

# **Investigating how working with natural materials can influence enthusiasm for the natural world**

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## **Abstract**

*There has been increasing evidence in the literature of a disconnection between daily life and the natural world. In the paper this will be referenced. The psychological advantages attached to regular engagement with nature have been recognized; nonetheless, the identification and implementation of mechanisms for encouraging and supporting this activity present significant difficulties.*

*This study will focus on one group of the population that is particularly vulnerable to the disconnection, the young and how they might be (re)engaged with nature through activities other than those normally associated with it (walking, gardening etc.).*

*An exploratory school-based study with 23 Austrian school children has explored how the use of different mechanisms for engaging with nature (e.g. computer images, photographs, story telling, observation) might affect changes in attitude to it. The study suggests that engagement through mechanisms with which the participants were comfortable e.g. computer based images, influenced their subsequent enthusiasm for physical interaction with nature.*

*Part 2 of this study is currently investigating how hand-skills and working with natural materials, might influence the engagement of young people with nature and thereby their physical and emotional well-being.*

*Some broader insights are anticipated from this study; these relate to issues such as curriculum design and approaches to learning and more broadly to how land-use planning and urban design might support this 'behavioural' change.*

EXAMPLES OF ADVANTAGES ASSOCIATED WITH GREEN SPACE have been demonstrated with the development of the 'Schrebergärten', which originated from a concept of 'family gardens', in place in Europe since 1926. This concept spread across much of Europe for city dwellers to enjoy the benefits associated with green space. Orr (1994) argues that this experience could offer a better quality of life, providing personal adventure, which sows the seeds of communication with nature, which would later be harvested into harmonic relationships between humans themselves. This, Berry (1987) suggests, is in contrast to what the concrete and asphalt of cities could alone provide. Green space, Berry asserts, is a place for peace and talking, where people can be themselves. This is no new theory; Tönnies (cited in Dickens 1992, p.31) in 1955 argues that in order to know oneself it is necessary to interact with people *and* nature, and reflects that modernity is altering relationships, suggesting that humans are becoming impervious to their surroundings.

The research for this work was designed to initiate a path which may ultimately assist those arguing for urban green space preservation.

For centuries, psychological benefits have been associated with engagement with nature and considered significant in the education of young people and are closely linked with development in the early years of learning (Margolin, 2005). Technology, now an integrated part of society, is considered in this paper as a way of (re)connecting humans with nature. Feenberg (1999) suggests that technology is now so intertwined with the whole of society that any significant change in electronic media affects most aspects of society, such as religious, cultural and political.

The method used for this research involves the observation of and analysing the way in which young people perceive the natural environment and to what extent technology has the potential to impact on their relationship with the natural world. It investigates how images of nature portrayed on the computer impact on their desire to interact and communicate with nature.

The data were obtained through the written opinions and feelings towards the natural environment depicted by pupils of a secondary school. The children's experiences, both of direct contact with nature and of the viewing of photographs of nature in the computer room, were analysed. Analysis suggests that the combining of 'the physical experience' and the viewing of photographs on the school computers led to an

increased desire to interact with the natural environment. The venue was a secondary school in a rural area of Lower Austria. The children are all Caucasian and of Austrian descent.

The project was conducted in English because it was part of an 'English week' which was sponsored by the school.

The participants were divided into two groups: those who viewed images of nature on the computer during the project and those who did not. Feedback was elicited from all the participants about their feelings towards the natural environment and their place within it. These qualitative data were compared between the two groups to determine the influence of the computer in this regard.

Recommendations include taking this research action to encompass other activities, which may influence how the natural world is perceived, namely handwork using natural materials. It should collate data from a wider audience covering different and definable areas of several cities. In this case analyses could additionally focus on areas of cultural identity such as: nationality, language, race, religious beliefs and/or ethnicity of any kind.

The study took place in the spring of 2009 and follows a line of investigation into the emotional effects associated with experience of the natural environment.

