EFFECTIVE EVALUATION OF OUTDOOR LEARNING

Dr Karen Kerr

ESDF Annual Conference
Friday 10th February 2017
Collecting ‘good’ evidence
  – Must have a very specific purpose
  – Clearly defined outcomes
  – Appropriate method of collection

‘Good’ qualitative evidence
  – Interviews
  – Focus groups
  – Field observations

‘Good’ quantitative evidence
  – Questionnaires!
  – Tracking engagement
  – ………

Analyzing and presenting the evidence effectively
What are outcomes?

Cognitive

Affective

Interpersonal/social

Physical/Behavioural
WHAT CONSTITUTES GOOD EVIDENCE?

- ‘Good’ qualitative evidence
  - Effective introductions
  - Wording
  - Awareness of bias
  - Open questions
  - Linked to outcomes (what you are measuring)
  - Preparation for unexpected responses/no response
  - Effective ‘prompting’
  - PILOTING!!!!!!
WHAT CONSTITUTES GOOD EVIDENCE?

- ‘Good’ qualitative evidence: bias
WHAT CONSTITUTES GOOD EVIDENCE?

- ‘Good’ **qualitative** evidence: Interview schedule – exemplar 1

<table>
<thead>
<tr>
<th>Teacher interview questions/areas</th>
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<tbody>
<tr>
<td><strong>GENERAL QUESTIONS:</strong></td>
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<tr>
<td>1) What did you enjoy the most/least about your involvement in the NASTOC project? Why?</td>
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<tr>
<td>2) Which aspect/section of the workshops/overall project did you find the most/least beneficial with regard to teaching science in the outdoor classroom?</td>
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<td>3) Which aspect/section of the workshops/overall project did you find the most/least beneficial with regard to transition for your school?</td>
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<td>4) What do you think the children enjoyed the most/least? Why?</td>
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<td><strong>CPD:</strong></td>
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<td>5) What did you think of the CPD framework (workshops and in-class support)? Was it useful and why? Which aspects? Why/why not?</td>
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<tr>
<td>6) One of the aims of the project was to develop materials for teaching science in the outdoor classroom. Do you think you achieved this? Why/why not? What were the challenges?</td>
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<td><strong>COTeaching:</strong></td>
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<tr>
<td>7) What do you think are the main benefits/problems regarding coplanning, coteaching and corevaluating in this way? Why?</td>
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<tr>
<td><strong>Sustainability:</strong></td>
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<td>8) Are any of the aspects of the project/resources being continued on/used/developed in your school/with the other school? Which ones? Why?</td>
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<td><strong>Improvements:</strong></td>
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<td>9) We try to anticipate teachers’ needs, what would be most beneficial and what they would hope to gain when planning a project like this, what might you do differently?</td>
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<td>10) Any other comments?</td>
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WHAT CONSTITUTES GOOD EVIDENCE?

• ‘Good’ qualitative evidence: Interview schedule – exemplar 2

Introduction:

My name is ______ and I am from Queen’s University. I work with some people who are really interested in what children/young people think about things (how they are taught in school?). I would like to have a little chat with you today about some of these things (about what you think about how you are taught science/the world around us in school?).

I am really interested in hearing what you think and any ideas that you have. Nobody knows everything about the best way to teach children/young people, some people just have ideas. Everyone’s thoughts are really important to me and I am interested in what everyone has to say. Everyone will have different ideas/opinions and that’s alright too, that’s what makes it interesting. You can ask me about what I think as well.

There are no right or wrong answers and no one is going to listen to this chat except me (i.e. not teacher etc) so you can say exactly what you think. I will type up everything you say but I won’t use your real names. Everyone will remain anonymous (check understanding of this) and no one will find out what individual boys and girls have said. The only time I might have to tell somebody what you have said is if you’ve said anything that makes me feel that you or your friends are in danger or are being hurt. I would like to listen to your ideas so that maybe we can help other children learn in school and help teachers to make really interesting and enjoyable lessons that other children will understand.

Nothing’s going to take us about a half an hour. If you really don’t want to do this, that’s fine. You can go back to class if you would prefer to. Would you like to do that or carry on? Are we all happy to get started then?

**Possible probes**

**GENERAL QUESTIONS:**

1) Do you like science? Why/why not?

**OUTDOOR LEARNING:**

2) What did you enjoy the most/least about your involvement in the NAStOC project? Why?

3) Do you think you learned anything from your involvement in the NAStOC project? Why? Why not?

4) How did you feel about outdoor learning before the project? Why?

5) How do you feel about outdoor learning now that the project is finished? Why?

**TRANSITION:**

6) How did you feel about moving to Year 8 before the project? Why? What were you excited about/worried about? Why?

7) How do you feel now about moving to Year 8? Why? What are you now excited about/still worried about? Why?

**COTeachING:**

8) What do you think of your teacher and the Year 8 teacher teaching together? Good things? Not so good things? Why?

**SUSTAINABILITY:**

9) Would you like to be involved in any other projects like this in the future? Why? Why not?

**IMPROVEMENTS:**

10) If you were a P7/Year 8 teacher planning a project like this or if you had my job, what might you do differently? Why?

**SUMMING UP:**

11) Is there anything else you want to say?

12) Do you have any questions for me before you go back to class?
WHAT CONSTITUTES GOOD EVIDENCE?

