THE HAND MODEL – ITS PRACTICAL POTENTIAL FOR GUIDING OUTDOOR LEARNING FOR SUSTAINABILITY.

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The Real World Learning network (RWLn), of which the Field Studies Council is a leading partner, set out in 2011 to explore elements that contribute to a ‘deep and meaningful’ outdoor education experience. This led to the development of the ‘Hand Model’ launched in early 2014, which aimed to support educators in developing Outdoor Learning for Sustainability (OLfS) as part of their practice. This paper comprehensively introduces the intraconnected elements of the Hand Model before going on to explore how the model has been used in practice within the FSC and beyond, and how it might assist the further development of OLfS in the future. Considering inconsistencies within the model, this paper will inform the reader of the educational debates and controversies surrounding its implementation as well as suggesting possible advantages of making use of the model in outdoor education practice. Three main areas are highlighted which stand out as exemplars of how the model holds practical use-value, in ways which enhance the sometimes contradictory theory behind it: the use of narrative, story and metaphor; the experiential link between knowledge-based learning and more open approaches; and development of care as a guiding ethic for Outdoor Learning for Sustainability.

INTRODUCING THE HAND MODEL

As the UN Decade for Education for Sustainable Development (2005-2014) drew to a close, outdoor educators from across Europe came together in 2011 to form the Real World Learning Network (RWLn). The network set out to explore elements that contribute to deep and meaningful outdoor learning experiences which support sustainable thinking and action, embedded within sustainability education (RWLn, 2015). After three years of collaborative work, the RWLn launched the Hand Model, providing guidance for outdoor learning for sustainability (OLfS). OLfS is based on the use of the term in the Scottish education context. It is used to incorporate outdoor learning, education for sustainable development, children’s rights, international and citizenship education (Scottish Government, 2014), and, additionally, draws from and connects to the wider fields of environmental education (EE) and Education for Sustainable Development (ESD).

Consisting of six interconnected elements, and visualised using the image of a hand, the Hand Model promotes a vision of holistic learning, integrating [the fingers of] understanding, transferability, experience, empowerment and [the thumb of] value. Each element is presented with a principal question (see Figure 1), aimed to provoke reflection and to enable effective planning. Arranged around these questions are what are known as ‘ripples’, representing the guiding principles for OLfS, as distilled by developers of the model. Although important individually, these elements when viewed as a whole are said to offer a ‘deeper, more meaningful learning experience’ (RWLn, 2015), and find meaning through the use of a frame [situated in the palm], which is understood to be a subconscious collection of memories, emotions, beliefs and values which are triggered by external stimuli. These frames give rise to individual internal narratives, or worldviews, which generate personal meaning and understanding (RWL, 2014b). The model makes use of this concept to explicitly work with frames which trigger intrinsic, and self-transcendent values (see Values, below), following a methodology informed by the social psychology value theory of Schwartz (PIRC, 2011, Schwartz, 2012). The various elements of the model are introduced more comprehensively below.

UNDERSTANDING: ARE SCIENTIFIC CONCEPTS OF LIFE INVOLVED?

This element is concerned with the understanding required to develop thinking and action for sustainability. Exploring the ways in which teaching in the outdoors takes place, the RWLn suggest that a holistic approach is made use of to teaching scientific principles, whereby scientific reasoning is applied alongside other aspects of understanding such as emotions and values. Drawing from work on planetary boundaries (Rockström et al., 2009, Steffen et al., 2015), and the work of Fritjof Capra and the Centre for Ecological Literacy (Capra, 2004, Literacy, 2015), the RWLn propose four ecological principles which run through taught programmes: cycles, change, energy flow and stability. Operating predominantly as straightforward mechanisms for understanding ecological processes, these principles are also said to work as metaphors for the way in which society operates and the way in which we interact with the world (RWL, 2015). The RWLn suggests that the principles put forward within the understanding finger
TABLE 1. Key question examples for a woodland invertebrate study, showing how the four principles of scientific understanding might be applied to teaching (RWL, 2015).

