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**Keynote**

**Sustainability and Learning:  
Aesthetic and Creative Responses in a Digital Culture**

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**Abstract**

This paper uses published research to explore how Technology Enhanced Learning (TEL) can help to sustain learning communities to engage in creative exploration and open investigation. It then draws on this research to suggest that we use TEL to support pedagogies of socio-ecological sustainability in the Art and Design education community. Two themes are explored: learning communities - in developing shared values and supporting investigations around issues of concern; learning spaces - in supporting these communities and their dialogue. This paper tries to initiate an exploration of the fundamental elements required to create pedagogies of socio-ecological sustainability in higher education, using Art and Design Education.

**1. Introduction**

This paper uses our published research to explore the relationship between 'technology enhanced learning' (TEL) in Art and Design higher education, and socio-ecological sustainability. This exploration arises from the coming together of two perspectives: my own personal experience in the field as an educational practitioner, and my work as a researcher in Higher Education over nearly two decades, in the domains of general education and Art and Design education. My aim in this paper is to re-orient the merging of these perspectives towards new research activity that endeavours to offer a 'critical take' on the use of TEL in Art and Design Higher Education, and the uses to which it is put in supporting and embedding a consciousness of ecological sustainability within the teaching of art and design. This endeavour involves use of the critical approaches employed in the Interlife Project (Engineering and Physical Sciences Research Council (EPSRC) and Economic and Social Research Council (ESRC) 2008-2012) and their use in the development of TEL more widely in Art and Design Higher Education. I am concerned with using TEL to strengthen the relationship of Art and Design Higher Education to serious issues of global concern - especially socio-ecological sustainability. The paper will focus on two themes emerging from this work: Learning Communities, and Learning Spaces.

**2. Key questions**

The experience and insights gained from the Interlife project (Devlin, Lally, Canavan, & Magill 2013; Devlin, Lally, Sclater, & Parussel 2015; Lally & Sclater 2012, 2013; Lally, Sharples, Tracy, Bertram, & Masters 2012; Sclater & Lally 2014; Sclater and Lally 2016; Sclater, 2016) have led me to question how educators, learners and others involved in the support of learning are currently enabled, through engaging in TEL, to connect their formal learning with wider issues of human concern. In this paper, I am particularly concerned with connections to issues of socio-ecological sustainability. In other words, how and in what ways can TEL contribute, and can it help to enable learners to connect in meaningful ways to wider, serious issues of global concern?

Leading on from this: How might educators and learners be helped to support such an agenda? Another, parallel set of questions is: what do we as educators need to do to support these wider educational aims? What frames of reference, or theories,

might help? How do we enable learners to move beyond the boundaries of their own discipline, to tackle some of the important issues confronting humanity – the future of our planet?

### **3. Interlife project**

Interlife was a TEL project, employing practices from Art and Design education. It was part of the third phase of the Teaching and Learning Research Programme (TLRP) in the UK that involved working alongside groups of young people aged between 14-18 both inside and outside of formalised educational settings (School and University). The Interlife Project took place in a virtual world – SecondLife. Virtual Worlds are 'persistent, avatar-based social spaces providing players or participants with the ability to engage in long term coordinated and conjoined action' (Thomas & Brown 2009, 37). Such immersive 3D worlds give an illusion of cognitive presence, and offer co-located interaction and visualisation.

In Interlife, we investigated how Virtual Research Communities (VRCs) that developed within Interlife helped young people to acquire and develop life-skills. We focused in on skills to enhance their navigation of important life events in the real world. The young people investigated a wide range of life issues that they considered important to their own agendas. One of the ways in which the research team endeavoured to relate to the young people and their own agendas was to work alongside them, in the learning spaces that we co-created, to develop these communities, and help them to express their 'voices'. In all we spent over five years engaged in this work.

### **4. Urgency of the issues of socio-ecological sustainability**

In this paper, I will endeavour to explore some of the wider implications for socio-ecological sustainability arising from our work on the Interlife project. However, firstly, I will briefly highlight the urgency of the issues of socio-ecological sustainability.

In a wide-ranging recent essay on the fundamentals of sustainability, Naomi Klein (2016) referred to a major peer-reviewed study warning that sea-level rise could happen much faster than previously believed. The principal author was James Hansen – to whom she referred as perhaps the most respected climate scientist in the world. In Klein's words: 'He warned that, on our current emissions trajectory, we face the 'loss of all coastal cities, most of the world's large cities and all their history' – and not in thousands of years from now but as soon as this century'. 'If we don't demand radical change', Klein herself argues, '...we are headed for a whole world of people searching for a home that no longer exists'.

