Think Piece
Changing Thinking about Learning for a Changing World

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Introduction

As academics and evaluators working in the USA and Europe we are often asked to either assess the effectiveness of informal or free-choice environmental learning experiences, or to lend our expertise (coupled with solid visitor studies) to improve those experiences. What we encounter is an interesting conundrum: many environmental, conservation or preservation learning programmes or experiences start with goals or objectives that are extremely attractive to funders – changing visitors' or participants' understanding, attitudes or even behaviours in some profound fashion – and create a sense of importance and self-worth in those who devise these experiences. However, upon reflection and after a close analysis of the likely visitor experiences, many of these goals seem unrealistic, or seem to apply only for a small proportion of the target audience: those who are on the brink of changing. The reason for this apparent disconnect is manifold: the need to promise administrators, directors, agency heads, funders and donors 'impacts' and significant 'outcomes' leads to promises that are inappropriate or are difficult to meet; secondly, institutions operate under the banner of wanting to change – by themselves and through their own isolated efforts – those who are served by them; and mostly, those who devise and deliver these experiences may lack a deep understanding of the nature of out-of-school, informal or free-choice learning.

We will address the latter issue in this article since understanding the nature of learning that occurs outside the formal sector is relatively new and, in our experience, not widely shared. The purpose of this paper is therefore primarily to describe the main characteristics of what we refer to as free-choice learning for the environment, and to draw some conclusions on how this understanding can influence informal environmental education. We will argue here that a common perspective on education, namely that 'learning' results only or mostly from education, and that education occurs in schools and school-like environments, is too narrow a perspective in a world in which lifelong or lifespan learning outside formal schooling is becoming increasingly more important, and increasingly more recognised (Falk & Dierking, 2002).

Note: While we present this article as an argument for environmental education to better address free-choice learning, we want to make clear that formal education is a vital and necessary component in the life of an individual. It is, indeed, in the formal education system where most of the necessary tools for various literacies and learning competencies are developed – the very tools that are used throughout one's life to continue learning beyond school or university.

Learning – Beyond a Location

By now it is generally agreed that learning is a sensory-based process that involves cognition, affect, and skill (Bloom, 1956), and includes all forms of emotional learning, the ability to transfer what was learned, and the application of that which was learned in a classroom (or elsewhere) to other, new or novel contexts. There has been significant work in developmental psychology on the processes by which young children gain psychomotor skills and cognitive understanding; and, to a somewhat lesser degree, attention has also been paid to the affective development of young children. Lessons learned from early childhood education about the affective development of children are mostly (and not surprisingly) limited to the learning of a child; little effort has been made to extend our considerable knowledge of learning in the developing brain of children, teenagers and even young adults to learners of older ages or stages in life: adult learners who mostly learn outside of formal structures. This separation of study of natural learning as opposed to constructed learning in a formal setting is reflected by Schrank's (1972) biting observation that we learn by our senses up until the time we enter formal schooling at which point learning becomes 'non-sense' (p.1). Irony and sarcasm aside, it is only during our brief period of formal schooling that we are forced to learn, in lockstep with about 20 to 30 others, a content we haven't chosen – in a way that is determined by an authority figure (the teacher) who will assess our abilities through constant testing. After we leave school or university, we are again free to learn by and with our senses in the way we want. Even so, throughout childhood, there is considerable value given to sensory-based and affect-oriented developmental learning: sports, clubs, organisations and fraternal groups for youth are all considered to be 'developmental' in some sense. We tend to acknowledge that children need a variety of experiences to develop a moral compass, positive attitudes, a sense of self-worth and self-confidence, ways to deal with emotions and so on; in short, we see a pedagogical value in affective learning in and outside of formal schooling.