<table>
<thead>
<tr>
<th>Principle</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>What might happen if a tree fell down? How would that change the population numbers of a particular invertebrate? What would happen to the food web or the whole woodland ecosystem in a storm</td>
</tr>
<tr>
<td>Energy flow</td>
<td>What are the food chains in a woodland? What are the food webs? What’s the trophic structure like in a woodland? What would happen if the top predators were poisoned and died in large numbers?</td>
</tr>
<tr>
<td>Change</td>
<td>Which species are adapted to different places? Why? What are the places like? What would happen if the places changed?</td>
</tr>
<tr>
<td>Cycles</td>
<td>From the definition of cycles I came up with the question of ‘How do the seasonal cycles impact on the life cycle of an invertebrate or groups of invertebrate’</td>
</tr>
</tbody>
</table>
demonstrate the crucial interdependence of natural systems, but also act as principles for sustainable living and ecological/social awareness. The potential for these principles to be included within a teaching session or course are highlighted as the focus of curricula content and teaching approaches are prompted to shift from parts to whole system processes. An example of how a lesson might be structured to make use of this aspect of the model is given in Table 1.

TRANSFERABILITY: ARE DIFFERENT AREAS OF LIFE INCLUDED?

In the Hand Model, transferability refers to the way in which the material and experience of learning connects learners to different areas of life. The model prompts educators to examine and make use of the interconnections between teaching activities and a variety of contexts and scales, identified as: the learners themselves, the natural environment, the non-natural environment, the learner’s communities and global society. Theoretically, to teach while making use of transferability prompts the educator to place emphasis upon the emotional significance of experiences, to draw together social, economic and environmental perspectives in order to see how these aspects of life hold resonance with one another, and to make use of narrative and metaphor in order to extend the meaning of an experience into other areas of life – specifically to link the large scale of global society with the daily lives of learners. The literature which supports this element of the model presents some useful case studies which practitioners can make use of to link different areas of life with teaching activities (RWL, 2014d).

EXPERIENCE: DO LEARNERS GET IN TOUCH WITH OUTDOOR SETTINGS?

The Hand Model makes the assertion that experiential learning is critical for OLfs, for four main reasons: the development of a concern and sensitivity to the environment; the benefit it brings to wellbeing and health; for enhancing the contextual meaning of learning in the ‘real world’; and for the development of ‘action-competence’ – to reflect upon and learn from experience. The Hand Model makes a number of recommendations for developing programmes which include these aspects, they should: provoke and raise curiosity, increase sensitivity and care for the environment, involve ‘head, hand and heart’ (educating about, for and in the environment), use a variety of methods to reveal something new to the learner, remain open to the outcome, and provide opportunities to act upon an issue and to see a change (RWL, 2014a). Experience is a central component of the model and carries a practical significance which links it to many outdoor EE programmes.

EMPOWERMENT: ARE LEARNERS EMPOWERED TO SHAPE A SUSTAINABLE FUTURE?

Within this element of the model, two distinct strands present themselves. The first is concerned with learner experience and aims to provide opportunities for learners “to experience the ‘real world’ around them with the joy of learning in a self-directed way [and to] strengthen their intrinsic motivation to care about the world they live in” (RWL, 2015). The second strand is concerned with skills and responsibility, including critical thinking, emotional intelligence, self-efficacy, determination, reflection and communication. The model emphasises that these should not be merely seen as skills or competencies to be acquired but that they should be integrated within the wider educational process to encourage learners to take responsibility for their own learning. The empowerment element of the model presents an emancipatory challenge to other instrumental elements such as understanding and values. Its place within the model creates a form of theoretical dissonance, which this paper will examine from a theoretical and practical perspective.

VALUES: ARE SELF-TRANSCENDENCE VALUES PROMOTED?

