What is learning … and why do museums need to do something about it?

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1.   What is learning?

If I went around this room and asked every person to tell me what they think learning is what would come out? One thing that may come to mind is school, teachers, hard work. Some people may talk about how they learn – their learning styles. Another could be change or deep learning – what are the big things that cause changes in themselves. Still others may think about the context of learning – a time, a place, a feeling. Many may articulate the social processes of learning: how learning happens with others, whether in a leisure situation, school, university or work context. One thing that affects what we say is our own personal experiences of learning. Another is our professional background and training, as well as cultural experiences and lived histories. Our age, gender, occupation and socio-economic status are other factors at play. Learning is a very individual, complex, and, to some degree, an indescribable process: something we just do, without ever thinking too much about it.

The philosopher Rene Descartes' thoughts about the fundamental nature of existence were grounded in the processes of thinking and learning: 'I can doubt everything except one thing, and that is the very fact that I doubt. But when I doubt I think; and when I think I must exist'(Hergenhahn, 1982, p.37). This reasoning led to the formulation of his famous saying – 'I think, therefore I am' (Hergenhahn, 1982, p.37). It could be said, therefore, that learning is essential to our existence, a fundamental part of humanity, something that separates us from other species. It is an individual and social process that humans are constantly engaged in, both consciously and unconsciously. As management theorist Peter Senge (1992) said: 'Real learning gets to the heart of what it means to be human. Through learning we re-create ourselves. Through learning we become able to do something we were never able to do. Through learning we reperceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the general process of life. There is within each of us a deep hunger for this type of learning' (p.14).

Learning theories have been put forward since the earliest Greek philosophers Plato and Aristotle. Aristotle, in particular, in using empirical observations about biological and physical phenomena, theorised that all knowledge was based on sensory experiences that had been processed by the mind (Hergenhahn, 1982). However, it is interesting to note that he located the mind in the heart! Aristotle had a profound influence on the further development of both educational and psychological theory, probably being the first one to associate learning with pleasure, through his ideas about the inextricable links between happiness, virtue and contemplation, and the '… idea of liberal education as a leisure time activity and as an end in itself' (Bowen & Hobson, 1987, p.87). Perhaps the first exponent of lifelong learning as an enjoyable practice engaged in by humans for their own satisfaction?

In an historical review of learning theories Malone (1990) observed the close link between learning theory and the development of psychology. He positioned learning very much in how we see ourselves and what we make of our lives: 'Learning determines to a great extent what we will become in life, who we will consider friends, where we will call home, what we will consider worth doing, and what we will call right and wrong. It even determines what we will call real and unreal. … learning is largely responsible for creating our world' (p.1).

From the literature three major classifications of learning theories have been identified: behavioural, such as Skinner, Watson; cognitive, Piaget, Bandura; and social through the work of Vygotsky, Lave and Wenger, Rogoff. Each has its own set of theoretical assumptions, main advocates and vocal challengers. However, it is hard to place different theories into definitive categories as many share common characteristics, used in different ways to suit a range of circumstances. Therefore, given the individual and social nature of learning, the study of it needs to be approached from many different angles (Dierking, 1989, 1992; Hergenhahn & Olson, 1997; Malone, 1990; Woolfolk, 1998). Whichever theory is foregrounded is largely dependant on both the theoretical perspective of the person, their own background and training, and their beliefs about how knowledge is created. To a large degree, whether we think that knowledge is acquired independent of the learner or whether it is constructed in the mind by the learner is an important component of how we view

learning and what epistemological path we follow (Hein, 1997, 1998). This is a key issue for museum practice as we will explore later.

1.1   Learning Defined

Throughout the literature a variety of definitions of learning have been proposed. Woolfolk's (1998) definition encompasses a range of the theoretical approaches: 'In the broadest sense, **learning** occurs when experience causes a relatively permanent change in an individual's knowledge or behaviour. The change may be deliberate or unintentional, for better or for worse. To qualify as learning, this change must be brought about by experience – by the interaction of a person with his or her environment. … the changes resulting from learning are in the individual's knowledge or behaviour' (p.204-205, original emphasis).

