Education for Sustainable Development

Sustainability Literacy at Manchester Metropolitan University

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Executive summary

Introduction and context

This report presents the findings from a research project carried out amongst MMU academic staff and students as well as external employers, on attitudes towards knowledge and skills associated with Education for Sustainable Development (ESD) - more specifically Sustainability Literacy.

ESD is increasingly becoming an important agenda item within higher education. This is reinforced internationally through United Nations Decade of Education for Sustainable Development 2005-2014 as well as nationally through HEFCE’s vision of the HE sector playing an important role in the move towards a sustainable society. However, ESD does not only receive top-down support, research from NUS has highlighted an interest amongst UK students to develop skills for Sustainable Development. ESD is also becoming increasingly important in terms of graduate employability. Research into the links between employability and sustainability has highlighted a demand from employers for graduates with specific sustainability skills.

Aim of research

The aim of this research was to find out if there is a support for ESD amongst MMU students and academic staff. In addition to this, the research aimed to explore employers, student and academic staff attitudes towards ESD in terms of graduate employability.

Method

The research was carried out as three quantitative questionnaire-based online surveys aimed at students and academic staff at MMU as well as employers. The surveys were constructed around HEA’s description of skills and knowledge necessary for a sustainability literate graduate (see page 7). In total, 308 students, 103 academic staff and 17 employers completed the surveys.

Findings

Overall, the research indicated a support from students to embed sustainability in their courses. Consistently, students valued sustainability literacy skills, knowledge and abilities higher than they perceived sustainability literacy was being covered in their courses. In terms of academic staff, a majority though it was important that students learn about sustainability literacy through their courses.

In terms of employability, employers valued sustainability literacy skills and knowledge higher than both students and academic staff. In relation to this, the research indicated an employer demand for sustainability literate graduates that currently is not being met.
Recommendations:

- Communicate the research findings across MMU.
- Further mapping and exploration of how sustainability literacy skills are already being embedded in curriculum.
- Support university-wide initiative to map and embed sustainability in the curriculum.
- Conduct further research into the links between employability and sustainability.
1. Introduction:
This report presents the findings from a research project carried out amongst MMU’s academic staff, students and employers on attitudes towards knowledge and skills associated with Education for Sustainable Development (ESD) - more specifically Sustainability Literacy.

1.1 Context:
Education for Sustainable Development (ESD) is increasingly becoming an important agenda within higher education, both in the UK and internationally. Internationally, this is reinforced through the United Nations Decade of Education for Sustainable Development 2005-2014, were Universities have been given an important role to function as platforms for research and learning for sustainable development (Dawe et al 2005). On a national level it is supported by HEFCE’s vision of the higher education sector becoming a major contributor to society’s efforts of achieving sustainability in the future through “…the skills and knowledge that its graduates learn and put into practice, its research and exchange of knowledge through business, community and public policy engagement, and through its own strategies and operations.’ (HEFCE 2009:3)

The ESD agenda is also increasingly becoming linked with graduate employability. As a response to environmental and social/economic issues such as climate change and the current economic crisis, governments are readjusting their policies in order to adapt to a changing society. As an example, the current UK government seek to support a move towards a low carbon, green economy (Sterling 2012). This changing world scenario implies that future graduates will need to be equipped with specific skills and knowledge useful for a sustainable future.

1.1.1 Student and employer attitudes towards ESD in the UK

Overall, research around student and employer attitudes towards ESD is limited. However, longitudinal research conducted by NUS has highlighted an interest amongst UK students to develop skills for sustainable development (SD). For example, over two thirds of students want SD to be covered in their university courses. Furthermore, 60% of students want to learn more about SD as well as over 80% believe that universities should actively incorporate and promote SD (Drayson et al 2012).

In terms of the relationship between sustainability and employability, research conducted by Business in the Community suggests that businesses are increasingly seeking graduates with sustainability skills (BITC 2010 quoted in Sterling 2012). Furthermore, research by Cade et al (2008) suggests that the trend towards more responsible employers are affecting the demand for more specific competencies from recent graduate recruits.
1.1.2 MMU and ESD.

