RESEARCH AND INNOVATION IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

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IMPRINT

Research and Innovation in Education for Sustainable Development. Exploring collaborative networks, critical characteristics and evaluation practices.

January 2016
ISBN: 978-3-902959-08-9

Publisher:
Environment and School Initiatives - ENSI, ZVR-Zahl 408619713, Vienna, Austria
Editors: Wim Lambrechts and James Hindson
Proofread: Wim Lambrechts
Assistance: Günther Pfaffenwimmer
Lay-out: Walter Reiterer

CoDeS has been funded with support from the European Commission. This publication of CoDeS reflects the views only of the author, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.
You can’t have taught them properly - or what happens when Education for Sustainable Development doesn’t produce the results we expect

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ABSTRACT
This reflective chapter describes a case study in which sustainability issues were taught as part of a geography course in a secondary school in England. It firstly describes a decision making activity undertaken with 16/17 year old students that examined the topic of fracking. It then describes the reaction of education for sustainable development (ESD) practitioners to the outcome of this activity. After considering all the evidence the students decided to support fracking and the ESD practitioners were horrified by this outcome. The third part of this chapter reflects on the implications of this reaction and considers whether ESD practitioners are only committed promoting student centred approaches when it brings about the specific lifestyle and behaviour considered to be sustainable by the ESD practitioners themselves. In other words, unthinking behaviour management is really at the heart of much ESD rather than education and thinking critically.

KEYWORDS
Bias, Controversy, Fracking, Geography, Transformative

INTRODUCTION
The author of this reflective chapter is a Geography teacher of students aged 14-18 and like many teachers throughout Europe is more than slightly constricted by the demands of an examination orientated curriculum. In England this is the General Certificate of Secondary Education (GCSE) taken by students aged 16, and the AS and A2 levels taken by students aged 17 and 18. Five or more GCSE’s at grades A-C are usually required for acceptance on an A Level course, and A Levels are required for entrance to University. They are important examinations for students to pass at the required grades and hence student and parental expectations are understandably high. Partly because of this, opportunities for curriculum flexibility and innovation are relatively low as teaching time is limited and in the eyes of some “not to be wasted” by taking too much time teaching a topic.
Despite this expectation, learning and thinking about sustainability is integrated into the teaching of different topics as much as possible. And being fair, the Geography curriculum does give a good number of opportunities to do so, especially in modules such as Energy, Population and Development and Globalisation. Having said that, the syllabus also takes a relatively conservative approach to sustainability and development and follows the common approach of “business as usual but greener” rather than giving any real intellectual challenge to the current way of doing things. Answers to examination questions, however, do require students to discuss and evaluate and be critical, and so there are opportunities to engage students in some difficult and controversial issues. That is the background to the activity described in this chapter related to the module on Energy for the AS Geography syllabus and aimed at 16/17 year old students.

THE CASE OF FRACKING

One requirement of the module is that students look at the “environmental impacts of energy use” and within this they have to consider at the “effects of extracting energy raw materials” (AQA, 2009). The syllabus gives the teacher freedom to deliver this concept in any appropriate way and so a unit was devised to enable to students to cover the concepts through looking at the issue of fracking (Stephenson, 2015). This was chosen because globally, fracking is very much in the news being credited with the fall in oil prices that has taken place over the past years. Fracking is also a hugely controversial issue in the UK with most communities being opposed to the idea but the government and business seriously considering allowing it. Hence the topic allowed students to be introduced to aspects of the economics and geopolitics of energy – both other concepts that are on the curriculum.

The activity involved the ten students being divided into five groups and provided with data about the fracking process from different sources, some ‘for’ and some ‘against’. They were also given information about the need for energy, where it might come from, together with global development and geopolitical issues. In addition there was time for them to search for other data on the web. After studying the data the groups of students had to play different roles using the same data, and each group had to produce a two page report on the advantages and disadvantages of fracking, their recommendations and a short power point presentation. The groups represented a local community council, a national environmental non-governmental organisation (NGO), a team of energy experts from a University, an energy company wanting to undertake fracking and a group of young people (being themselves!). The groups were given two hours of lesson time to prepare their report.
and presentation and in the third lesson, present their reports. Two parents involved in the energy business were invited to read the reports, listen to the presentations and make comments. One parent is involved in the fracking business through manufacturing the clay liquid used to bring the gas to the surface, whilst the other is involved in the renewable energy business, largely through selling solar panels. So – what happened? In the research lessons the students were left very much to their own devices and asked for support only when they needed clarification or explanation of the information they had been given or found for themselves on the web. In the presentation and debate the groups were judged by the parents, by their teacher and by each other using different criteria. The results were interesting. All the groups except the national environmental organisation were generally in favour of fracking but for different reasons and to different degrees. Table 1 provides an overview of the results of the assignment.