A total of 23 children aged from 12 to 14 years assisted with this research. The experiment took place over a five-day period. During each day, all the children would attend the activities of this project. The 23 children were divided into two groups, one of 12 pupils (group 1) the other of 11 (group 2); hereafter referred to as group 1 and group 2. Each group had its own separate time slots. The children were of both genders and these were fairly evenly spread within the groups.

After their time viewing natural scenes on the computer Group 1 experienced a physical encounter with nature. Group 2 did not use computers but instead spent the same quantity of time viewing scenes of nature through the classroom windows prior to their physical time with nature. The views from the window were of herbaceous beds leading to a small grass playing field, which bordered on a mixed deciduous wooded area.

The nature scenes viewed from the computer (group 1) and from the window (group 2) shall be referred to as nature experiences 'from a distance'. Their physical contact with nature which both groups encountered shall be referred to as 'direct nature experience'.

Although the separate groups were not in contact during the sessions they were not asked to keep any aspects of the project secret and may have conversed at times other than when they were participating.

Constraints connected with the project consisted mainly of time deficiency. However, the researcher was very fortunate to have worked with responsibly behaved children, who rose to a demanding time schedule. Time spent on class management was negligible. The project was conducted in English, which occasionally necessitated some translation from the researcher.

## **Method**

The objective of the method is to investigate whether a represented form of nature can affect the enthusiasm of school children for experiencing nature. This would be done by identifying any variation in perspective between the two groups and evaluating the reasons behind these differences.

Prior to the pupils 'direct nature experience', group 1 used electronic media to view natural scenes. Concurrently group 2 was given the task of viewing the scenes of nature from their 2<sup>nd</sup> floor classroom window.

For both experiences the children were paired (group 2 had one threesome). The children were asked to describe what they saw to a partner. The researcher considered that by pairing, the pupils would be more conscious of their thoughts.

The children were asked to write about both their experience from a distance and their direct experience with nature. The researcher took care not to influence the answers and observations of the children. On the last day, final written recollections were elicited from the children with minimal influence from their peers; this was achieved with the use of single desks on which they worked separately. They were given the option of passing their writings on to the researcher anonymously. Other than their writing the children were not at any point required or encouraged to share

their thoughts with the researcher.

Initially the children engaged in the 'from a distance' experience. Their task was to observe elements of nature that they found interesting; they then verbally expressed their thoughts to their partner within their own group.

The final phase engaged the children with their 'direct nature experience' and their task to describe their feelings concerning their interaction with nature and their subsequent thoughts toward this experience during the two different experiences. They were asked to write a half page or more, in any form to describe each of the experiences encountered, i.e. they could use stories, poems, literal documented accounts etc.

### **Monday - Introductions**

The children were randomly divided into two groups – 1 and 2.

The groups were separately introduced to the concept of the research in terms of what they would be required to do. They were given a concise outline of its objectives, which was termed approximately as follows: The aim of the project is to discover methods in which the 'nature experience' can be enjoyed and to discover which of these ways bring most awareness of the benefits that nature can bring.

They were then asked to reflect on the ways in which they considered nature in respect of: their attitude toward nature as they know it; what impact it has on their lives; the facets of nature of which they are most aware; their favourite aspect of the natural world. Some noted their thoughts down on paper. Their task for the following days was described. They would experience elements of nature using a representation, viewing nature from a window and an actual experience of nature. They were to focus on the areas of nature, which were interesting to them as individuals. The following elements were suggested as examples of what they might consider: trees, shrubs, flowers, leaves, birds, butterflies, clouds, bark, earth, grass, stone, rain etc. These examples, applicable to both groups, were given to all 23 children.

### **Tuesday - Observation**

The children of both groups were randomly paired.

Group 1: was taken into the computer room of the school where they worked on

computers. Partner A would choose a scene of nature on the computer and would describe to partner B the elements of nature observed. After a period of time the children swapped roles. The children were free to choose the type of nature scene they viewed.

Group 2: in a similar fashion to group 1, these children worked in pairs while observing from the classroom window. Partner A would locate an aspect of nature within vision and tell partner B what they had found, the pairs (and one threesome) then alternated.