ESD is extensively supported through several policies at MMU. Drawn upon the Student Experience element in the Corporate Strategy, MMU’s Strategy for Learning, Teaching and Assessment has embedded sustainability in one of its main principles in relation to the curriculum (MMU 2013). The sustainability aspect of the curriculum is further articulated in MMU’s student charter - the MMU Commitment- which states that environmental sustainability should be at the heart of the curriculum in order to enable students to “live and work sustainably” (MMU 2013). In relation to this, sustainability outcomes have also been incorporated within the Enhancing Quality and Assessment for Learning (EQAL) course development process (MMU 2011). Furthermore, ESD is also a policy area in the university’s Environmental Policy.

In an extra-curricular context, sustainability, alongside employability and community, forms a corner stone in MMU’s extra-curricular employability scheme, MMU Futures (MMU 2013).

1.2 Aim and objectives of the project:

As illustrated above, ESD is supported through policies at MMU, therefore the aim of this research is to find out if there is a support for ESD amongst MMU students and academic staff. In addition to this, the survey aim to explore employers, students and academic staff attitudes towards ESD in terms of graduate employability.

The objectives of this research are to carry out three separate online surveys aimed at students, academic staff and employers.
1.3 Definition of ESD and Sustainability Literacy:

Just as Sustainability and Sustainable Development, ESD is a contestable and complex concept that can be difficult to pin down. However, Sterling (2012) describes ESD as: “...the kinds of education, teaching and learning that appear to be required if we are concerned about ensuring social, economic and ecological well-being, now and into the future.” (Sterling 2012:8)

The different perspectives and insights related to ESD have evolved into the concept of “sustainability literacy”. Due to the many ways and possibilities to interpret ESD and sustainability literacy, this report refers to HEA’s (2006) description of skills and knowledge necessary for a sustainability literate graduate:

- An appreciation of the importance of environmental, social, political and economic contexts for each discipline.
- The ability to identify, understand, evaluate and adopt values beneficial to sustainability.
- A broad and balanced foundation knowledge of sustainable development.
- The ability to bridge the gap between theory and practice.
- A high-level of personal & professional self-reflection.
- Problem solving skills for complex real-life problems.
- The ability to initiate and manage change.
- Creative & holistic thinking for making critical judgements.
- The ability to practice creatively in inter-disciplinary teams.
2. Method

This research project was conducted as part of a one-year internship (2012-2013) with MMU’s Environment Team and developed in collaboration with academics from the School of Science and the Environment.

The research was carried out as three quantitative questionnaire-based online surveys aimed at students and academic staff at MMU as well as employers. The surveys were constructed and based on HEA’s description of skills and knowledge necessary for a sustainability literate graduate (see page 5).

The student survey was extensively piloted on students at the school of Science and Environment whilst the staff survey was circulated amongst a selected group of academic staff at MMU. Various employers associated with the Environment Team helped to pilot the employer survey. The student and staff surveys were launched in April whilst the employer survey was launched in the beginning of May. All three surveys were open for four weeks.

In order to get the highest possible response rate, the surveys were promoted through various channels and contacts at MMU. It is therefore not a random sample. The student survey was promoted through the Student Union’s website as well as MMU’s main student website, the Student Hub. Various faculties were also approached with the request to send out blanket emails to students. This resulted in three faculties (Faculty of Health, Psychology & Social Care, Faculty of Education and Faculty of Art& Design) sending out blanket emails to their students. The staff survey was promoted through an all-staff blanket email sent out via the Press and Public relations officer. The employer survey was promoted by an email, sent out to the recruitment departments of the 10 biggest employers in Manchester, this included the Co-operative, Timpson’s and Siemens. It was also promoted via a contact database at MMU’s Business school, MMU Alumni’s social media as well as direct emails to existing business contacts.

All three surveys were incentivised with the chance to win Amazon gift vouchers (to a total value of £500) and the academic staff and employer surveys had the option of donating the prize-money to a charity of the participant’s choice. In total, 308 students, 102 academic staff and 17 employers completed the survey. After the responses were collected, the results were collated into descriptive statistics.

2.1 Limitations

The main limitation of this research was the low response rate of each of the three groups. Thus, it cannot be treated as a representative sample of academic staff, students and employers views of ESD but merely as a snapshot of attitudes.