Upon entering adulthood there is a notable lack of appreciation for affective and developmental learning *as learning* [except maybe in cases where we are taught a 'life lesson' through emotionally difficult experiences like job loss, illness, death, divorce or similarly unpleasant experiences]. From childhood onward, with a few exceptions, there is relatively little focus in the literature on theories of learning in settings outside formal schooling or training. While many out-of-school venues such as museums, zoos, aquariums or nature centres declare their support for adult learning, most of their interpretation, exhibitry, programming or 'educational events' tend to be focused on children or 'families' even if the information and messaging (say about conservation in a zoo) is directed at the children with the adults in attendance.

Ultimately, and over the course of a lifespan, people learn most of what they know outside of school and formal learning arenas. Maslow (1954), Bruner (1973), Bloom (1976) and others have all suggested learning is a natural human process – learning does not begin and end at a specified time, or when someone external to the individual determines learning should occur. Many of us know that we have learned from a trip to a museum, zoo, or park; we have attended lectures or readings, read books that have taught us more than a good plot, and we

understand that there are times that we recall and use information that we obtained from the radio, television, newspapers, Internet, or magazines, or, for those communities where knowing is a different form of literacy such as experiential, from stories from elders, examples of cultural practice, and models of engagement. Most of us can certainly identify many situations in which we have gained knowledge and understanding from our experiences outside schooling, or even in our private sphere, where we learn from friends and family members through conversations and story-telling. Most of the free-choice or informal learning that occurs throughout a person's lifespan thus utilises skills – like functional literacy, for example – that are acquired mostly through schooling. It is an interesting paradox that even though most information is obtained outside the formal education system, much of the information available to us throughout our life is filtered through the tools learned in school, revealing that all learning is cumulative and that formal education provides us with the basic skills needed to participate fully in any of the learning opportunities that characterise informal or free-choice learning.

Often enlightenment of this incidental and truly informal nature is attributed to 'socialisation' within groups, but the socialisation contributes to the environment of how one learns, where one learns, and what is learned outside the formal learning environment. As noted by Jarvis (1986), 'since learning is a human activity, failure to participate in the educational institution does not mean that people are not learning' (p.10). As technology, global issues and other events continue to re-shape the world more rapidly than has previously been perceived, it is important to consider how people learn about the world around them. This paper chooses to explore some challenges in changing our thinking to truly reflect lifespan learning. We will explore some of the challenges connected to free-choice, informal learning in order to promote a realistic and appreciative perspective of lifelong and lifespan learning.

Informal and Free-Choice Learning

Learning, as suggested above, is situationally based in that the context of the learning or setting defines how learning will occur. Environmental education has long posited that good environmental education is good teaching and that lessons such as critical thinking will apply to a person's life beyond the educational experience. Such a belief *transcends* the situation. Even the frame 'good teaching' suggests that in this case, education is being tied to the *teaching* rather than the learning in the context. To this end, a question begins to emerge: what is it about *teaching* that might distinguish among settings and learning orientations that could inform practice for the betterment of learning? Museums, science centres, zoos, and other 'non-school' educational institutions and organisations would all argue that educational experiences are always driven by the learner. While from a learning perspective, and even from many operational perspectives, this is true, there is an inherent difference among formal, non-formal and informal education in the manner by which the educator or institution approaches the development of the educational experience.

Estimates within the USA suggest that, across a person's lifespan, approximately 3% of that individual's life is spent in school, university, training and professional development. There is a tremendous body of literature discussing, and often arguing, meanings of informal, non-

formal and incidental education (e.g., Faure *et al.*, 1972; Aikenpelu, 1980; Mocker & Spear, 1982; Maarschalk, 1988; McCombs *et al.*, 1991; Allmon, 1994; Heimlich, 1993; Cairnes, 2000). The authors believe that, for the purpose of instruction and planning, these distinctions are important and should not be minimised. Yet, for the *learner*, be it child, adult, professional, tourist, hobbyist, activist, parent or one of countless other roles, the boundary between life and all the non-schooled learning that occurs within it is seamless. The idea of free-choice learning shifts the perspective from that of institution to that of learner (Heimlich, 2005).

