YOUNG PEOPLE AND THE CIRCULATION OF ENVIRONMENTAL KNOWLEDGES: a summary document

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The Project: aims and objectives
Understanding the relationships people have with the environment is a key concern within geography. This is especially pertinent in an era of environmental uncertainty where the need to look for more sustainable lifestyle choices is becoming ever higher on the political agenda. With this need for change, governments and NGOs alike have consistently turned to education as a way of engaging the public and encouraging all levels of society to take environmental responsibility. However, while education strategies and communication models have been used, the processes that are actually involved in learning from, and about the environment, have been taken for granted. This research investigates these processes and highlights the specific context of young people learning about the environment whilst visiting a botanical garden. Findings point to a need to reassess our delivery and communication of environmental knowledges (as in different types of knowledge Ed) to young people in order to best engage, excite and empower future generations about the environment, a task ever more important as Education for Sustainable Development takes a foothold in our National Curriculum.

In order to think about how young people acquire their environmental knowledges three models of communication were used as a framework for investigation – the deficit model (used by governments and NGOs in many communication strategies worldwide), risk society thesis and aesthetic reflexivity. These three models offered doorways through which to think about processes regarding the delivery of environmental knowledges, the role of trust in constructing environmental understandings, and the importance of non-cognitive learning experiences.

Methodology
The research used a case study sited at the Birmingham Botanical Gardens and Glasshouses. A botanical garden was chosen as a focus for research because of their long history of environmental education. This particular garden offered the opportunity of working at a well-established environmental education institution, with experienced environmental education officers, who provided environmental education resources for young people visiting with schools, families and leisure groups.

The study highlights the practices of these three visitor types. Liaising with five schools, five families and five leisure groups (over 150 young people between 7 and 11 year olds) a three-stage research programme was undertaken. Each interaction with the various groups followed a set routine. Initially a meeting with the group was made in order to introduce the research to those involved. The trip was
discussed and what their expectations were. A visit to the Garden was then arranged and observed in order to note the embodied interaction with the Garden environment. Notes were made about plants that were touched, pointed at and interacted with.

**Fig 1  Note taking**

![Note taking image](http://www.geography.org.uk/eyprimary/primaryresearch/researcharticles/)

After these visits, individual and small group meetings were undertaken to discuss experiences of the Garden and wider environmental attitudes. These offered a supportive atmosphere in which young people could discuss their experiences. In focus groups of between four and six people, young people were encouraged to talk about what they found interesting at the Garden, why they took certain photos, and their memories of the day. Using photos provided a springboard for conversation as they were images taken, and now explained by the young people. In addition to this young people were also encouraged to talk about other sources of environmental knowledges with which they come into contact and what sources of knowledges they trusted. Various adult carers and environmental education officers were also interviewed.

**Fig 2  Collaboration**

![Collaboration image](http://www.geography.org.uk/eyprimary/primaryresearch/researcharticles/)

Conversations were taped and later transcribed. Themes began to develop through the discussions that were later confirmed using open coding. These themes often overlapped as sub categories were unpacked. The hundreds of photographs taken by young people during their visits were similarly analysed, along with drawings of the Garden they had made after their visits. The material began to agree, contest and extend the three theoretical models under scrutiny.
By using these various methodologies a vast array of material was collected that helped to illustrate:

- how young people experience environmental learning for themselves,
- how environmental knowledges is delivered to young people,
- what the role of trust is in constructing their understandings, and
- how non-cognitive processes are important to the acquisition of environmental knowledges.

**Findings:**

The research found that the practice of young people's environmental learning does not reflect the theory of it represented by the deficit model, risk society thesis and aesthetic reflexivity. (Kollmuss and Agyeman 2002; Beck 1992; Urry and Macnaghten, 1998). The issues these theories raise will be taken in turn and findings briefly summarised.

1. **The delivery of knowledges**

   The deficit model assumes the knowledges are delivered through a straightforward process; that it is 'sent' by an expert and is 'received' by the public. The research highlighted that, in practice, the construction of young people's environmental knowledges is more complex and a further actor is important to their communication network.