Also, since the survey was aimed at such a wide audience of students’ academic staff and employers, it was decided to not use any definitions on environmental, social and economic issues. This meant it was up to the individual completing the survey to interpret what the various issues meant.
3. Results

3.1 Sustainability literacy in curriculum - the overall picture.
In this section, perceptions of the extent sustainability literacy is already covered in the university is compared with attitudes towards students learning about sustainability literacy in their courses.

3.1.1 Student attitudes towards learning about social, environmental and economic issues vs. perceived extent covered.
Overall, a majority of students think it is important to learn about social, economic and environmental issues through their courses (fig 1). However, the percentage of students who perceive they have been taught about these issues through their courses are consistently lower across all three areas. This gap between perceived coverage and importance could indicate a demand from students to learn more about social, environmental and economic issues through their courses.

Students perceive that environmental issues are not being covered as widely as social and economic issues. Equally a lower percentage of students think it is important to learn about environmental issues compared to social and economic issues. This could indicate that environmental issues are regarded as a specialised area of learning rather than a norm compared to economic and social issues. However, since environmental issues has got the widest gap between the percentage of students who find it important and students who think it has been covered in their courses, it still reinforces the need to embed knowledge about environmental issues in the curriculum.

![Figure 1 Student attitudes towards learning about social, environmental and economic issues vs. perceived extent covered.](image-url)
3.1.2 Students: Importance of developing skills and knowledge associated with sustainability literacy vs. perceived extent covered in courses.

Similar to previous findings, there is a consistent gap between the extent students think they are developing skills, knowledge and abilities associated with sustainability literacy through their courses, compared to how important they think it is to learn about it.

However, transferrable skills are perceived as more covered by students compared to more sustainability specific skills (“Broad and balanced foundation knowledge of SD” and “Evaluate values beneficial to SD”). This could indicate that transferrable skills are well embedded in University teaching already whilst more sustainability specific skills and knowledge needs to be further embedded (fig 2).

![Graph showing the comparison between importance and extent covered for various skills and knowledge areas associated with sustainability literacy.](image)

**Figure 2 Students: Importance of developing following skills and knowledge associated with sustainability literacy vs. perceived extent covered in courses.**
3.1.3 Academic staff; importance of students learning about social, environmental and economic issues through university vs. extent covered in their courses.

A majority of academics participating in this survey think it is important for students to learn about social, economic and environmental issues in their courses (fig 3). The pattern of coverage is similar to students; environmental issues are covered to a lesser extent compared to economic and social issues. The small gap between the extent staff is covering the topics compared to their perceived importance could be explained by academics only teaching topics they find important themselves.

Figure 3 Academic staff; importance of students learning about social, environmental and economic issues through university vs. extent covered in their courses.
3.1.4 Academic staff; importance of students developing sustainability literacy skills and knowledge vs. extent covered in courses.

According to this survey, academics are good at covering transferable skills whilst more sustainability specific skills are not as widely covered or regarded as important (fig 4).

Reasons to this could be that academic staff does not recognise the sustainability context of their discipline or does not label some of their teaching as sustainability teaching even though it is.

This finding highlights the need to map the curriculum in order to identify where sustainability teaching is already taking place, as well as highlighting areas where it can be embedded. However, more importantly, it also demonstrates the need to embed sustainability into Continuing Professional Development in order to provide space and support for academics to explore how sustainability relates to their disciplines.

![Chart: Academic staff; importance of students developing sustainability literacy skills and knowledge vs. extent covered in courses.](image)

*Figure 4 Academic staff; importance of students developing sustainability literacy skills and knowledge vs. extent covered in courses.*
3.2. Sustainability Literacy in the curriculum- faculty variations

In this section, three selected areas of sustainability literacy has been analysed in terms of coverage an importance on a faculty basis. The three areas of sustainability literacy chosen for this are:

- Environmental issues
- A broad and balanced foundation knowledge of sustainable development.
- The ability to identify, understand, evaluate and adopt values beneficial to sustainability.