An oft-cited concern is that defining learning in out-of-school and lifespan education *versus* 'formal' education diminishes the value of what is truly lifespan, non-formal or informal education. One position heard in many situations is that defining learning as 'non–' or 'in–' formal reduces the value of the concepts, as the language itself uses a negative coupled with what is viewed as the positive (learning). These voices argue that a different term should be constructed for learning that occurs in places other than schools. One term that was initiated in museums and is quickly growing in the environmental and conservation fields is that of free-choice learning (see, for example, Falk, 2005).

Rethinking Our Thinking about Learning

If learning, then, is viewed from the vantage point of the individual across all situations and conditions, it takes on a perspective far removed from that of a child in a classroom. Commensurate with the tremendous opportunities are a series of alternative challenges to the ways we traditionally think about learning. As academics and consultant/evaluators are quickly able to identify, there are many misconceptions about informal learning by those who provide these experiences. Many of these problems lie in understanding what are attainable goals and realistic outcomes, given the different context of learning as compared to formal education. Some educators assume that visitors or community members attend to 'learn' what we want them to learn; others teach as if the participant is preparing to take a test – lots of facts, much directed information.

The problems appear to stem from a lack of understanding of the basic characteristics of free-choice or informal environmental learning, namely:

- Learners have their own agendas and desired outcomes
- Learners have their own motivations
- Learning is constructed meaning applied by the learner
- Learning is continual
- Learning is cumulative
- Learning is horizontal (it is synthesised across a variety of learning experiences)

Each of these is explored in greater detail below.

Learners have their own agendas and desired outcomes

In 1987, Beer found that slightly over half the visitors to one type of museum attended with learning as a purpose; most researchers (e.g., Cross, 1983; Hood, 1983; Miles, 1986; Hood & Roberts, 1994), however, have found the intentional learning to be much lower. The dominant

reason for visits found by these researchers was and continues to be social (see also Falk, Heimlich & Bronnenkant, in prep.). Visitors to institutions provide a tremendous potential audience for learning, but such learning must be based in the social interactions of the family or of social cluster of individuals. Learning is, at best, a secondary factor in attracting the visitor. The dominant agenda for a visitor or learner to any setting is to engage with others around a topic with which they identify. The informal educator must design the programme to support the learners' real agendas and build the institution's messages into the delivery. However, most educators assume that visitors are more similar to themselves than different in terms of desired outcomes from the visit.

The need of the individual drives what data are taken in, filtered, framed, and applied as meaningful. A strong dependence on human agency for learning leads to a bias in how we understand learning in the context of an individual's life (Pratt, 1993). The criticism of universality related to locus of control and the ability of all individuals to become self-motivated (Lee, 2003) reveals challenges to learning in marginalised, trans-cultural, cross-cultural and other situations where individuals may be discouraged from assuming these attributes (Alfred, 2003). The lesson for educators is to avoid seeing learners as a unified, generalisable group of learners, but rather to see the complex social constructions in which we operate. This position is both complicated and complemented by the environmental settings and contexts in which environmental educators work, and the unique relationships individuals have to those places that are related to the individuality of each person. Our messages are often competing with very real and visceral issues in individuals' lives.

People tend to go to those places or use those resources (e.g., television, newspapers, magazines) where they feel comfortable, places that are non-intimidating, user-friendly, and speak in the language of the uninitiated (Resnicow, 1994). Attractions such as museums, science centres, exhibits, parks and nature centres are often a draw and visitors to these attractions consciously or subconsciously seek to learn first about themselves and then about their cultural heritage – often implicitly in the sense of what of me and my history is in this place (Kramer, 1994). Note again how our message is relegated to an incidental role in the agenda of the learner. If a visitor, reader, viewer, participant does not feel grounded in the science of the institution or of the educator's programme that underlies the attraction or event, the likelihood of the experience being viewed as educational is reduced (Falk & Dierking, 1992; 2002).