Values are a key aspect of the model, and as such they are situated in the thumb (thus with the ability to connect with each of the other elements). Here, the term ‘values’ takes on a specific meaning. Grounded in the work of Schwartz (2012), a social psychology understanding of values is made accessible to practitioners working for social change by the organisation Common Cause (PIRC, 2011). In terms of this theoretical basis, value items are represented as a circumplex (see Fig. 2) in which a variety of value groupings are evident. Broadly these groupings fall into two categories – intrinsic value and extrinsic value. On this circumplex, the closer the value points are to each other, the more likelihood one person will hold those values in high regard, whereas the further apart they are, one person is less likely to hold all those values highly. The work of Common Cause and of the RWLn draw links between the desirable hallmarks of sustainability education and intrinsic value – otherwise termed ‘self-transcendent values’ due to their focus on concerns beyond the self, such as social and ecological justice. The model is infused with three ‘core values’ to be made use of in the planning and delivery of education programmes; a respect for nature and care for the state of the planet, respect for future generations and equal opportunities for all people to shape their lives.
The final component of the model, known as the ‘frame’, is situated in the palm, connecting all other elements. The RWLn give two reasons for the place of frames within the model; they “act like a guiding light for teachers and learners, allowing self-directed learning to occur… [and]… provide a deeper meaning for the learner” (RWL, 2014b p. 1). The term ‘frame’ is used to understand and work with the meaning attached to specific symbolic references. Frames normally consist of a statement, concept or symbolic icon, such as a photo, action or even a place as a point of reference for the learning process to refer back to and to guide the principles of learning promoted by the rest of the model. The model attempts to work with the subconscious “bundle of different memories, emotions and values” (RWL, 2014b p. 1) which are triggered through engagement with a variety of frames. Examples of statement-based frames and how they relate to these values are given in Table 2.

Before proceeding, it should be noted that the elements of the model hold within them a degree of inconsistency, which has been elaborated elsewhere (Winks, 2015, Cincera, 2015). These inconsistencies arise from two distinct approaches to sustainability education comprising instrumental and emancipatory pedagogies. From an instrumental point of view, the problems associated with unsustainability are apparent, and the paths toward sustainability are visible and known. Education, therefore should equip learners with skills and competencies for creating a sustainable society in light of these opportunities. On the other hand [sic], emancipatory learning takes the view that the problems associated with unsustainability are complex and the strategies for creating sustainable societies are therefore unknown. An emancipatory approach takes the view that learners need to be able to deal with this emergent uncertainty and to be able to critically engage with decisions as they arise in order to build a sustainable society. Within the Hand Model, it is clear that some aspects are rooted within instrumentalism (e.g. values and understanding), while others hold the hallmarks of emancipatory learning (e.g. experience and empowerment). Rather than consider these inconsistencies as a problem, this paper looks upon this ‘blended approach’ as beneficial to the learning process, and as an advantage to the environmental educator (Wals et al., 2008).
TABLE 2. Examples of RWL ‘frames’ and how they relate to sustainability values (source: PIRC, 2011).

<table>
<thead>
<tr>
<th>Frame</th>
<th>Sustainability values</th>
<th>Items of self-transcending values</th>
<th>Key concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>All taking requires giving back</td>
<td>Respect for nature, Respect for future generations</td>
<td>Universalism: unity with nature, a world at peace, social justice, wisdom, inner harmony, equality Benevolence: meaning in life: responsible, helpful, mature, love</td>
<td>Cycles</td>
</tr>
<tr>
<td>(Reciprocation frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In diversity is the preservation of life</td>
<td>Respect for nature, Equal opportunities for all people</td>
<td>Universalism: unity with nature, equality, a world of beauty, social justice</td>
<td>Diversity</td>
</tr>
<tr>
<td>(Diversity frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living on Earth means achieving balance</td>
<td>Equal opportunities for all people</td>
<td>Universalism: unity with nature, equality, inner harmony, social justice, wisdom Benevolence: mature love, a spiritual life, true friendship</td>
<td>Self-regulation</td>
</tr>
<tr>
<td>(Balance frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survival involves the ability to align with changes</td>
<td>Respect for future generations</td>
<td>Universalism: unity with nature, wisdom, broad-minded Benevolence: forgiving, mature love</td>
<td>Resilience</td>
</tr>
<tr>
<td>(Alignment frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life can be enhanced if abilities are exchanged</td>
<td>Equal opportunities for all people</td>
<td>Universalism: broadminded, equality, inner harmony, wisdom Benevolence: true friendship, mature love</td>
<td>Symbiosis</td>
</tr>
<tr>
<td>(Exchange frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small changes can have a big impact</td>
<td>Respect for nature</td>
<td>Universalism: wisdom, broadminded Benevolence: responsible</td>
<td>Butterfly effect</td>
</tr>
<tr>
<td>(Butterfly frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The sun powers us all</td>
<td>Respect for nature, Equal opportunities for all people</td>
<td>Universalism: unity with nature, a world of beauty</td>
<td>Energy flow</td>
</tr>
<tr>
<td>(Sunpower frame)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Hand Model has been in use for over two years, and as a result, a range of practice based case studies are available (see: RWL, 2014c, Winks and Deacon, 2015) many of which stem from use of the model within the Field Studies Council. This section will highlight some examples from the author’s experience of using the model as well as some excerpts from reports which have been completed as a result of the project. Three main areas are highlighted which stand out as exemplars of how the model holds practical use and value, in ways which enhance the sometimes contradictory theory behind it by blending instrumental and emancipatory aspects of the model. These areas are: i) the use of narrative, story and metaphor; ii) the ‘instrumental gateway’ effect, making use of knowledge in an affective light; and, iii) the practice of values and ethics within educational programmes.