Both groups towards the end of the day were asked to jot down the thoughts on what they had described earlier. Before they left the classroom, the researcher requested both groups to spend the time of their journey home thinking about what they had seen, either on the computers or from the window.

### **Wednesday**

The procedure of random partnering was for both groups repeated, which ensured each child had a new partner. The rationale being that any clash of character would not exist over the whole week. After this the groups were led into the school grounds. They explained to their partner facets of elements encountered and swapped roles. Afterwards they noted on paper what they had described to their partners. They were again requested to contemplate on what they had witnessed on their journey home.

### **Thursday - Analysis**

To have the children focus on how they consider nature as a part of their lives, the groups chose one element witnessed, about which they were then asked to write the following:

adjectives portraying the element; its uses and how it fits into the ecosystem; to conceptualise how the element is or could possibly be useful to humans or any other living being.

After this they were asked to write about how their lives were affected by this element and how their lives might change should this element suddenly cease to exist.

### **Friday - Feelings**

In this final phase, both groups reflected on their thoughts of both experiences. At this stage they were given guidance as to how they might measure their feelings with the

suggestion that they place these somewhere between two extremes. The following examples were written on the blackboard:

- exciting – boring
- nice – disgusting
- magical – rational
- funny – ordinary
- calming – tense
- friendly – unfriendly

In this final session, of the 23 children, 22 wrote approximately one half page for each of the two experiences and often more, concerning their direct experience with nature and their 'computer' or 'window' experience. The exception was a child in group 1 who felt unwell and wrote nothing. The writing consisted of poems, stories and documentary approaches. Before the end of this final session there was a group presentation, each pupil reading aloud their writings. During the researcher's final contact with the children they were asked what they thought of the project. The overriding declaration of the children was that the project was fun, if a little stressful due to time restraints.

Diagram A shows a synopsis of the method used.

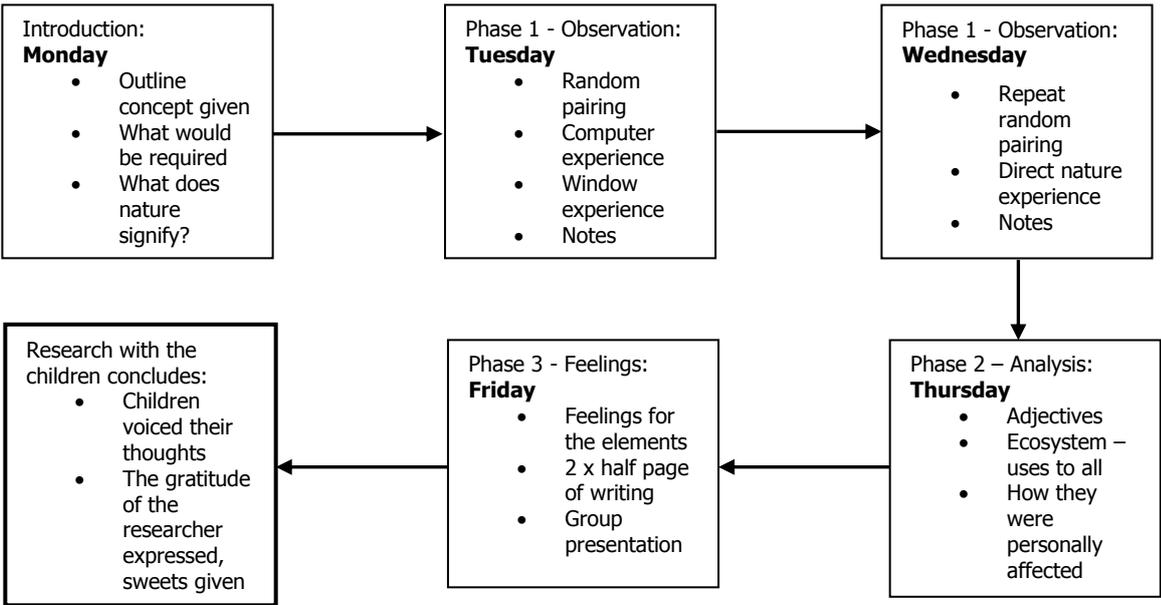


Diagram A: Concise summary of the schedule

## Results and discussion

The following describes an overview of the findings deduced from the meaning of individual words the children used in their writing. The researcher also offers some of his observations regarding the children's attitude and approach to the project at the beginning, middle and the end of the week.