• ‘Good’ **quantitative** evidence
  – Effective introductions
  – Wording
  – Awareness of bias
  – Selection of question type (think back to outcomes and forward to analysis and reporting)
    • Open
    • Scale (yes/no or 5 point scale)
    • Multiple choice
    • ranking
  – Preparation for unexpected responses/no response
  – PILOTING!!!!!!
WHAT CONSTITUTES GOOD EVIDENCE?

- ‘Good’ quantitative evidence - bias
WHAT CONSTITUTES GOOD EVIDENCE?
WHAT CONSTITUTES GOOD EVIDENCE?
## WHAT CONSTITUTES GOOD EVIDENCE?

### STTOC survey_PRE

11. These questions are about working with others. Tick one answer for each question.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree a little</th>
<th>Not sure</th>
<th>Disagree a little</th>
<th>Strongly disagree</th>
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</thead>
<tbody>
<tr>
<td>I am able to work well by myself in school</td>
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<td>I prefer to make my own decisions about how to do something</td>
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<td>I take part in group work confidently in school</td>
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<tr>
<td>It is important to listen well to others to get things done</td>
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<tr>
<td>It is important to help other people in life</td>
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<tr>
<td>I accept help when I need it</td>
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<td>I am generally confident in new places</td>
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<tr>
<td>I am generally confident at working with new people</td>
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<td>I like working in a team</td>
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WHAT CONSTITUTES GOOD EVIDENCE?

40. If you were a science teacher, how would you teach science in the classroom?


41. If you were a science teacher, how would you teach science in the outdoors?
“I think that when you are sitting in the classroom and the teacher is just telling you all the things with all the pictures on it, it gets boring at times and it doesn’t really stay in your head but when you are having fun while doing work, you can remember, that’s actually really fun and it kind of sticks in your head when you are doing fun stuff with work.”

*(primary student)*
Affective

“No one will care about what we do not know about and no will know what they have not experienced”

Sir David Attenborough

The percentage of positive responses for the 'attitudes towards school science' items

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre</th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td>like science lessons</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>all children should have to learn science</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>like solving problems to do with science</td>
<td>62</td>
<td>69</td>
</tr>
<tr>
<td>more science in school</td>
<td>52</td>
<td>55</td>
</tr>
<tr>
<td>join a science club</td>
<td>33</td>
<td>38</td>
</tr>
</tbody>
</table>
“I was quite scared…it made me more confident, I have nothing to worry about, you might not be in the same class as your friends but you can make new friends.”
*(primary student)*
People were created to rule over nature

Plants and animals are mainly on Earth to be used by people

Nature is strong enough to handle the damage caused by our modern lifestyles

People are clever enough to keep from ruining the Earth completely

* represents a significant difference at p<0.05

…”there is a lot of litter which shouldn’t be there. Obviously people throw it over the wall and don’t think about what is happening but there is a lot of creatures dying from it.”
(Primary student)
Science during primary–secondary transition

Science learning in the outdoors to support primary–secondary transition

Karen Kerr

ABSTRACT This article builds on and contributes to work in the area of science learning in the outdoors and addressing transition issues for pupils as they move from primary to secondary school. Previous studies have examined issues in the transition phase between primary and secondary school, but evidence is limited for the use of learning science outdoors as a delivery model to address transition issues. This study provides additional insight into how outdoor learning can be used as a vehicle to address transition issues. It analyses the benefits of outdoor learning through the use of shared learning days with pupils in transition phases across all the cited outcome categories: cognitive, affective, interpersonal/social and physical/behavioural. The article argues that a carefully designed programme of outdoor ‘shared learning days’ with pupils in both phases working together is a sound model to help address the recommendations arising from specific transition issues through the delivery of aligned outcomes and impact from learning science outdoors.
PRESENTATION OF THE EVIDENCE

http://www.theguardian.com/commentisfree/2012/nov/19/children-lose-contact-with-nature

If children lose contact with nature they won't fight for it
George Monbiot

With half of their time spent at screens, the next generation will be poorly equipped to defend the natural world from harm.

Contact author
@GeorgeMonbiot
Monday 19 November 2012 20:29 GMT

[Sharing options]
[Shares: 189,744, Comments: 382]

Last Child in the Woods
Saying our children from Nature-Deficit Disorder

Richard Louv

diminished use of the senses,
attention difficulties
high rates of physical and emotional illnesses
NI children ‘disconnected from nature’

As many as 75% of Northern Ireland’s children aged 8 to 12 are not as ‘connected’ as they should be to the natural world around them, a survey has found.

RSPB Northern Ireland commissioned the research as part of the annual Kids’ Life and Times survey.

In total, 2,400 children responded to the survey, answering a series of questions designed to measure a range of aspects - including their enjoyment of the outdoors, how at one they feel with nature and their empathy for creatures.

The answers revealed that only 25% of children in Northern Ireland have what the charity would consider ‘a realistic and achievable’ level of connection to nature – with boys and children living in more urban areas scoring less well compared to their counterparts.
A higher score on the well-being measure was associated with:
- A higher overall **Connection to Nature** score.
- A higher score on the **Sense of Oneness** subscale
- A higher score on the **Enjoyment of Nature** subscale.
KEY REFERENCES


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