i. Narrative, story and metaphor

In its palm, the Hand Model clutches the concepts of storytelling, narrative and metaphor – known in the language of the model as a ‘frame’ with which the other elements are linked together. Stories and the use of narrative have a long history within teaching from early years to higher education and within teacher training more plainly as a pedagogical tool (Egan, 1985, Saunders, 2011, Alterio and McDrury, 2003, Carter, 1993), but also explicitly for developing character and values and as an instrument in moral education (Tappan and Brown, 1989). Within the model, frames are the means of carrying sustainability messages and values through the educational experience. In one sense they are static conveyors of a single meaning pre-determined in order to promote pro-environmental behaviour through an educational programme. However, the frame also enables the educator to tell stories in order to transfer learning to other contexts, scales and situations – thus extending the sphere of meaning and creating connections between learners, their own communities, the human and natural environment and global society (see example in The use of narrative and metaphor within the learning process helps to bring together aspects of discovery and a synergy between experiences of learners. By making use of narrative approaches, we are prompted to conceive of “experiences [which] might articulate with each other in order to avoid discontinuous experiences” (Nicol, 2014, p. 455). By creating continuous experiences which involve emotional resonance with and between life-situations for the learner, a transfer of understanding can occur across scales, viewpoints and between contexts. From this perspective, rather than being seen as an either-or conflict between developing learner’s knowledge and promoting an emotive engagement with the environment, the two strands become complementary components to make space for wonder, curiosity and imagination within the learning experience, whilst being guided by a central theme (Judson, 2015).

ii. The ‘instrumental gateway’

In terms of the day-to-day work of outdoor educators, it is necessary for tutors to be able to work within the confines of a largely instrumental framework of mainstream educational institutions, while offering the possibility for emancipatory learning. In other words, where knowledge-based learning contributes to, and works alongside, an intrinsic and emotional engagement with the world. Sitting as it does in the space between these approaches, the Hand Model might offer tutors a practical guide for committing to a blended practice for OLfS. The concept of the instrumental gateway might offer a theoretical basis for the model’s application in this sense and is described below.

Christian Diehm eloquently argues that an intrinsic, deep connection with the environment normally reserved for strictly non-anthropocentric views of nature can be, and often is, achieved through instrumental first steps i.e. typical GCSE or A level fieldwork. A deep awe, respect and love for the non-human world finds its footing often through instrumental understanding, but given the right context, can lead to intrinsic and emancipatory learning, creating possibilities for deeper relationships with the natural world (Diehm, 2008). Diehm explains his fascination with trees which grew from the pages of an identification guide into a fondness which surpassed the initial instrumental basis, forming an experiential link between “becoming familiar with trees and coming to feel that they are among one’s familiars” (Diehm, 2008, p. 10). This type of ‘experiential link’ between understanding and relating to nature helps us to further understand the potential for applying both instrumental and emancipatory theory within a practical setting, and relates also to the narrative structure that the Hand Model provides for OLfS. When applied to the Hand Model practically, it appears that the notion that an experiential link may be formed between instrumental, investigative ‘field work’ and a deeper emotionally informed relationship with the world.

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### iii. Values and an ethic of care

The Hand Model prompts us to become conscious of the values which are instilled within educational experiences and makes use of the values framework forwarded by Common Cause to do so. It is postulated that in order to create the conditions suitable for learning for sustainability, experiences might be framed as to strengthen intrinsic values held within them. As noted previously, the orientation of learning experiences in order to provoke particular values is suggestive of a goal driven approach to education, which appears at odds with a more open-ended pedagogy consistent with a subjective approach found elsewhere in the model.