In the following quote James Hansen, who has published very extensively in this field (for example, Hansen 2005; Hansen et. al. 2008; Hansen 2009), makes these points, as part of a very extensive review of the scientific evidence (Hansen et. al. 2016): 'The modeling, paleoclimate evidence, and on- going observations together imply that 2 °C global warming above the preindustrial level could be dangerous...Continued high fossil fuel emissions this century are predicted to yield...growing ice sheet mass loss... increasingly powerful storms... growing sea level rise, reaching several meters over a timescale of 50–150 years' (p. 3762).

Scientific evidence, however, may not be enough by itself. Martin and Jucker, in their 2005 article 'Educating Earth Literate Leaders' report that most the one hundred leaders who attended the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002 have 'collectively failed to rise to the challenge of sustainability'. Many attendees hold higher degrees from some of the most respected universities in the world. In their article these authors proceed to raise important questions about the world's universities as they educate future generations of professionals. One might question how far we have moved since 2002.

### **5. Technology enhanced learning – prioritising perspectives?**

Turning now to TEL, I would contest that the landscape of TEL usage in higher education is, at the very least, beset with complexity. For example, there has been a long-running argument in the TEL literature, which takes a technologically deterministic view, that

technology will lead to better outcomes for learners as it becomes more advanced, 'intelligent', and attuned to the needs of educators and their students. I contest that the technology by itself will not do this. It could be argued that the emphasis appears to rest too emphatically on 'skills acquisition' rather than the development of critical skills to provide learners with the intellectual 'toolkit' to question thinking that veils the reality of what is happening in the world. In the current context of this paper, I mean the economic and political activities of institutions that tend to overlook these 'realities' through too exclusive a focus on vocational skills at the expense of consideration of some of the important global issues. This kind of 'overlooking' is now well documented and more widely accepted: see, for example, Edward Herman and Noam Chomsky's work in 'Manufacturing consent: The political economy of the mass media' (Herman, E. and Chomsky, N. 2002). See also Dimitri Orlov's work (2015) on 'Shrinking the Technosphere', in which he examines and critiques a wide variety of technologies in North America. So, in one sense, it could be argued that there is a danger in some educational settings in Higher Education, that learners are being prepared very well to use technology effectively in their learning - as personal development and vocational tools, more than as a means to connect to wider issues of global concern. At the same time, TEL research has tended to focus on the technologies themselves and how learners individually interact with them. This is an argument that has been developed by Neil Selwyn (2010, 2012). There are yet others (See Richard Hall's work for example - Hall, 2016) who take a more sceptical view of technology in supporting learning. This includes the perspective which regards TEL as having contributed to the worsening of educational environments, climates and relationships in recent years, as universities clamour to zip up and ship out their 'educational products' to the global market place via bite size chunks of e-learning that can be undertaken anywhere anytime - or so they say, on any topic imaginable.

## **6. Learning Communities**

Turning now to our work, researchers in the Interlife team supported a young people's community in an extensive series of co-designed activities. These related to the social and emotional challenges of real world life events - such as moving from school into higher education, and strategies for tackling bullying. Some participants were also relocating to a new local authority/foster home, changing schools, making new friends, and dealing with family bereavement. These were key events that they actively wanted to discuss in the community. The young people engaged in 'creative practices' such as digital storytelling, film-making and photography, to explore these issues, and seek resolution and understanding. Digital creative practices, then, were used as a vehicle to enable young people to access and develop shared narratives about these issues as they worked together with researchers over an extended period, on Interlife.

From a theoretical and educational perspective, we were interested in how participants acted and developed in the Interlife community while engaged in this series of co-designed creative and research activities, mediated by tools. As researchers, we wanted to explore what, in reality, happened within the community, and what meaning participants made of their activity within these spaces over a sustained period. This included probing how skills and understandings - that were developed as a consequence of engaging in creative activities within Interlife community - mapped onto the real world.

This Interlife community provided a basis for development of shared values through the provision of mutual support, shared thinking and shared goals. The virtual research community (VRC) that was developed could be described as a 'creative sounding board' for the expression of new insights and perspectives, mediated through the tools (e.g. technologies) and activities (creative practices). This resulted in the development of individually and collaboratively produced artefacts (sculptures, film, photography, fashion). The community acted as a (cultural) resource and a 'safe place'. It was highly supported by mentors, and this enabled participants to engage in an iterative process of reflection, re-interpretation, re-evaluation and re-integration of the social, emotional and cognitive aspects of their experiences.