The most striking finding was that the writing of group 1 showed greater enthusiasm for their 'direct experience', this can be seen by looking at tables A and B. This suggests that the time they spent viewing scenes of nature portrayed by the computer, acted to catalyse an increase of enthusiasm for nature.

Other notable outcomes:

- During the computer experience of nature, all chose to view picturesque portrayals of nature and not single flowers or plants.
- Many of group 1 observed that in the photographs there were no people, this they often associated with 'magic'.
- The scenes portrayed in the photographs were often described in their writing with more subjectively than those observing from the window. They used words/comments such as magic, harmony, lovely day, birds singing or 'suddenly I saw'. Group 2 used more objective way of writing with words such as green grass, tall trees, birds flying.
- There were no significant differences between the portrayed experiences of boys and the girls.
- The researcher sensed that those pupils (of both groups) with less enthusiasm at the beginning of the project had an increase of interest for the project after their 'direct experience' of nature.

The following two charts present an overview of how the children presented their thoughts; the data are divided into four main areas of expression the children used in their writing. The bars indicate the number of children expressing words or comments the meaning of which could be construed as belonging to the category.

Table A shows how both groups described their 'experience from a distance'. Table B highlights how the groups described their physical experience of nature.

**Table A: Nature experience 'from a distance'**

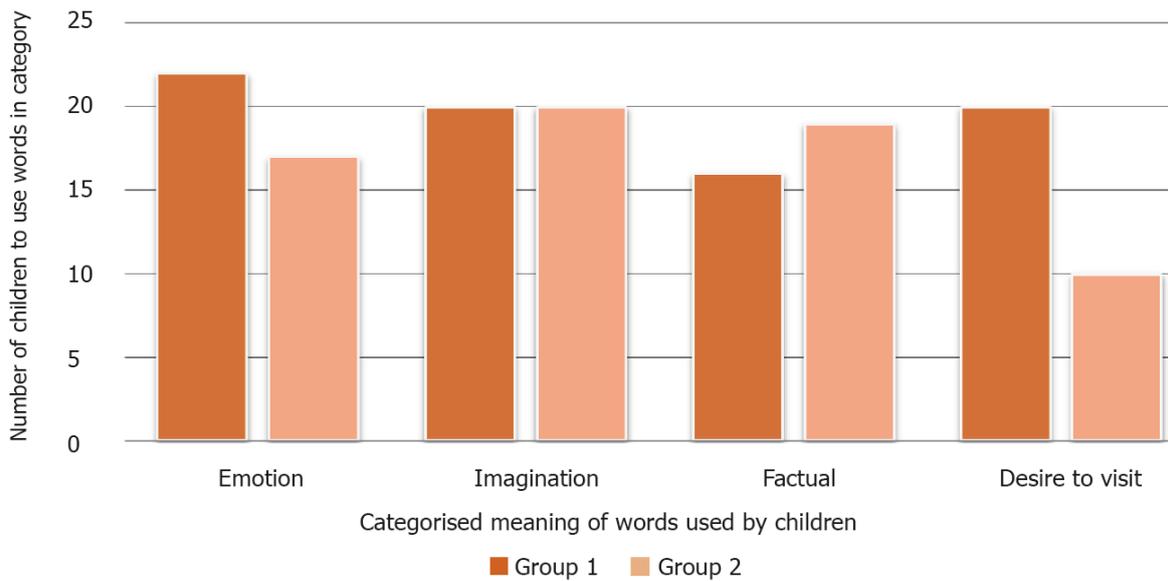


Table A shows that those in Group 1 wrote of their computer experience with an increased 'desire to visit' a nature environment; whereas the emotion category demonstrates that Group 2 wrote of their 'through the window experience' with less emotional enthusiasm; this was correlated by their more factual way of writing about this activity.