Learners have their own motivations

Falk (2006) reviewed the literature and identified a wide variety of investigators who explored why people visit museums and other lifespan learning settings/attractions, these studies resulting in various descriptive categories of visitors. Recently, however, researchers have been looking at connections between visitors' entry motivations or characteristics and what they gain or learn from a visit or a programme (e.g., Falk, Moussouri & Coulson, 1998; Falk & Storksdieck, 2005; Packer, 2006; Bronnenkant, Falk & Heimlich, in prep.). In his review, Falk expanded on the suggestions made by Doering and Pekarik (1996) and Pekarik, Doering and Karns (1999) that visitors enter with an 'entry narrative' which becomes self-reinforcing and directs both learning and behaviour. Learners' satisfaction is then directly related to how the

individuals' narrative is supported or not. Although people have diverse reasons for choosing to visit museums or learning settings, their reasons appear to cluster around a limited number of motivations – motivations that seem to be strongly related to individuals' 'situated' identities (Falk, 2006). People often engage in activities with intentions that include learning, but the individual may not even be aware of the many intentions for making a decision to participate (Withnall, 1990).

To change the way we think requires an understanding that in lifespan learning, entry motivations and expectations differ from those expected and often anticipated by the educator (Morstain & Smart, 1974). It would be wonderful if people attended to our messages with the intent to learn; realistically, learning may be a secondary benefit – if even seen as a benefit from most people's engagement in our programmes, events, messages and efforts. As noted by Houle (1961) several decades ago, people engage in activities for personal goals, for the sake of participation, or for social reasons. Participation in lifespan environmental learning is voluntary and therefore cannot be prescribed in the same traditions as the education of children and youth (Rudd & Hall, 1974), and the content of such environmental education must be consistent with the interest and needs expressed by the target audience(s) to provide motivating forces for the individuals to desire to learn (Boone, 1985).

Learning is constructed meaning applied by the learner

What an individual truly learns is dependent on the meaning of the information to the person's life at that moment in time (Merriam & Clark, 1993; Knowles, 1996). How an individual perceives options for both choice and control appears to be necessary for self-actualisation or the willingness to take in new information and ideas (Bem, 1972; Steele, 1988; Csikszentmihalyi, 1990) which, in turn, sustains the integrity of personal identity (Heron, 1992; Marcia, 1993; Duval, Silvia & Lalwani, 2001). Several leisure researchers (e.g., Havitz & Mannell, 2005) have suggested that visitors to leisure settings enact identities specific to those settings; Haggard and Williams (1992) suggested that individuals affirm the nature of their identities through their choices and participation in leisure activities. Such findings are consistent with concepts in adult education related to social role, social identity and perceptions of self defining those activities in which an adult engages, and the outcomes from such participation (e.g., Kidd, 1973; Knowles, 1980; Galbraith, 1998; Dirkx, 2001).

Learning is continual

Learning is 'rarely linear and is always highly idiosyncratic' (Falk, 2005:269). How a person learns is unique to the individual (e.g., Rosenfeld, 1988) and is contextualised through the individual's personal, social or sociocultural and physical considerations (Falk & Dierking, 1992).

A person is continually surrounded by stimuli: based on where they are in their lifespan (developmental), how they receive and understand data or are hardwired neurologically (biological), their dominant motivation at the time (social), and the various ways they prefer to engage (characteristics), people learn in different ways at different times. As the social roles and societal expectations of an individual change over time and life expectations, it is necessary to consider learning as an integration of social, biological, developmental and characteristic

learning structures (Clark & Caffarella, 1999). Yet few individuals are conscious of such learning. This becomes problematic in that learning is often defined as cognitive tidbits, factoids, or recall – many, if not most people, are neither aware of nor believe in the self-mentoring strategies that humans continually employ as valid learning: talking to people, reading, watching how people do things, taking a class, and simply figuring things out (Darling, 1986, cited in Cyr, 1999).