Throughout the course we attempted to centralise the idea of ‘value’ and to open up discussion on what this meant and what type of values were present in various activities and experiences. We had varying success with this. However, when we spoke more broadly about our relationship with the environment, our care for the world, for our work and for each other – suddenly things began to open up. We didn’t talk about care as if it was a set of qualities to include, or a spectrum of care along which some forms are better than others, we simply discussed our relationships. Sometimes the notion of disconnection and lack of belonging arose, while at other times interconnection and dependence were themes. It felt like there was less judgement inherent in this language than that which we were working with [in the Hand Model], rather a set of very personal experiences – in which there is no ‘right’ or ‘wrong’, only difference… I felt that the discussion which moved from values toward relationships and care for the world made the whole thing easier for the trainees to ‘own’, but we never explicitly linked this to any theory… perhaps doing so would have removed some of the spontaneity from the feeling.

The model asserts that educators should attempt to become conscious of the values instilled within the educational experience in order to create the conditions suitable for learning for sustainability. However, while the values framework put forward by the model is useful and has been used successfully in training sessions and workshops with FSC staff and school based teacher training, the practical application of these ideas in teaching practice is questionable. One reason for this is related to the goal-focused and highly defined nature of values as put forward in the model, whereas teaching (especially outdoor education) is highly dynamic and unpredictable. As such, the educator might lose sight of the underpinning values within experience, and would be better suited to make use of a more subjective ethical approach to inform teaching practice. This, rather than asking the educator what values are inherent in this experience, invokes a culture of understanding and prompts a shift in perspective for both educator and student.
Students engage in practical work on a farm as part of a geography field trip.

Such an approach can be found in the work on care ethics and ecological education (Smith and Williams, 1999, Tronto, 1993) which find their footing in practices of care and pedagogy rather than solely in theory. Indeed, care emerges in this sense from a relational ethical discourse which places at its centre the relationship between us and ourselves, between us and the world and between theory and action. Care must be enacted within the world for it to become a practice and in this sense care is better suited than a mere discussion on value for an action based education (Tronto, 1993). So too does a dialogue and enactment of care speak to aspects of empowerment which are presented as fundamental to the model. Making use of an ethic of care in our work requires placing emphasis on both social and ecological justice within educational programmes, and grounding this learning in action. Learners must see the worth of socio-ecological justice education in creating change in the world. An example of part of a course planned using the Hand Model to enact care through action is given in Figure 7.

On the last day, we wanted something which would bring the experiences of the week together in an inspiring manner, which would engage the students with their ‘head, hand and heart’. Although we had been discussing changes in the landscape and sustainability related to the natural and the human environment, there lacked a grounding of this rather abstract ‘theory’ in the real life practice of the world. We decided that we should visit a farm on the final afternoon to meet the farmer (Mike) for a farm tour and some activity. We met Mike at lunch time and he took us to see his farm… He showed us his animals and talked of life as a farmer. The students had many questions for him. Although we had carried out some data collection in the local villages in the morning, the visiting teachers had agreed not to collect data on the farm. Instead we helped out on the agroforestry project there, with two groups of students splitting off to weed runner beans, mulch fruit trees and plant and water squash. We had liaised with the visiting school to agree this in advance and to check protocol with school based risk assessments. The activity lasted for an hour, during which time the students were able to choose their own pace of work. Initial reluctance at getting hands dirty quickly gave way to enthusiastic participation. Upon arrival back at the field centre, we spent 20 minutes reflecting on the farm visit. The students had feelings relating to empathy for Mike, and his life as a farmer, and interrelated discussions from earlier in the week were revisited in the context of the farm visit. The relatively unstructured afternoon had provided a hook for students to reflect on the deeper [and practical] meaning behind the explorations of the week while experiencing a real world example of farm diversification and rural livelihoods.

CONCLUSION

The Hand Model has been developed to be applied within educational practice, and as such needs to work both as a component of the educational system it finds itself within, including in the context of field trips; and as a challenge – prompting practice to provide ‘deeper and more meaningful’ learning experiences which move beyond the knowledge and fact based paradigm, and to begin to work with emotional engagement and wonder. While the Hand
Model is only one of a number of such models available, it is hoped that this paper has provided insight into how the model might be used to further our thinking, develop educational approaches and forge connections in order to build Learning for Sustainability into outdoor education and fieldwork practice.

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REFERENCES