Below follows a breakdown of numbers of staff and students per faculty participating in this survey.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Number of students completing survey</th>
<th>Number of staff completing survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty of Art &amp; Design</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Faculty of Business and Law</td>
<td>42</td>
<td>23</td>
</tr>
<tr>
<td>Faculty of Education (Crewe)</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Faculty of Education (Didsbury)</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>Faculty of Health, Psychology &amp; Social Care</td>
<td>59</td>
<td>11</td>
</tr>
<tr>
<td>Faculty of Humanities, Languages &amp; Social Science</td>
<td>47</td>
<td>14</td>
</tr>
<tr>
<td>Faculty of Science &amp; Engineering</td>
<td>40</td>
<td>22</td>
</tr>
<tr>
<td>Hollings Faculty</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>MMU Cheshire</td>
<td>41</td>
<td>10</td>
</tr>
</tbody>
</table>
3.2.1 Students
The extent to which the three areas of sustainability literacy are being covered, as well as their perceived importance, varies greatly between faculties (fig 5,6,7). However, across all faculties, there are a higher percentage of students who think it is important to learn about the three areas of sustainability literacy compared to the number of students who perceive it is already being taught. This could indicate that despite the variations between the faculties, there is still an interest from students in each faculty to embed more sustainability literacy in the curriculum.

Figure 5 Students; Importance of developing "The ability to identify, understand, evaluate and adopt values beneficial to sustainability." vs. perceived extent covered per faculty.

According to this survey, there is only one faculty where a majority of students think their courses are helping them to develop “A broad and balanced foundation knowledge of sustainable development” (Business & Law 59.5%) (fig 6). At the same time, there are four faculties where a majority of students believe they have been taught about environmental issues through their courses (Business & Law 64.3%, Education in Didsbury 50%, Science & Engineering 55% and Hollings 61.9%) (fig 7). This could either indicate that sustainable development is interpreted differently depending on both individuals and their area of study, or it could also indicate that sustainable development is not taught as a holistic concept, rather only in fragments. This could provide a case for establish a common understanding of what is meant by sustainability in order to use the terms consistently across MMU.
Figure 6. Students: Importance of developing "A broad and balanced foundation knowledge of sustainable development" vs. perceived extent covered per faculty.

Figure 7 Students; Importance of learning about environmental issues vs. perceived extent covered per faculty.
3.2.2 Academic staff

According to this survey, the extent the three selected areas of sustainability literacy are being covered, vary greatly between the faculties. Overall, the results indicate some level of interest amongst academics in most faculties to cover the three areas of sustainability. However in three of the faculties, the percentage of academics who find it important to cover environmental issues and “..values beneficial to sustainability” is lower than the percentage of academics who cover it (fig 8, 10). This could indicate a certain resistance amongst some academic staff towards embedding sustainability in the curriculum. Due to the contestable nature of sustainability, a certain level of negative attitudes was to be expected.

Figure 8. Academic staff; Importance of students learning about environmental issues vs. extent covered per faculty.

Figure 9 Academic staff; Importance of students developing "A broad and balanced foundation knowledge of sustainable development." vs. extent covered per faculty.
Figure 10 Academic staff; Importance of students developing “The ability to identify, understand, evaluate and adopt values beneficial to sustainability” vs. extent covered per faculty.
3.3 Employability and Sustainability Literacy
The following section presents the results relating to student, academic staff and employer attitudes towards sustainability literacy in terms of employability. Below follows a summary of the types of products and services the various businesses offer.

- Food retail, funerals, banking, pharmacy, farms, legal services
- Construction
- Broadcasting and content production
- Building Services Consultancy
- Telephony, IT
- Support to other charities, campaigning, volunteering, engagement
- Multi-disciplinary consulting services, from engineering through to management consultancy
- Education (HE)
- Sustainability consultancy
- Climate Change Consultancy and Advocacy
- Supporting older people
- Voluntary sector support, development and research

Figure 11 Size of organisations participating in the survey (n=17)
3.3.1 Comparison between student, academic staff and employer attitudes towards sustainability literacy in terms of employability.

According to this survey, there is a difference between employer, staff and student attitudes towards the importance of sustainability literacy in terms of employability. Overall, a higher percentage of employers view knowledge, skills and abilities associated with sustainability literacy as important in terms of employability compared to students and academics. The only exception to this was “The ability to bridge the gap between theory and practise” and “The ability to initiate and manage change” (fig 15).