Learning is cumulative

Most things that are 'learned' are slowly accumulated over time; an individual develops a means of making meaning from the wide array of information available and applying the meaning into their lives as is necessary or appropriate (Carlsen, 1988). Jarvis (1987) suggests when an individual has what is for them a significant experience, they identify that moment as learning, but that the individual may not be aware of the many different exposures to that message which have prepared them for this 'significant' experience. In many situations, learning is the result of exposure over time, but in the learner's mind is *compressed* into a single situation (Fischbein, 1999). Anecdotally, many educators in free-choice environmental settings such as zoos relate stories of individuals who 'remember visiting last year when you had X on display', with many of these comments coming from people who visit often – yet the exhibit in question was displayed several to many years in the past. Davidow (1996) notes compression as an issue of information equality and that learning should include time compression in the consideration.

Learning is a summation of data gathered over time; as a learner, one is rarely cognisant of the cumulative gathering of data that leads to knowledge. Dealing with compression and the cumulative effects of learning requires supporting what is natural learning. Effective free-choice education entails ensuring that experiences are affectively driven and are content or cognitively rich and engaging (Lane, 2004; Bain & Mirel, 2006). The means by which such structures are accomplished is to construct contextually rich learning materials embedded within a coherent educational content base – in other words, focusing on message and mission (Cassady & Mullen, 2006).

Marketing has long understood the need for repeat messaging and the power in focusing messages and social marketing has applied this to conservation action (e.g., Mckenzie-Mohr & Smith, 1999; Hanlon, Lane & Romano, 2000; AED, 2001; Maibach, Rothschild & Novelli, 2002). Educators could do well to apply the lessons of narrow messaging, supported by significant data, to free-choice learning. In a similar vein, the idea of content-rich, affectively driven learning is of tremendous value to environmental educators in lifespan, free-choice settings.

Learning is horizontal

Learning occurs seamlessly across experiences and venues (Falk & Dierking, 2002; Gutierrez & Rogoff, in press): what we learned about conservation in a zoo might get reinforced during a NOVA show and then entice us to read an article in *TIME* magazine about threats to biodiversity which makes us pay attention to a mailing asking for money to protect a habitat somewhere. We may not be deliberate in our efforts to combine learning experiences, but we create a social milieu in which our identity and sense of self gets constantly reaffirmed (and sometimes challenged), and we experience and learn about segments of the world that overlap

with our personal needs and desires (Rounds, 2004; Falk, 2006). Informal, free-choice learning occurs in a landscape of learning opportunities that can be mutually reinforcing.

Conclusions: Changing the way we think about teaching and learning in informal/free-choice settings

Learning is an individual ontological process, and in that sense there is no such thing as informal or formal learning. What we have shown, though, is that learning in different contexts is guided or supported by very different forces, and that our outcome expectations for learning processes ought to depend on the context within which learning occurs. Lifelong or lifespan learning outside of classroom structures is different from classroom learning, and we are well served to consider some of the following ideas when providing learning experiences for informal or free-choice learners, particularly if that learning occurs within the context of environmental education or education for sustainability (EfS):