<table>
<thead>
<tr>
<th>National Environmental NGO</th>
<th>Were against on the grounds of possible pollution to water sources and destruction of the countryside to extract the gas. Recommended more investment in renewable energy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Energy Experts</td>
<td>Were on balance, for fracking, though there were disagreements. They considered that from a scientific point of view there were risks but they were the same as other energy sources, and could be made safe. They also recommended that more investment in renewable energy was a better long term solution.</td>
</tr>
<tr>
<td>Energy Company</td>
<td>Were for on the grounds that the UK needs cheap energy and that it would generate local and national income and support local economies.</td>
</tr>
<tr>
<td>Local Community</td>
<td>Were for because they believed that the development would bring employment generally the UK and the area and provide cheaper electricity. Assurances had been given about pollution and the government had promised financial support to local communities that agreed to fracking.</td>
</tr>
<tr>
<td>Young People</td>
<td>Were for fracking. Although they recognized the dangers they agreed with the scientists that they could be overcome. Interestingly they also thought that globally cheap energy was a good idea especially for poor countries in Africa that needed to import oil to develop.</td>
</tr>
</tbody>
</table>

Table 1. Outcomes of the student assignment
The discussions of the view points and presentations were heated at times but there was no doubt that the overall conclusion was that fracking should go ahead under some form of strict control and that the government should make more efforts in encouraging energy efficiency and invest more in renewable energy at the same time. This was a surprising result as the expectation was that the students would probably disagree with fracking. Wals (2010) described a case that deconstructed a meal of a popular fast food chain, with one of the outcomes being that the students had profound concerns about the sustainability of providing food in this way (Wals, 2010; Sriskandarajah et al., 2010). A similar reaction was expected to fracking!

**ESD GONE WRONG**

The author took the opportunity to describe this activity as part of a panel discussion at the final CoDeS Conference and was astounded by the reaction. One of the panel presenters came up with the statement that if the students agreed with fracking then “You can’t have taught them properly” or words to that effect. Apparently, according to the University Professor critic, after doing an activity about fracking, the students should end up disagreeing with fracking and as these students ended up supporting the process then the teaching had obviously failed. This comment and reaction led to an exciting few moments of further debate about a number of critically important issues for ESD.

The author was astounded for a number of reasons.

The first was that the Professor seemed to have the view that teachers just “teach”. Of course, sometimes just “teaching” takes place, if by teaching is meant controlling the knowledge, understanding, skills and values that students have to then “learn”. Depending on the topic, if students don’t know about something then it is taught to them. But “teaching” is also about structuring the learning process of discovery and that’s what this lesson was all about. The 17/18 year old students consulted during the process for clarification and explanation when needed but generally had the skills to construct their own learning about the topic (Wals, 2010). The general conclusion was that they did this pretty successfully and the two expert parents were also impressed with the level of knowledge that the students showed in their reports and presentations.

Secondly, there was the implication that somehow teaching should have the purpose of ensuring that students disagreed with fracking. This assumption is an especially worrying one not just because of the implication that an ESD University
Professor and the ESD community at large are the guardians of “right” knowledge, but that teaching should be designed, not to help students learn about a controversial issue and make up their own minds, but manipulate them into making a particular decision. When reviewing this activity against the eight ESD competences described by Sterling (1999) and the OECD (Stevens, 2014) it seems that the lesson touched on most of them: interdependence, citizenship, diversity, the needs of future generations, quality of life, uncertainty were all covered within the context of what was thought by all those involved to be a pretty good decision making activity (Sterling 1999; Stevens 2014). What more could have been done? Thankfully, there is no competence which says “Listen to your teacher and agree with his viewpoint” though maybe that’s what some of the critics really wanted.

But perhaps the discussion highlights a difference between the purpose of education, learning and the role of the teacher in a school and at a University. A University Professor (and NGOs come to that) can bias their learning towards a particular outcome quite happily – and often do. It is expected that the Worldwide Fund for Nature (WWF), Greenpeace and other NGO’s will disagree with fracking. To some extent it could be argued that that’s their job. Students at University usually have the maturity and confidence to disagree with lecturers. Teachers working with younger students especially on controversial topics have a different set of responsibilities and hence a different way of approaching learning. Students often believe what their teachers are telling them because despite all the progress and innovative in learning, this is still the general approach. This topic could quite easily have involved power point presentation and some notes on fracking considering the pros and the cons and then coming to the conclusion that fracking is wrong. No doubt most of them would have then adopted this viewpoint to a greater or lesser extent. However, in this activity the role of the teacher was different. It was to honestly introduce students to a broad range of ideas and support them in becoming “critical thinkers”, because it is critical thinkers that the world will need if we are to live sustainably in the future.