   Mediators, in the form of teachers and parents, were found to be important communicators and guides for young people's environmental understandings. Mediator's situated knowledges (their likes, dislikes, personal experiences and so forth) were found to be integral to how young people used and engaged with the Garden. The mediator's own experiences of the environment and their views on safety, hygiene and taste were all found to influence how young people engage with environmental knowledges and the type of environmental knowledges they can construct from these experiences. For example if a mediator was very safety conscious, young people were told not to touch the plants, to be careful when walking round and not to take any unnecessary risks. While the students gained knowledge about potential dangers and hazards, they missed experiencing what things felt like or smelt like. In this way, mediators influenced the content of young people's environmental learning experiences.

2. **Trust and learning**

   The risk society thesis purports that people rely on trust in order to make decisions. They engage with experts who they trust. So for example, while buying a second hand car may be risky, you counter this risk by placing trust in the salesperson or company from whom you buy. The risk society thesis perceives of the public of trusting experts in a simple straightforward way. However, the research highlighted that this relationship of trust is more complex where young people are concerned.

   Young people were found not to simply trust experts, but to negotiate trust between and amongst a variety of sources of expertise, depending on the context. When questioned whom they trust with
regard to environmental knowledges the young people ranked their friends as the least trustworthy. Teachers were thought of as more trustworthy (because of their age and position of authority), followed by education officers at the Garden (because of their experience of working at the institution). Books were thought of as more trustworthy still (because of the research needed to write them), followed by natural history documentaries (because it was thought they never lie). The most trusted source of expertise young people felt they could rely on for their environmental knowledges was found to be the Internet (because it took so long to make and so many people were involved in it).

3. Non-cognitive learning
Aesthetic reflexivity embraces both more subjective and more aesthetic sources of expertise into its analysis of how people come to create their understandings. By aesthetic sources the importance of film, quality television, poetry and painting is referred to. In addition to this aesthetic reflexivity also raises awareness of embodied experiences. Whilst the previous section highlighted the importance of television and the Internet, how embodied experiences were found to be an issue intrinsic to the communication and construction of young people's environmental knowledges at the Garden will be discussed here.

Understandings can be experienced through bodily reactions to the environment. Many young people visiting the Garden recalled their favourite aspects of visiting the Garden, being allowed to see, touch, and smell the plants. It was generally felt that seeing, smelling and touching plants was a markedly different learning experience than that usually experienced in the classroom. These more embodied experiences not only seemed more memorable but also allowed young people the opportunity of discussing size, texture, smells, and more emotional feelings towards nature than is sometimes possible.

Fig 3  Getting involved

The research also highlighted that interest in specific exhibits is in part the product of subjective interest. Not only do young people become attracted to unusual or ‘pretty' plants, they can also become both interested and disinterested in plants with which they may already be familiar. Young
people new to the Garden were found to seek out plants they already knew something about in order to learn more. However, regular visitors to the Garden were found to find familiar plants boring and wanted to discover new things. These visitors had become saturated by their experiences of the Garden and needed the unusual to rekindle interest. In this way aesthetic sources (in the form of television, film and the plants themselves) and subjectivities not only informed, but also guided the communication of young people's environmental understandings at the Garden.

Conclusions:
The research highlights a number of implications to the implementation of young people's environmental learning. These include,

- the need to improve mediators communication techniques;
- the need to improve communication between all actors involved in the communication of environmental knowledges to young people;
- the need for a review of teaching strategies in the classroom, and encouragement for more embodied learning;
- the need for young people to be encouraged to critically think about the expertise with which they are engaging;
- the need for institutions to encourage environmental knowledges acquisition by developing more hands on and embodied learning experiences.

In addition to this the research also points to the need for further research and raises questions that were unable to be answered in this project. Themes needing future attention include:

- how gender, class and age affect the communication and understanding of environmental knowledges,
- the need for more longitudinal research in order to investigate how understandings develop over time with the individual,
- the need for research with young people in different contexts, particularly in rural areas, where little is known of young people's environmental knowledges.

Ways in which these issues could be engaged with are detailed and the contribution to environmental education research and the geographical discourse is more broadly discussed in the dissertation.

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Further Reading


Wynne, B (1992) 'Misunderstood Misunderstanding: social identities and public uptake of science' Public Understanding of Science 1(3) pp 281-304