

Reports of Focus Group Discussions:

Group E – Teaching Environments: Key Influences and Considerations

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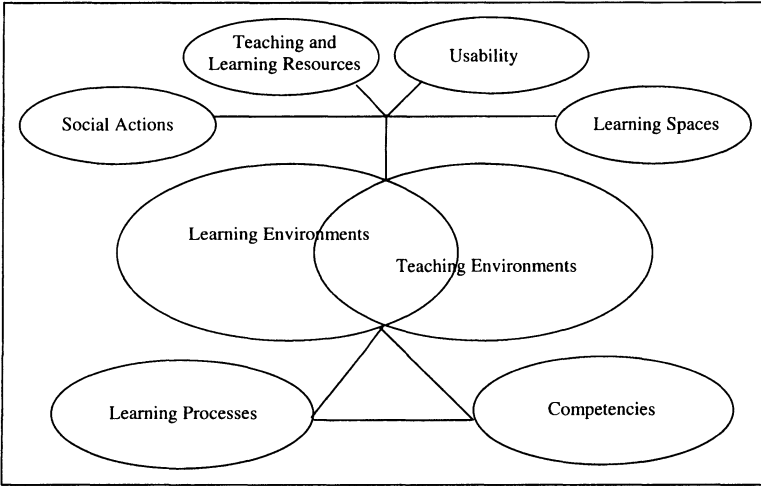
1. INTRODUCTION

Many developments suggest that the teacher of the future should focus upon learning environments that operate with physical and virtual spaces for students. Teaching environments should be flexible and responsive shared spaces, co-constructed within such environments. The focus group considered many arguments about the relationship between learning environments and teaching environments, the influences upon their creation and sustainability, and their outputs. The model overleaf provided a means to represent these relationships and ambiguities, giving a framework for our analysis of teaching environments and the role of the teacher in their creation. Each element in the model provided opportunities to identify new areas of research and development to increase the effectiveness of teaching environments in meeting the needs of learners in a continuously changing ICT rich, e-enabled world, including the power and control relationships within and outside schools in their creation and sustainability.

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2. DEFINING TEACHING ENVIRONMENTS

The four key influences identified as social actions, learning and teaching resources, usability and learning spaces suggest that teaching and learning environments have a considerable interdependence in enabling learning processes and the development of competencies.



We can describe teaching and learning environments as social systems irrespective of the physical nature and architecture (real or virtual) that define them. Technology supported environments can be recognised as complex social systems which encompass both human and technology actors, rather than technological systems that people are required to negotiate, or social groups to which various technologies are added (Akrich, 1992; Latour 1991). The people include the learner, their contacts, peers, families, the facilitators, technical, helpdesk and other support staff and the developers of hardware and software. This paper recognises the considerable distance that can exist between these actors and the final realisation of the environments for a particular group of learners and teachers. A robust approach to addressing the social and cultural assumptions that are a feature of technologies which frequently find global application needs to be realised for the learner and teacher, acknowledging that developers may ignore cultural matters.

In learning and teaching resources of ICT-enriched environments we may distinguish between a technical and a didactical context. The didactical context provides teachers with a framework to plan a lesson or to draft a learning design. Such designs include a wide range of concepts of face-to-face learning, blended learning and e-learning, to create physical and virtual

learning scenarios and cooperation with the community of teachers. ICT enriched environments provide teachers with a wide range of technical resources, such as software tools, educational software, educational agents, groupware facilities, content-management facilities and assessment tools. Learning environments have to provide students with individual content-management and communication features enabling them to organise their individual views on documents, user profiles for resources and personal databases within their often multiple teaching environments.