- Understand the often complex agenda and the mixed motivations of free-choice learners. Free-choice learners who visit zoos, watch a documentary or visit a national park often seek to combine enjoyment and learning experience: for them, learning occurs through fun, and is mostly highly personal in nature. Jan Packer even termed this type of learning experience as 'Learning for Fun' (Packer, 2006). Environmental topics or issues of sustainability, however, cannot always be presented from a positive angle. A parallel concept to 'fun' and 'enjoyment' within the context of environmental education (EE) and education for sustainable development (ESD) could be 'satisfaction' and 'fulfillment' – terms that acknowledge the emotional need of the free-choice learner and the intrinsic motivation that guides the learning process.
- Understand your target audience and define it well. A programme that seeks to address everybody is most likely satisfying no-one as it will likely fail to serve individuals' needs, wants or expectations sufficiently. Solid front-end evaluation or needs assessment is crucial and is best embedded in a programme development model that links audiences to expected outcomes through clearly defined experiences.
- Lifelong, free-choice learners are not empty vessels: they come with prior knowledge and understanding – sometimes with heavy misconceptions and other times with knowledge exceeding that of the educators; they bring with them awareness, attitudes, interest and intentions and a lifetime of experiences leading to this moment. EE and ESD activities should therefore not just ask: who is the target audience and what is their agenda, but ought to include elements that recognise and even actively utilise existing knowledge, interest, skills and draw on previous experiences. Again, solid front-end evaluation is needed to uncover these aspects of one's audience, particularly since we know that learners are not necessarily open to new ideas if those ideas are not embedded into the learners' pre-existing cognitive and emotive backgrounds (Storksdieck, 2006).
- In contrast to a school environment, where educators can make some reasonable assumptions about the background of the students that they will address, free-choice or

informal audiences tend to be heterogeneous, even when they self-select to be present in your programme. It is only possible to understand your audience when you involve them, or when you talk to them, survey them or otherwise engage with them. This does not necessarily need to involve costly structured evaluations. One can provide many low-cost and low-effort opportunities to hear from participants, including brief conversations, short feedback forms, debriefing conversations – so long as one keeps an open mind for the need to hear from one's audience.

- There is no such thing as an average person: assuming learners in non-school settings are seeking the same outcomes from a single experience is to set up an educational programme for failure. Rather than understanding your 'audience', consider your many audiences – smaller groups with similar backgrounds can be addressed in similar ways, but the most eager participants and listeners should not be guiding a programme.

- Your impact, or audience outcomes, should be defined by target audiences and carefully calibrated to what is possible: don't overestimate the depth of impact you can achieve. Some audience members might be ready to change their behaviours, others might still be skeptical and need more convincing, but both could be in your audience. And sometimes you may have to 'speak to the choir' and support those who simply use a programme in EE or EfS to reconfirm their commitment to helping the environment (Storksdieck, Ellenbogen & Heimlich, 2005).

- Be aware that teaching as experienced in schools and universities is a bad guide to teaching in informal settings. People make their own meaning when they are not assessed and they take away what they want from an informal learning experience. Sometimes, what is truly learned is not realised in the learner until a later time. This is of critical importance to EE and ESD which operate from the expectation that the learner starts or remains on a path that ultimately allows the learner to make educated decisions which will take environmental or sustainability considerations into account. In EE and EfS we can easily win a battle, but lose the war, so to speak. For instance, a public speaker at a community event might have all the best arguments for why global warming is partially caused by humans, and provide a whole set of options in how we can address the issue as citizens and consumers; and yet, if that speaker does not understand the audience, their concerns, needs, and beliefs, and why they may still be skeptical or reluctant, or at least considers that having the facts on one's side does not suffice, the impact of the lecture could be rather small (or even smaller than a lecture's impact generally is).

- And lastly: Work with others. Integrate your offers with experiences that can occur afterwards (including repeat experiences at your site) and that occurred before. Think of your educational programme as one of many horizontal learning opportunities on any particular topic. There are likely other providers of EE or ESD in a community or a region. Research on learning in elective environments has shown that the cumulative effect or repeated exposure in a variety of settings and situations works best in moving free-choice learners along a path to better understanding, increased awareness, positive attitudes, and ultimately behaviour that is based on reflection of many factors, including

the learners' own disposition. Local EE and EfS should therefore be coordinated in ways that make them mutually enhancing and that provide learners who are at various stages of awareness and readiness to act in environmentally conscious ways that fit their needs.

It is our experience that a heightened appreciation for free-choice or informal learning across people's lifespans can help academics in their study of these experiences, and practitioners in providing highly satisfying and educationally valuable experience for their audiences.

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