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**Learning Environments for Collaborative Authored Outcomes:**

**Theatres for Learning - a brief introduction**

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## INTRODUCTION

This paper is intended to be a short introduction to a Collaborative Learning Environments (CLE). Spaces designed to enable and facilitate large groups to learn and create Collaborative Authored Outcomes (See Humphreys and Jones, 2005). Contemporary approaches to learning are having an impact on the support infrastructures required, from online to physical environments. The paper provides a brief overview of some of the developments in adult learning that impact the ideas behind large group Collaborative Learning Environments. It takes as its starting point that all forms of collaborative work (such as projects, management, implementation, change and transformation programmes) are forms of institutional, organisational and personal learning, and that they need to be in order to enable sustainable outcomes. This has implications for both the physical environments created to support such approaches as well as the processes that activate them in as much as it is the enabling context of the physical environment which provides groups with the functionality and modality required for collaboration. These organising principles are as relevant in any organisational context as they are in education. The paper outlines a number of systems that one would expect to find in a state of the art learning environment and paints a picture of how such a facility may be used in practise. It is intended to provide a theoretical framework for the design and development of CLEs.

*Simulation is no longer that of a territory, a referential being or a substance. It is the generation by models of a real without origin or reality: a hyperreal. The territory no longer precedes the map, nor survives it. Henceforth, it is the map that precedes the territory – a precession of simulacra – it is the map the engenders the territory.*  
(Jean Baudrillard, 1984)

## COLLABORATION

Collaborative Learning Environments (CLE) are fully flexible workspaces equipped so that groups of different sizes may actively engage in the learning process. As educational techniques grow in sophistication, so to do the demands made on the environments in which learning takes place. These requirements have influenced the development of CLEs over the last 25 years.

The basis of the Collaborative Learning Environment is a flexible space or theatre for learning. It is configurable to meet all the physical, virtual, multi-media and pedagogic requirements of the contemporary learning process.

These creative environments are easily changed to enable large group structured learning, smaller group work, individual work, formal, informal and collaborative learning. The spaces are sufficiently rich in context, content and technical support to enable the design and evolution of any combination of learning process. CLEs are rich knowledge environments, and are equipped with technology, processes and data which enable the learners to explore

information, make decisions and document their ideas in any format, where and when they require it.

For example a CLE could be configured to enable active engagement with creative learning processes. A group of learners may work together with a facilitator to develop questions and lines of enquiry. In doing so they may explore questions online and then use laptops to capture the information discovered. They might create artefacts that model the use of the information. The group may shift to creating video and multi-media material that simulates and demonstrates their ideas in practice. The video-material may then be stored on a website that is part of a larger knowledge resource that supports a particular learning community. It requires a particular type of physical space to support the learning and production requirements of such a varied and rich experience.

It is the unique combination of a supportive infrastructure, engaging learning activities and contextually relevant knowledge that make a learning experience unforgettable.

## SUPPORTING MODES AND STYLES OF LEARNING

For an environment to provide the flexibility required for Collaborative Learning it needs to anticipate and support the shifting learning needs, modes and styles of its users.

The work of Jean Piaget (1954) on cognitive development, John Dewey (1963) on experienced based learning, Kurt Lewin on action learning (see Schein, 1995), Maria Montessori (1967) on learning environments, Kolb (1984) on experiential learning, Schön (1987) on reflexive knowledge, Vygotsky (1978) on zones of proximal development, Freire (1968) on the relationship between learners and facilitators, and peer-to-peer learning and Bruner (1963) on the processes of education are some of the names that have contributed to the understanding of the powerful relationships between experience, process, support and environment for learning and authoring. Authoring is the means by which learners are able to synthesise, focus and sustain the learning effort (see Humphreys & Brezillon, 2002).

Knowles (1984) states that “adults learn best when learning is :

- based on solving problems not assimilating content;
- negotiated with learners, so that their expectations and needs are met;
- relevant to their immediate context, in their professional lives;
- experiential.”

Learning is an ongoing process that is subject to shifting modalities of cognition. Howard Gardner’s (1999) frame of eight intelligence centres acknowledge that each learner has a bias toward a different style of learning and that the learning process - and hence the supportive environment - needs to accommodate all styles. A collaborative learning experience could be designed that triggers all eight of Howard Gardner’s (1999) model of Intelligence Centres – logical, musical, visual, kinaesthetic, verbal, inter-personal, intra-personal and natural intelligence.

The social needs of the collaborative group may shift during the learning process - from working on one's own, to working in small groups or working in the very large group. Such shifts may occur very rapidly, and the physical space needs to be able to rapidly reconfigure to support the change. The impact on the physical environment requires areas that accommodate all modes of learning. There might be areas for large group work, surrounded by areas with tables for smaller groups. Surfaces can be simultaneously used for writing on, displaying presentation material and projected onto. Information is readily available when needed. Production equipment is easily accessible for creating artefacts and multi-media.