As museums are essentially experiential places visited by a wide range of people within social groups (Kelly, 2001a), the social aspects of learning are critical. Wenger (1998) identified a number of principles of learning based on a social perspective, concluding that it:

- was inherent in human nature
- was first and foremost the ability to negotiate new meanings
- created emergent structures through renegotiating meaning through experience
- was fundamentally experiential and fundamentally social
- transformed identity
- built personal histories in relation to histories of our communities
- required an individual to deal with boundaries
- was a matter of social energy and power
- included engagement, imagination, and alignment
- involved an interplay between the local and the global (p.226-228).

He summarised by stating that '… learning cannot be designed: it can only be designed for' (p.229).

Experience is a key factor in learning and formed much of the basis of the work of John Dewey (1938). Dewey believed that the role of education was to foster and encourage a love of learning. He saw learning in it's broadest sense as a lifelong individual and social process. Learning is part of the soul, a way that we appreciate and value the world, extracting meaning from a wide range of experiences in order to

create meaning and help shape future experiences. My doctoral research so far is finding that whilst people are able to talk about what *was* learning (i.e. acquiring new facts, skills, knowledge), it is more difficult to articulate what the *word* learning actually is. This personal nature of learning is very much emphasised, as people explain it through their own perspectives and experiences.

In my pilot qualitative work for my research I found that people talked about learning in terms of place (where learning happened); people (who learning happened with); tools for learning (how we learn); motivations for learning; and outcomes of learning, which moved from information, knowledge and skills to new insights, changed attitudes and self-perception (Kelly, 2002). So far, people describe learning through discussing their own personal *way* of learning and how this impacts on them as an individual. These ideas are being further developed and tested through a quantitative study. A set of eleven statements about ways of learning and outcomes of learning were developed. Each statement has been rated on the importance to the individual by two samples of people so far: 300 Sydney adults via a random telephone poll (Market Attitude Research Services, 2002) and, at this stage, 55 adult visitors to the Australian Museum through an onsite survey. The statements being tested are shown on Table 1 with results for high ratings only (that is, a score of important or very important).

Table 1. Learning Statements

	%age rating important/very important	
	PHONE SURVEY (n=300)	VISITOR SURVEY (n=55)
Learning in a physical, 'hands-on' way	**92**	**80**
Learning when the information provided is of immediate interest to me	**91**	**82**
Learning that builds on what I already know	**88**	**84**
Learning that specifically fits with how I like to learn	81	64
Teacher-led learning at school/other formal place	63	45
Being told what to learn	21	7
Constructing meaning based on my own experiences	**90**	**87**
Changing how I see myself	64	56
Seeing something in a different way	86	**84**
Learning with and through others	85	73
Learning new facts	**87**	76

A preliminary analysis of these results shows that while the top five statements are pretty much the same there were differences between samples, particularly in the order of them. For Museum visitors, constructing meaning based on their own

experiences; seeing something in a different way; learning that builds on what they already know; learning when the information provided is of immediate interest and learning in a physical/'hands-on' way were the most important in learning something new. With the general sample, learning in a physical/hands-on way; learning when the information provided is of immediate interest; constructing meaning based on their own experiences; learning that builds on what they already know and learning new facts were the key statements. Analysing these on demographic factors as well as more statistical testing on differences between samples should unpack these results further. It is interesting to note that for both samples the statement *being told what to learn* was of low importance!

Although not yet fully analysed, when asked what learning is in the onsite survey, visitors to the Museum are saying things like:

- *Passing on information or knowledge from one generation to the next.*
- *Opening the mind to new experience.*
- *Expanding your knowledge about an area by a variety of means.*
- *Process of applying information and skills.*
- *Engaging with the world in a way to discover more about it and make sense of things. Finding your place in the world.*

These are quite amazing given that it is off the top of their heads!

2. Why learning?

Museums have a '… multifaceted, outward looking role as hosts who invite visitors inside to wonder, encounter and learn' (Schauble, Leinhardt, & Martin, 1997, p.3). Why is learning something that museums should be aware of, researching and responding to? Learning is a critical issue for museums in the future for four reasons.