**Table B: 'Direct experience' of nature**

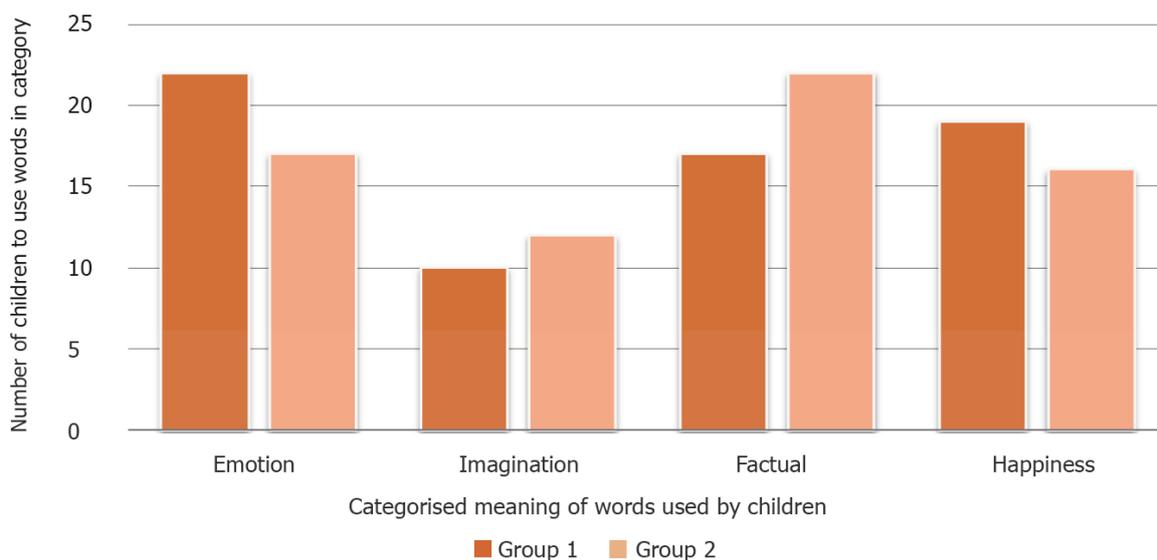


Table B indicates that Group 1 wrote of their physical experience in a noticeably more emotional manner. Conversely the results also indicate that Group 2 considered aspects of their direct experience of nature in a more fact manner.

**Researcher's note**

While this study indicates that the children's' enthusiasm for nature can be influenced by viewing images of nature on computers, this cannot be verified and further research is required before these data may prove valid and useful.

Nonetheless, it is hoped that these results show that in all probability certain activities influence how nature is perceived. Thus, this paper is submitted with the belief that further and wider research in this direction is justified.

## **Phase 2 – research to date and objectives**

The researcher is a teacher of 'design and technology' in the University of Applied Arts, Vienna. His students take at least one semester course with him as part of a 9-semester art and design education course.

The researcher has to date interviewed school children from the age of 12 to 16 and adults, who are engaged with woodworking courses. He has also requested his adult students to fill in various questionnaires pertaining to what their expectations of working with wood were before they enrolled with him. He also asked them to write about their feelings and importantly how they compare this work with the other workshops in the University where other materials are used. Interestingly many of the answers relate to their past – remembering how their fathers or grandfathers made things, or their time in the school woodwork class; many mentioned the smell and how this set working with wood apart from other materials from the moment they entered the workshop, some even connected their time working with wood in the forest.

It appears from these completed questionnaires that skilful hand working of natural materials does, in certain cases, have an influence on the way students consider their relationship with the natural world.

The results of phase 1 indicate that activities other than the 'physical experience' of nature can alter a person's perspective of a physical experience with nature.

Furthering the study to encompass those who teach and those learning hand skills, over a larger geographical area, involving greater numbers and over a longer time span, may contribute to the current knowledge of relationships between working with natural materials and empathy for the natural world.

It is the hope of the research that a study of this kind may even act to increase the importance town planners give to urban green space.

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