A flexible collaborative learning environment doesn't dictate a pedagogic regime, but rather acknowledge that learners, learning and educators are in constant shifts of modality and supports those changes through anticipatory infrastructure. These spaces are designed to engender communities of learning.

## TECHNOLOGY

The development and penetration of computers into the learning process has radically impacted environments for learning. Access to resources for exploration, prototyping, simulating, production and collaboration are readily available. Requirements for laptop work, amplification of data to groups through flat screen technology, interactive surfaces, and surfaces for extrapolating data and modelling alternatives, multi-media and video, authoring software, word processors, wireless networks, printers, formal and informal work all impact the space designed as a Collaborative Learning Environment.

Bradshaw, Powell and Terrel (2002) point to the effectiveness of online communities in fostering self-directed learning. The online environment is a powerful adjunct to the learning process both before, during and after a collaborative event. (The use of the online environment during the collaborative event is explored in our paper *The Bridge* (2002).

A collaborative learning environment needs to provide ready access to the technical support and functionality required by online learning. Again the modalities shift rapidly and all of this equipment needs to be able to be moved around, packed away and reconfigured as required.

It is the role of the facilitators and technical support to assist in the shifting of these modalities through supporting the creative learning process and providing ready access to tools and information as and when required. The role of the technical support is particularly active and is considered an important source of skill and craft knowledge in the learning process.

## PRODUCTION SUPPORT

The learning process is increasingly supported before and beyond a particular event

by online platforms. Learning in a CLE has both a physical as well as virtual component. A support team of technical experts and subject matter specialists may create a virtual environment containing the knowledge content as well as outcomes of the event. This may be designed and built in real time. It may also be designed and built in collaboration with the learning group as part of the learning process.

To aid this the Collaborative Learning Environment is also a production environment, and has areas where support teams can work in parallel with the learning activity – present in the space. They may also configure knowledge repositories or compendia to serve as the community space for all participants once they have left the CLE. All knowledge relating to their programme may be found here, as well as space for interaction and decision-making beyond the event.

## PROTO-TYPING & SIMULATION

When a large group is engaged in collaborative learning, it may be useful to construct visual and physical models of conceptual ideas.

Simulation, the playing of games, the construction of small worlds, testing of hypotheses, questioning, the reordering of information, scenario testing, mapping, modelling are all tools used for problem-solving processes applying double-loop learning in large groups (Argyris & Schön, 1978). A CLE provides the resources required to do so as well as providing the processes and methods (for example multi-media composition) by which groups are able to construct problem solving processes for themselves. Facilities which support these activities may include construction materials for modelling, spreadsheets for financial modelling, large surfaces to write on and iterate ideas, surfaces for moving information around the space, audio-visual authoring tools, screens for running computer simulations between groups, areas for role-play.

The role of the educator shifts too. From being the single source of all learning, the educator now brings their experience and subject matter expertise into dialogue with the learners experience. Providing opportunities for joint exploration of problems and problem solving (Kolbe, 1984). Learning experiences employing these strategies are being shown to provide more powerful results for the learners (Hausfather, 1996).

## MULTI-MEDIA

The advent of multi-media authoring tools available on laptops such as the Apple has enabled the use and production of multi-media to become an integral component of the learning processes. The impact of the production process itself is becoming understood as a powerful learning tool, as a means of enabling collaborative authoring. A CLE also provides the production requirements to enable learning through consuming as well as creating multi-media (Lorac, 2002). The space may be configured as a studio, production and post-production environment to enable the creation of media by and for the learning group. Individual groups may be learning from video or dvd media, or watching the media created by other team mates. The large group may be watching a single item, or their may be ten different items being

watched in parallel. Through providing the creative tools required, the CLE enables the participants not only to create material but also to distribute it – as groups shift through the modes of learning.

## IN SUMMARY

The fully flexible facility contains furniture, architectural elements, technology and support services which support the multiple modes of learning that may be employed by a group of learners.

It includes:

- configurable zones for large group work, break out areas, places to relax, areas to socialise and areas to work on one's own. It has zones for both formal and informal learning
- knowledge rich spaces – the space has shelves of books, objects, presentation surfaces, on-line access
- production capabilities for audio-visual support, knowledge objects, and the publication of communication artefacts created during the learning process
- multi-media authoring capabilities, as well as video production support
- multi-media presentation and parallel distribution capabilities allow groups to consume media where and when required
- internet connections to resources enable learners to rapidly access information
- an ambience within the environment which is soothing and relaxing or upbeat and theatrical, beautiful and inspiring, as required. Modes of learning are supported with music and audio-visual material.

The collaborative learning environment represents a complex synthesis of support systems, environment, tools and technical systems, production systems, learning systems, project management and process support. A Collaborative Learning Environment rapidly promotes a self-directed learning communities – it is in some respects a theatre for learning.

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