First, through the many studies we have conducted here at the Museum and others I have found in the literature, the main reason people say they visit a museum is to learn. They talk about experiencing something new, doing something worthwhile in their leisure, enjoyment, being with others, to actively participate, to increase their knowledge about the world in general and learning. Interestingly, they also believe that being entertained is very important. For example, in a survey of 413 Australian Museum visitors, 77% said they visited museums in general to experience something new; 71% for entertainment; and 71% for learning (Kelly, 2001a). A study of visitor agendas and museum learning found that people who visit museums value learning,

seek it in many ways and are usually better educated: 'The primary reason most people attend museums, whether by themselves or with their children, is in order to learn. … [therefore, they are] likely to see museums as places that provide opportunities for them to expand their own and their children's learning horizons' (Falk, Moussouri, & Coulson, 1998, p.40).

The second reason underlying the importance of learning is that research has shown time and time again that museums are places where learning happens (Borun, Chambers, & Cleghorn, 1996; Falk & Dierking, 1992, 1995, 2000; Griffin, 1998; Hein, 1998; Hein & Alexander, 1998; Hooper-Greenhill, 1994; Kelly, 2000a; Leinhardt, Crowley, & Knutson, 2002; McManus, 1993; Moussouri, 1997; Paris, 1997a, 1997b, 2002; Paris & Mercer, 2002; Piscitelli & Anderson, 2000). As Hein and Alexander (1998) note: 'This sense that museums make a major contribution to education, broadly understood, is widespread. Personal stories, visitor studies research, and the historical record of museum education all testify to the novel experiences, new insights, profound impact, and even life-changing revelations that museum visits can offer' (p.9). As one participant in a focus group of parents conducted by the Australian Museum stated when talking about a past visit to a *Spiders!* exhibition: 'They're teaching themselves in their own way basically. They're actually zooming in on something that interests them rather than you saying "look what about doing this, doing that". When you go to a museum there's so many different things you can look at and they're actually choosing the bits that interest them' (Kelly, 2000b, p.2).

The third reason that museums need to do something about learning is that they are increasingly being required to measure and report on their value to stakeholders, funding agencies and the public. Measuring the political, social, personal, economic and environmental impact that museums have on their communities is becoming an important social and political imperative (Falk, 2000; Freedman, 2000; Persson, 2000; Sheppard, 2000). What better way to do this than showing the variety of rich deep learning experiences that happen across many different audiences both during and after a museum visit? A study of science centres found that although there was good information about what people were learning there was less on the *value* that they had within the broader community in a public, political and economic sense (Garnett,

2002). Evaluating for social outcomes and triple bottom-line reporting that focuses not only on financial performance, but includes community and environmental returns (Crawford, 2002) will need to be urgently considered by museums, and one way that learning research can be directly influential in a policy arena.

This leads to the final reason that we need to study museum learning – if museums provide enjoyable experiences that meet visitor needs could they be accused of dumbing down? Dumbing down is seen by many as a direct challenge to our professionalism and authority, with an emphasis on entertainment being at the exclusion of education and learning (Kimmelman, 2001; Napier, 2001). Of major concern is that by providing experiences designed to boost visitor numbers, there could be less emphasis on content learning and scholarship, with museums serving only to satisfy the expectations and requirements of funding bodies, sponsors and governments. Can entertainment, enjoyment and learning co-exist? Can museums be popular without losing their educational role and focus? Are we really 'Disneyfying' museum experiences? And is this such as bad thing? These are complex issues that are beyond the scope of this paper, but are worthy of further consideration and debate. To date, these arguments have taken place solely from the *within* the museums industry through the museological literature and the media, without either seeking views from visitors about the roles they think museums could play in learning, education and entertainment or an understanding of the work that has been already undertaken to document the impact of museums on their visitors.

3. Museum learning theories: do we have one? Do we need one?

In the museum learning symposium, *Public Institutions for Personal Learning: understanding the long-term impact of museums*, held in Annapolis, U.S. in 1994 (Falk & Dierking, 1995), it was proposed that museums needed a coordinated view about learning that distinguished them from other formal and informal places of learning. It was felt that '… previous attempts to measure and define learning in museums lacked both a clear focus and a well-formulated theoretical underpinning' (Falk & Dierking, 1995, p.9), and that research was urgently needed to clarify what and how people were learning in museums, how this enriches their lives and the role of museums within broader educational frameworks.

People use museums as one of a wide range of information resources. In an ethnographic study of a family museum visiting (Ellenbogen, 2002) it was found that the family studied used a variety of diverse places for learning, including museums, airports, office lobbies and university lounges, and that they weren't bounded by borders established by these institutions.