Another of the influences contributing to the teaching and learning environment is the required characteristics of the learning spaces. This is the physical or virtual space within which teachers and students jointly conduct their development activities. Teaching and learning environments of the future will be spaces where ICT is available in a formal or informal way. Such environments are school spaces with computer labs, classrooms equipped with PCs, open access computer spaces, media rooms; community spaces in youth clubs, telecottages, public access PC areas; home spaces with computer facilities with guidance from family and friends. All these environments contain a strong hidden curriculum that directly influences the choice of methods and teaching aids and, through these decisions, has an indirect impact on teaching content. The OECD study (Venezky & Kárpáti, 2003) of national policies in 23 countries produced 93 anthropological case studies of cutting-edge ICT using schools. It contains descriptions of teaching environments, offering models for the arrangement of computers. Teaching options inherent in these models were widely different. As the provision of ICT in schools between 1998 and 2002 moved from prescriptive provision of computer laboratories to a more cross-curricular approach with computers placed in classrooms, affordances were made available to teachers to start exploring new teaching environments for their disciplines, resulting in significant changes of teaching style. Such changes are accelerated with the provision of wireless and ubiquitous computers, blurring the distinction between real and virtual teaching environments.

Good usability is the basis for meaningful and effective digital learning. Usability tells us how well the users can use the system productively, effectively and pleasantly to reach the defined goals in a certain environment. According to Nielsen (1993) usability is a multidimensional concept that is traditionally associated with five attributes: learnability, memorability, efficiency, errors, and subjective satisfaction. Paying attention to learnability, which should be easy, draws upon previous cognition and is based on the principle of visibility. Memorability is also important when designing learning environments as use can be infrequent and this can in itself create a barrier to learning. In digital learning materials navigation is usually the bottleneck of usability (Sinkkonen et al., 2002) but should allow

the structuring of ideas, supporting the finding and location of information and learning objects.

Within the learning process teachers aim to engage students in goal-oriented activity in which the teacher may participate as an assistant or co-participant, giving assistance to the students' performance to achieve pragmatic meaning in developing competencies and as a cultural mediator to epistemic meanings beyond any specific tasks. The characteristics of the ICT tools used in the activity support teachers in: designing activities, providing opportunities for co-participation and instructional conversation with the teacher and with peers and giving assistance to students' performance. ICT tools produce effects that can be interpreted through the metaphorical use of what the interface dynamically and concretely exhibits in the interaction.

The report of professional group 1.4, WCCE 2001 'Indicators of Success', provides a helpful discussion of the broad range of competencies needed by citizens of the third millennium. As lifelong learners living and working in a networked society where 'ICT changes knowledge itself' (Cornu, 2003) they will need access to flexible and adaptive learning environments. Such environments will support an active engagement with information of all kinds and develop the capacity to use reasoning, enquiry, evaluation and creative thinking skills (DfES, 2002). The capacity to work autonomously or as an effective part of a wider team, perhaps separated by time and space, will also become increasingly important as patterns of work and employment change and the benefits of collaborative problem solving associated with authentic and open-ended challenges become more established. Closely associated with this is the need to "give learners the time and opportunity to talk about thinking processes, to make their own thought processes more explicit, to reflect on their strategies and thus gain more self-control" (McGuinness, 1999). This will promote the development of key metacognitive skills that will support lifelong learners in the decisions that they will need to make so that their learning activities are well matched to their preferred learning styles or 'dispositions' (Facione, 1990 in Pouts Lajus et al., 2003).

3. RECOMMENDATIONS

This paper raises many development issues and research questions that need to be addressed if the teacher of the future is to be provided with the opportunity to create teaching environments that meet learning needs, including their own. Teachers are part of a growing team of education professionals supporting, often leading, the learning of students. In determining research questions, consideration should be given to issues of

power and control; the relationship between technical and pedagogical leadership; organisational metaphors; leadership in establishing a vision and the management of implementation; assessment and validation of student work; and consequences of changes in teaching environments. At the beginning of our four meetings we agreed the focus should be upon learning environments. As you see in this paper our conclusion is that the interrelationship of teaching environments and learning environments is the key issue for the teacher of the future.

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