The Interlife Project demonstrated the importance of (research) communities: people working together on joint enterprise/s, and dedicated to using a joint set of tools (creative

tools in this case e.g. cameras, video cameras, software, virtual world) to investigate an issue in a systematic way, and to be able share the results (with outsiders and those in the group) in order to improve practices and promote important agendas of significance to that community. Furthermore, we argue that these processes, supported by a caring community, are also central for TEL researchers and practitioners themselves, as they resist some of the directions in which industrialised TEL might be heading. This has implications for us as teachers, and researchers, who are also members of this globalised TEL 'community'.

## **7. Learning Spaces**

Another key finding of the Interlife project was that communities, like the virtual research community it supported, need shared spaces in which to act, to be, and to develop. The Interlife project focused on the development of an integrated learning space (Sclater and Lally 2014, 3-4) in a 3D virtual world (Second Life™). This helped us to understand how space (in a virtual world in our case) could be used creatively, individually, and collectively using the practices of Art and Design education. The key purpose was to assist young people in exploring and acquiring specific skills to navigate their key life transitions. Our learning space supported creative practices and creative expression ranging from sculpture, through to changes of one's avatar appearance, to being able to teleport, fly, modify the landscape, and use collaborative tools (Sclater and Lally, 2014).

Sagan and Sclater (Sagan 2008; Sclater and Lally, 2014) have highlighted the emotional and affective dimensions of learning in relation to the development of educational spaces. Research from the Interlife project argues that virtual worlds can facilitate the expression of the affective aspects of our selves and offer positive emotional spaces for learning. For example, when discussing the ability to present oneself as an avatar (with a customisable appearance), one of the participants Ralph (avatar name) suggested that this enhanced his interest and engagement in the space, as he refined his avatar so that it 'felt' like him (Lally and Sclater 2012, 492). He mentioned that the Interlife space had helped him find out what his real capabilities were; he had found Interlife space to be a place where he could work, be comfortable with the atmosphere it produced, and the possibilities for creativity that it fostered. 'It's an open environment, and if you want to do something you can' (Ralph Navarita interview) (Lally and Sclater, 2012, 492). In the research interviews, participants' interaction with the space and its features, through play and socialisation, were key experiences (Lally and Sclater, 2012, 497). We argued that engaging in self-expression, socialisation and play within these learning spaces were key activities driving engagement with the space, and the development of a community.

The Interlife learning space helped young people to explore issues; as researchers, we advised, stepped back, we talked, we interviewed, we let the young people pursue their agendas, and we brought their research into the foreground. Interlife became 'a commons': a space shared by all the members of the community. Group activities were linked to the characteristics of a space, and they were interlinked with one another. Ownership of the space and how it was shared became determinants of the nature of activity.

## **8. Discussion and Conclusions**

In this paper, I have been concerned with using TEL to strengthen the relationship of Art and Design Higher Education to serious issues of global concern - particularly socio-ecological sustainability. I have attempted to build an argument that the fundamental elements of technology enhanced learning design can be seized upon, in order to galvanize the development of pedagogies in Art and Design education that support wider issues of concern to young people. In this paper, I am concerned with pedagogies that can also be used to embrace even bigger challenges relating to socio-ecological sustainability. The argument could be applied to other crucial issues of wider societal concern. To do this, I have attempted to outline the critical approaches employed in the Interlife Project, and in particular on two themes that emerged from its work: the significance of Learning Communities, and of Learning Spaces. The central direction of my argument is that these themes could be engaged in more widely and more critically, helping Art and Design Higher Education pedagogies to include concerns of wider societal importance.

I have drawn upon published research and my experience from the Interlife Project to illustrate how TEL can be used to support individuals and groups, whether wholly online, face-to-face, or in blended settings, to develop and explore issues of concern, to seek support, to share and develop, and to initiate action. I have tried to illustrate that it is possible to create learning spaces and communities that support these approaches. While the Interlife Project did not focus on ecological sustainability, the evidence points to learning design principles that could be applied to supporting this important agenda. Researcher and practitioner engagement is also urgently needed. We can use TEL to help our students to meet the real-world challenges that they will face.

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