The quantitative study for my doctoral research also asked about sources that people use when learning something new. People were asked to rate nine resources that people use when learning that had emerged from my pilot studies, as shown on Table 2.

Table 2. Resources Used in Learning

	%age rating important/very important	
	PHONE SURVEY (n=300)	VISITOR SURVEY (n=55)
Other people	87	51
Books/libraries	85	85
Museums, galleries, other cultural institutions	76	73
Work colleagues/peers	61	65
Internet/websites	61	58
Universities, formal education courses	59	67
Television programs	57	36
Adult education courses	53	55
Computers/CDROMS	39	35

As this shows so far, lots of incredibly interesting results have come through. In the phone survey of 300 Sydney adults, *museums, galleries and other cultural institutions* were seen as very important as resources for learning by 76% of the population, third only to *other people* (87% of the population) and *books/libraries* (85% of the population). It is worth noting that this question was asked without indicating that a museum or gallery was sponsoring the research! Unsurprisingly of the 55 Museum visitors surveyed so far, 73% rated *museums, galleries and other cultural institutions* second in importance following *books/libraries* (85% rated important). And what was the lowest? Computer programs/CDROMS (53% rated not important). These results are being further examined in terms of demographic patterns, including visitation, and will be repeated in other research projects.

More recently, Paris and Ash (2000) felt that formal education sites had a lot to learn from informal environments, such as museums. They argued that usually theories from formal educational contexts are taken and adapted to museums and other

informal environments, rather than what could be a shift the other way. Schauble, et al (1997) highlighted that the need for an underlying theory of museum learning research was to assist in unearthing questions that need studying, to point to what is central in findings and provide an integrating structure. What is required, therefore, is a museum learning community of practice (Lave & Wenger, 1991) where research is theoretically based; undertaken across a range of institutions; collaborative, both within the industry and the wider research community, especially universities; longitudinal; creative, innovative with wide ranging methods; and related to other learning experiences, showing connections and relationships (Kelly, 2001b), which is one of the major aims of today's seminar: to start something happening along these lines.

In the development of museum learning theory several models and theories have been proposed. The two I will focus on are constructivism and sociocultural theory. Constructivism is a theory of learning that focuses on the learner and the personal meanings they make based on their prior experience, knowledge and interests. Jeffrey-Clay (1997) pointed out that 'Constructivist theory holds that prior knowledge is of primary importance. Rather than learners being empty vessels into which information can be poured, they come … with a wealth of knowledge already organised. It is upon this knowledge structure that learners hang new information, creating new links to their pre-existing knowledge. To learn meaningfully, a person must integrate new knowledge into his or her conceptual structure.' (p.3). People recognise that learning needs to build on existing knowledge. My quantitative study showed that 88% of general adults and 84% of Museum visitors rated *Learning that builds on what I already know* as important/very important.

George Hein (1992) proposed a set of nine learning principles that emerged from constructivist thought:
- learning is an active process of constructing meaning from sensory input
- as they learn people learn about the process of learning, as well as content
- learning happens in the mind
- language and learning are inextricably linked
- learning is a social activity and happens with others

- learning is contextual, in that we learn in relation to what we already know, our beliefs and our prejudices
- previous knowledge is a pre-requisite to learning
- learning happens over long periods of time, through repeated exposure and thought
- motivation is essential for learning.

However, the challenge for museums in providing constructivist learning was articulated by Lois Silverman (1995) who posed this question for museums: '… the more personal and subjective ways in which visitors make meaning (such as through life experiences, opinions, imagination, memories, and fantasies) are at best ignored and more often invalidated in museums, where they tend to be regarded [by staff] as naïve and inappropriate' (p.165). Is this still the case today? This is a critical issue in understanding what learning experiences museums are constructing, given that my quantitative study found that 90% of general adults and 87% of museum visitors thought that *constructing meaning based on my own experiences* was important or very important in their learning.

The second theory I want to explore is sociocultural theory. This came from the work of Lev Vygotsky, who first proposed that learning was a socially mediated process where learners, in his case adults and children, were jointly responsible for their learning (Daniels, 1996; Falk & Dierking, 2000; Hansman, 2001; Matusov & Rogoff, 1995; Schaffer, 1996; Vygotsky, 1978), accounting for and making explicit the '…unplanned intersection of people, culture, tools and context' (Hansman, 2001, p.44). In a sociocultural model '… learning is not something that happens, or is just inside the head, but instead is shaped by the context, culture, and tools in the learning situation' (Hansman, 2001, p.45).