At this point it is worth the author confessing a personal disappointment that the students agreed with fracking, but also being thrilled at the level of thinking that some showed in making their decision. To be able to see the relationship between oil prices and the ability of countries in Africa to take advantage of lower oil prices to develop more effectively is a high level of thinking. One student even said that “lower oil prices are for better at encouraging sustainable development in Africa than an increase in aid budgets”. From a 17 year, that’s not a bad analysis.
So the activity raised concern about the ESD community’s honest commitment to student centered learning, but it also raised another worry, and that is about the content and approach of ESD and in particular, the apparent dislike of new technology and technological change as a way of bringing about sustainability. More emphasis is placed on changes in values that lead to changes in behaviour and reducing consumption as the way forward. Much of the energy of ESD practitioners is placed on developing resources and campaigns that aim to do just that. This emphasis is worrying not least because of the double standards that ESD often displays. For example, we are all happy to use our tablets and other communication wizardry despite the fact that we know for certain that the planet is being destroyed through the metals used in their making and possibly lives are destroyed in the factories that make them. We are happy to fly to conferences to listen to lectures on climate change. Yet we are not happy about a technology that has the potential to open energy reserves to communities not just in rich western countries but also low income countries as well. Had ESD been around during the industrial revolution two hundred years ago perhaps we would have been against that as well and then where would be now? This is somewhat of a rant and a hobby horse, but there must be a grain of truth somewhere in all this thinking? If the management maxim that “we do what we see our leaders doing and not what we hear them saying” is true then ESD needs to give itself a critical dust down in terms of our approach to sustainability as well as approaches to learning.

ENCOURAGING STUDENTS

So what should be done to help students think more sustainably and achieve a sustainable world?

Well, one option would be just to tell them what’s right and wrong, assuming teachers know this. This is probably not an acceptable option. The author believes that the first key task is to encourage students to constantly challenge thinking and encourage them to constantly ask questions when presented within information:

- Where did this information come from?
- Is this true?
- How trustworthy is it?
- Is it true but not the full picture?
- How can I find out?

And then when students come to their own conclusions, challenge these as well. Students should especially challenge information when it comes from a source with
a specific view to promote be that business or the environment. A younger group of students have recently completed a module on the clothing industry and hardly any of the information from NGOs say anything positive about the conditions in clothing factories in China. Reading other books on the topic however, it seems that many of the girls moving from villages to work in these factories feel that their quality of life is much better than it was in rural China and that many companies are making real efforts to make things better. Eco fashion is all well and good but 15 year old girls don’t wear woolen shawls hand-knitted by a women’s cooperative in Peru. They go to low cost fashion chains to buy T shirts for 5 EURO. Challenging the data and coming up with alternative questions and viewpoints is something that ESD should enable all students to do.

And secondly, this challenging needs to be done within the context of a positive future. One of the issues facing young people is an understanding that they don’t know what the future will be like. The great problem is that most people tend to think that the future is going to be like a bigger and possibly better version of the present. However, history tells us that this is rarely ever the case. The future to some extent is unpredictable, uncertain and potentially dangerous, exciting and full of opportunity all at the same time. We are preparing students to live in this world in a sustainable way and so it is precisely these critical and creative thinking skills that will bring about sustainability. I am always motivated by the fact that a positive view of the future is the way forward for change rather than a negative one and I believe that this is where ESD has been going wrong and to be honest – where the Decade of Education for Sustainable Development (DESD) has gone wrong.

In particular there is a need to be more positive about technologies and welcome more of them. As has been said, the ESD community seems to have a great dislike of technology and the reliance people place on it to solve our sustainability challenges. At the back of many people’s minds is a love of small rural communities, despite the fact that most educators don’t live in places like this. Now whilst in principle it is right that we should not knowingly live unsustainable lifestyles and then just hope that technology will solve the problems, properly designed technologies are making and will continue to make the world a better place. Let’s face facts, everyone reading this will have a smart phone or one kind or other, one of the most environmentally destructive technologies on this planet, and live relatively comfortable lives surrounded by all those technologies that we love to challenge.
So overall, despite agreeing with fracking, the author firmly believes that the students who went through this learning process are better prepared for the future than students who maybe unthinkingly disagree with fracking and just toe the conventional ESD line!

REFERENCES