A majority of employers taking part in this survey, (82.4%), believe that knowledge of environmental, economic and social issues are equally important in terms of employability. In contrast to this, knowledge about environmental issues is viewed by a lower percentage of student and staff as important compared to social and economic issues (fig 12).

Figure 12 Importance of knowledge of environmental, social and economic issues in terms of employability.
In general, employers valued transferable sustainability literacy skills such as “Problem solving skills...” and “Creative and holistic thinking....” (fig 13) as most important in terms of employability compared to more sustainability specific skills (fig 14). A possible explanation to this is that transferrable skills applies to most job roles whilst there might still be a perception amongst some employers that sustainability specific skills are not relevant in every job context. Nonetheless, these results supports the case for supporting students to become sustainability literate in order to increase their employability.

Figure 13 Importance of sustainability literacy skills in terms of employability.

Figure 14 Importance of sustainability literacy skills in terms of employability.
Figure 15 Importance of sustainability literacy skills in terms of employability.
3.3.2 Employer perception of students understanding of sustainable development and future demand for sustainability literate graduates

In addition to previous findings, the research indicated that employers believed there is a gap between “supply and demand” of sustainability literate graduates. A majority of employers believe that students do not understand social and environmental sustainability. At the same time 53% (n=17) of employers are looking to employ graduates in the future were social and environmental responsibility is part of the selection criteria (fig 16). This finding reinforces the importance of sustainability in terms of employability. Since the sample of employers was small, it would be useful to explore this on a larger scale.

Figure 16. Employer perception of students understanding of sustainable development and future demand for sustainability literate graduates (n=17).
4. Conclusion

Overall, the research indicated a support from students to embed sustainability in their courses. Consistently, students valued sustainability literacy skills, knowledge and abilities higher than they perceived sustainability literacy was being covered in their courses. Although attitudes towards sustainability literacy varied greatly between faculties, the survey indicated an interest from students in all faculties towards learning more about it through their courses.

In terms of academic staff, a majority though it was important that students learn about sustainability literacy through their courses. However, the survey also indicated that some academic staff held negative views towards sustainability literacy. Due to the contestable nature of sustainability, this was to be expected.

In terms of employability, the main theme found in this research was that employers seem to value skills, knowledge and abilities associated with sustainability literacy higher than both students and academic staff. In relation to this, the research indicated a gap between employers demand for sustainability literate graduates and the provision of graduates with relevant sustainability literacy knowledge and skills. This could indicate an increased demand in the future for students to possess sustainability skills.

The main conclusion to be drawn from this research is that ESD is not only supported through policies at MMU but also by both students and academic staff. Although teaching relating to sustainability literacy is already taking place to various extents at MMU, there is a support amongst students across all faculties to further embed sustainability literacy into the curriculum. The case for embedding sustainability into the curriculum is further strengthened by the fact that employers find sustainability literacy important in terms of graduate employability.
5. Recommendations:

Communicate the research findings across MMU:

Despite the small sample size, the research provides information relevant for every faculty. The research findings could also form basis for discussions regarding best ways of embedding sustainability into every faculty.

Further mapping and exploration of how sustainability literacy skills are already being embedded in curriculum:

This research only provides a limited snapshot of student’s perception of sustainability literacy within the curriculum. Therefore, in order to gain insight into the extent sustainability is being taught already at MMU, a full audit of curriculum needs to be carried out.

Support university-wide initiative to map and embed sustainability in the curriculum:

As this research has highlighted, there is a support amongst student, academic staff and employers to further embed sustainability in the curriculum. Thus, it would be useful to identify were support is needed in order to achieve this.

Conduct further research into the link between employability and sustainability:

Due to the small sample size, it would be useful to carry out further research into employers attitudes towards sustainability in order to further establish the links between sustainability and employability.
References


Manchester Metropolitan University (2013) The MMU Strategy for Learning, Teaching and Assessment [online] (accessed on 17/12/2013) http://www.celt.mmu.ac.uk/ltastategy/

Manchester Metropolitan University (2013) The MMU commitment [online] (accessed on 17/12/2013)

Manchester Metropolitan University (2013) MMU Futures [online] (accessed on 08/10/2013) http://www.mmu.ac.uk/students/futures/
http://www.heacademy.ac.uk/assets/documents/esd/Future_Fit_270412_1435.pdf