Schauble et al (1997), argue for a sociocultural approach as an appropriate theoretical framework in museum learning research as it accounts for meanings made within a social context, rather than facts learned, focussing on the interplay between '… individuals acting in social contexts and the mediators – including tools, talk, activity structures, signs and symbol systems – that are employed in those contexts' (p.4). In a similar vein, Matusov & Rogoff (1995) stated that: 'Museums, as educational

institutions, provide opportunities for people to bridge different sociocultural practices and, through this process, to bridge different institutions and communities' (p.101). In her work with children and their conceptions of natural phenomena such as the weather, Robbins (2002) proposed a way to construct research within a sociocultural framework. Questions and tools need to account for relationships, interactions, cultural contexts, artefacts and tools in ways that are familiar to and comfortable for the subject of the research: '… the emphasis shifts from focus on cognition as an individual construction, to examine how children's understandings and meanings develop within particular social contexts' (p.5). This is particularly applicable to the study of the learning experiences that happen in museums, moving from a focus on the individual to understanding the sociocultural.

Paris (1997a; 1997b) outlined the way that sociocultural views of learning could be integrated into a theory of museum learning. He argued that in order to facilitate meaningful learning, museums need to create environments that encourage exploration and enable meaning to be constructed through choice, challenge, control and collaboration. This leads to self-discovery, pride in achievements and, ultimately, learning, where visitors '… may "learn" more about themselves and their experiences through reflection' (1997a, p.23). This has been described as the culmination of a deep learning experience or 'changing as a person' through developing insights and understanding, applying this in a different way and seeing the world and yourself differently (Kelly & Gordon, 2002; Marton, Dall'Alba, & Beaty, 1993).

Museums are sites where a sociocultural framework could be applied and tested to learning, since most people visit in some type of social group with specific prior interests and knowledge, they are mainly free-choice, with sets of tools provided by museums for visitors which they use to make their own meaning both individually and as part of a community. However, there has been less emphasis in the museum learning field about using this approach as a contextual framework for studying learning (see for example Falk & Dierking, 2000; Fasoli, 2001; Schauble et al., 1997). The research approaches taken by Barbara Rogoff (1997) may be an appropriate way to start unpacking what is happening in museum learning. Rogoff proposed using three planes of analysis – the personal plane focussing on the individual, the interpersonal plane concentrating on interactions and guided

participation, and the community or contextual plane which centres on artefacts and tools learned through historical apprenticeships or active guidance. I am proposing that we could adapt this as a model for researching and explaining museum learning, as shown in Figure 1.

Figure 1. A Sociocultural Approach to Museum Learning (a work-in-progress!)
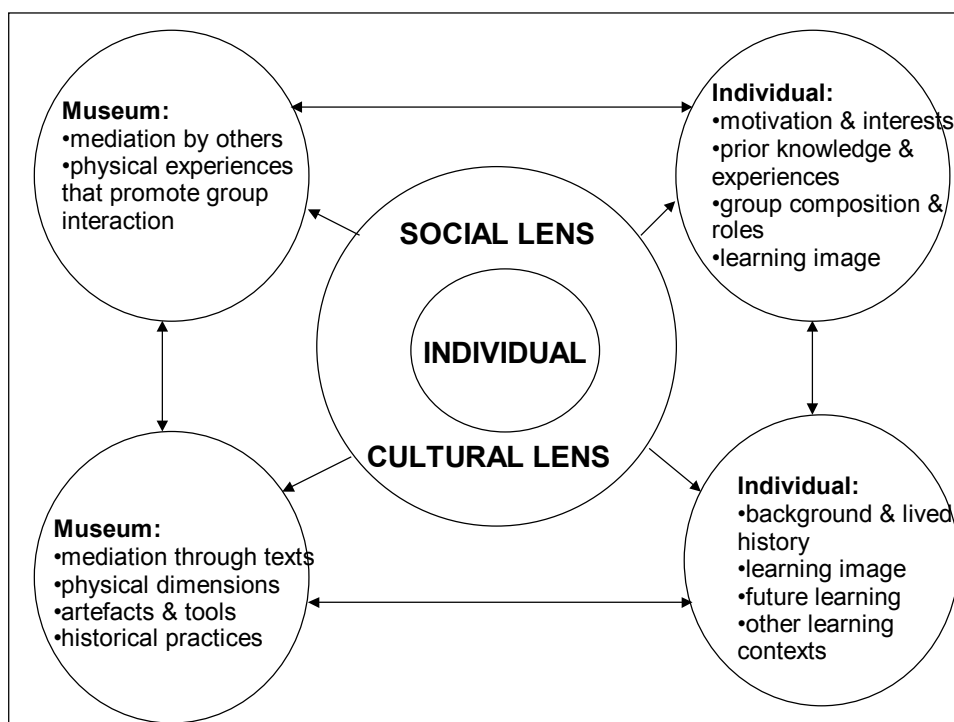
In this model we would look at the individual and the museum through both social and cultural lenses, focussing on ways that museums mediate experiences and the characteristics of the individual. It is all interlinked and co-dependant, which makes studying learning complex and challenging, yet very interesting.

