Transformational Learning and Serious Game Design

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A joint university-industry, six country, 8.2 million euro European project on the development of a serious game for the continuing education of project and innovation managers is incorporating both the threshold concept and the communities of practice frameworks into the game’s pedagogic underpinning (TARGET). The game is situated in a virtual world environment where learners enact roles in stories and may also discuss amongst themselves their experiences of the executed stories. Addressing the social aspect of learning within a serious game has brought the threshold concept and the communities of practice frameworks jointly and sharply into a focus, highlighting the problematic relationship between the individual and a learning community with its still several unresolved issues.

The conventional approach in the continuing professional development of project managers is to concentrate on identifying competence gaps and on their rectification structuring the teaching around knowledge management, a mechanistic approach rooted in monist epistemology. This leads to the dichotomy that many formally well-qualified individuals fail to function effectively, i.e. the transformation to ‘thinking like a manager’ does not occur. TARGET has chosen an alternative approach of managing knowing; more dynamic and consistent with social constructivism which will, whilst retaining the obligatory emphasis on formal competences, bring to the fore through the game scenarios the ontological and epistemic shifts necessary for the individual’s transformation.

Although there is an excellent body of work on the troublesome aspects of entering a virtual world learning environment, the incorporation of the threshold concept framework into an actual disciplinary core and design of the digital learning process has not previously been attempted. TARGET’s migration of the framework into this new arena directly addresses the missing transformation.

The threshold concept framework contributes at several levels. Cousin’s comments on the ‘overcrowded curriculum’ transfer neatly to the design of the game’s scenarios. Keeping these within a focussed manageable size is critical. The ability of a game to present several credible scenarios beyond those available in the real world is a major strength which is being formalised in terms of a third contemporary framework that also shares a common focus with the threshold framework; the variational theory of learning. This virtual world allows learners to establish themselves within their community and also provides the opportunity for a learner to enhance their capacity for metalearning and critical reflection.

Relevant threshold concepts are being identified by a major study involving courses within NTNU and the Norwegian School of Management and drawing on an extensive analysis of learner difficulties carried out over twelve years within the Siemens Austria. Two troublesome concepts identified within
a course in negotiation, the distinction between individuals’ position and their interest when negotiating and best alternative to a negotiated agreement, are used to exemplify the above developments. The course is strongly case based and PBL oriented, hence facilitating the implementation of suggestions that PBL may be revitalised by virtual world applications\(^5\) and that problem focused learning may help learners grasp Threshold Concepts\(^9\).


