
- In order for the results to prove meaningful for departments, as a whole, the software needs to allow for many more modules to be inputted per sheet.
- Only recording modules available in two or more schools would eliminate the over-emphasis of the cross-cutting criteria, due to the disciplinary grading of "1" for all modules taught on many joint degrees. This proved confusing with some courses apparently containing ESDGC content.
- If the audit is to be satisfied, it covers all the curricula much more detail than brief module descriptors is required; yet if more data need searching for content, it would require more time and funding to complete.
- Appropriate ESDGC pedagogical approaches, such as experiential learning, problem-based learning, group work and role play were not evidenced via the STAUNCH© audit, any possible future developments of the auditing procedure would benefit from acknowledgements of such approaches.

- The informal curricula, including extra-curricular activities, clubs and other experiences while studying in higher education, should be measured for ESDGC content if an assessment of social learning is to be incorporated into the whole student experience.
- Strategies to measure the quality and effectiveness of the curricula, therefore identifying impact on understanding, would indicate real progress in this area. This may involve structuring student and staff feedback for each module taught, conducted prior to studying a module and upon completion. However, there is danger of assessing and auditing too much, as opposed to participation in learning activities.

## 6. Conclusions

This paper evaluated an ESDGC auditing process, employing the University of Wales, Newport, as a case study. It discussed the methodology, utilising the STAUNCH© software, recounted the procedure, outcomes and recommendations for improvements. All Welsh universities carried out the audit, fulfilling a Welsh Assembly target within the action plan for higher education (Welsh Assembly Government, 2006). Findings from the STAUNCH© audit are informing the rewriting process of the Welsh ESDGC action plan. It has been proposed that it may be appropriate to baseline ESDGC content within institutions (HEA, 2009; SQW Consulting, 2009). Similar proposals emerged in the English and Scottish reviews of sustainability in higher education (Policy Studies Institute, 2008; Ryan, 2009).

Issues that have become apparent are concerned with “what will happen next?” Should there be another audit in the future? Is there a need to develop baselining criteria? And if baselines are introduced could STAUNCH© fulfil a role here? The Welsh Assembly and The Higher Education Funding Council for Wales continue to discuss future developments for ESDGC within higher education. The Welsh ESDGC network group bring together all Welsh higher education institutions as they debate the future agenda for ESDGC. It is apparent that due to the quantitative nature of the data required for environmental management systems, it can be measured, baselined and targets set with some degree of consistency within an institution and possibly between institutions. Within the higher education sector the Green Gown Awards (The Environmental Association for Universities and Colleges recognition of sustainability initiatives) and the People and Planet (a student action group) league table mean comparisons of ESDGC credentials exist. It is due to the potential for embedding ESDGC within the curricula that this paper materialised. Does it really matter where the motivation for action originates? There has been criticism of governments and funding councils for attempting to force the embedding of sustainability within higher education curricula, for instance via quality assurance measures (Knight, 2005). However, the criticism by Knight was the loss of higher education’s autonomy:

It is not the job of universities to promote a particular political orthodoxy; it is their role to educate students to examine critically policies, ideas, concepts and systems, then to make up their own minds (Knight, 2005).

Yet higher education institutions “are significant leverage points which both reflect and inform social mindsets” (Cortese, 1999, p. 9). Arguably it is time we experience a radical transformative paradigm shift in educational values as proposed by Sterling (2001).

“Should universities be like businesses or is the role of universities to remind us that there is more to life than making money?” (Cullingford, 2004, p. 21).

A major strength of the funded ESDGC audit in Wales was its success in raising the profile for ESDGC within a relatively short period of time. The language associated with ESDGC is more widespread and understood within the institution. The importance of the curriculum has been reinforced and people alerted to the agendas of the Welsh Assembly and Higher Education Funding Council for Wales. The audit prompted development of university initiatives to drive ESDGC forward at Newport and as part of the ESDGC network group. However, the raised profile within course development and consequently the curricula offered to students is where the key to pushing the ESDGC agenda forward lies. Owing to external pressure applied via the audit, rewrites or at least modifications to course content are evolving. One element of such modifications will hopefully be more emphasis given to the interdisciplinarity potential to deliver the ESDGC agenda and as a result higher education institutions contribute with increasing momentum to the crucial role they have to play in educating students to participate in a decision-making society. If the STAUNCH© tool is to continue to perform a role in assessing and recording progress in ESDGC then the key recommendations of measuring the student experience, incorporating module credit weighting within the analysis, allowing for greater data sets to be inputted and developing measures to assess quality and effectiveness need to be addressed.

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### Further reading

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