4. Towards a view of museum learning: what does it look like?

I am working on an evolving definition of museum learning based on both the literature plus my own work so far. I believe that: '[l]earning is a dynamic process dependant on the individual and their environment within a social context that focuses on some change. … Ultimately, museum learning is about "changing as a person": how well a visit inspires and stimulates people into wanting to know more, as well as changing how they see themselves and their world both as an individual and as part of a community' (Kelly & Gordon, 2002, p.161).

From a synthesis of the literature and studies conducted to date it is concluded that museum learning experiences are enhanced through:

- a good understanding of the learner's prior knowledge, experiences and interests through a rigorous program of front-end evaluation
- self-direction and choice in interpretive styles and levels of information provided
- opportunities to satisfy intrinsic motivation through immersive, flow and deep learning experiences
- the opportunity for social learning through designing for conversation and group activity
- objects and other real material to actively use and manipulate
- mediation through knowledgeable others who facilitate discussion and sharing of opinions and understandings
- many layers of content
- opportunities to engage in critical thinking and questioning
- real-life experiences
- relevance through making explicit why it is important to know something.

These views are subject to further development, debate and testing, and are offered as a way to think about the experiences that we are providing for our visitors and how we can maximise their learning. What are our underlying epistemological beliefs and even what do we think the very essence and role of a museum is? How are these manifested through our practices? Our historical and contemporary practices need to be looked at and questioned. How will museums change to be truly visitor-centred? How are they structuring the visitor experience to provide for meaningful learning that fits with how visitors say they like to learn? In her work in art museums, Knutson (2002) stated that '… a closer examination of the curatorial framework – the intentions, strategies, and beliefs that inform the development of exhibitions – may provide valuable insight into our understanding of how art museums construct learning experiences' (p. 5). This is an issue that will be further explored today.

5.   Issues/challenges for the day

In summary, museum learning is 'messy' and complex and studying it is challenging and requires a range of responses. Therefore, the papers today reflect this with plenty of time for us to talk and learn together:

1. How can we 'measure' learning? Janette Griffin will discuss methodological challenges across range of audience groups and how a team of people is researching this through the MARVEL project.

2. Francesca Beddie and John Cross from Adult Learning Australia will look at adults as learners and how museums can tap into government policy on lifelong learning.

3. How can we work together to get the most out of research and what cultural institutions and universities have to offer? Barbara Piscitelli will take us through a case study of a large collaboration of organisations in Queensland and lessons learned from that.

4. Solving problems and moving ahead – the panel will look at a range of issues such as what we are basing our educational practices on; what gets funded; how can we use research; and planning/implementing a research project as well as looking at how we can convince others that it's important.

5. From this we will have a final wrap-up and discussion of how next to proceed. We are fortunate that Kimberley Pressick-Kilborn, from Sydney University and UTS is with us making notes and highlighting the main features and outcomes of the day. The seminar will be followed by a book launch and further opportunities for discussion and fun.

In 1969 the eminent psychologist and humanist Carl Rogers said that learning means '… to free curiosity, allow people to go charging off in new directions dictated by their own interests; to unleash a sense of inquiry; to open everything to questioning and exploration; to recognise that everything is in a process of change' (Rogers, 1969, p.11). So let's do this today – free ourselves from the everyday, be curious, open-minded and have some fun!

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