Chapter XXI
Designing for Change:
Visual Design Tools to Support Process Change in Education

John Casey
UHI Millennium Institute, Scotland

Kevin Brosnan
University of Stirling, Scotland

Wolfgang Greller
University of Klagenfurt, Austria

Alan Masson
University of Ulster, Northern Ireland

Áine MacNeill
University of Ulster, Northern Ireland

Colette Murphy
University of Ulster, Northern Ireland

ABSTRACT

This chapter looks at the possible uses of visual forms of instructional design (ID) languages as possible 'change agents' for design practice in the public post-secondary education sector. A lot of work is being done in the technical realm of the standardization and interoperability for educational modeling languages (EMLs), but this is largely restricted to existing ID specialists that use 'dialects' of ID languages and schemes. This is important work but it does not address the vast majority of educators working in the post-secondary public educational sector whose design work is highly individualized and deeply embedded in rich institutional contexts. The challenge for visual ID languages and EMLs in general is how they can move beyond their current specialist niche applications to be useful to mainstream educators. In this chapter we argue that this development needs to happen along two related dimensions: (i) changes in the organization of the educational workplace and related training—what might be termed 'push factors;' and, (ii) the use of tools such as visual ID languages to support that change process at

individual and group levels—what might be termed 'pull' factors. We shall be concentrating on this second dimension. Specifically, in this chapter we shall be looking at ideas for how we might apply visual ID languages as a support mechanism in helping educators externalize and share their design models and ideas in order to develop them into semi-formal abstractions that might be developed to feed into the use of EMLs. To ground these ideas, we shall be looking at the experiences of those who have tried these types of approaches in practice. Finally we discuss the effect this type of perspective might have on the future development of visual ID languages and related tools.

OVERVIEW[1]

An important characteristic of this chapter is that, as a starting point, we do not regard teachers as fully formed instructional designers, we think it is better to regard them as novice learners in this field and explore how we might help them by the use of visual ID tools. We provide our rationale for this approach in section 3. The IMS learning design best practice guide and much of the current work in the area has, by necessity, tended to assume that the teachers can produce a formal narrative of their design that can then be converted into the various abstract representations the language and tools provide. Our experiences suggest that in the mainstream the journey from individualized and isolated design activities, that characterizes the majority of current practice, to a semi-formal expression that can be shared and elaborated upon is the first crucial step that we need to concentrate our activities upon. The need to direct support to this 'preparatory' stage of design was recognized during the discussions of the European Commission funded UNFOLD project that brought teachers and IMS learning design developers together (Griffiths & Blat, 2005).

Figure 1, illustrates the relationship between current practice and possible sources of information that can be utilized to produce semi-formal expressions of instructional design that can act as a 'halfway house' to a fully formalized narrative.

Thus the visual design languages and tools we are concerned with in this chapter are predominantly in the top left quadrant of the Use classification scheme diagram devised by Botturi et al. (2006) for visual design languages, see Figure 2. Namely, we are concerned with reflective communication and creative generation of designs for individuals and groups. But, as it will become clearer as we progress it may well be possible to use such languages for communication of 'final' designs—depending on what the community of users sees as a 'final' design.

This consideration of the purpose of use of visual design languages also leads to a central theme that we develop in this chapter: to enable

Figure 1. Moving from current 'embedded' design practice towards more formal expressions

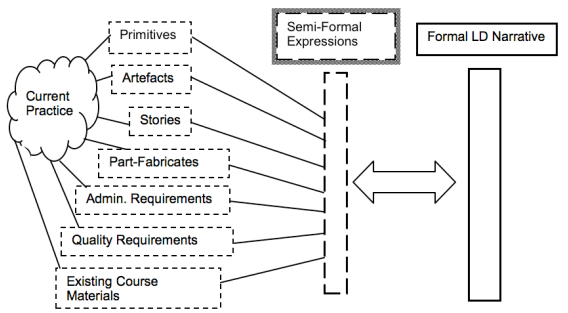

Figure 2. Usage classification of visual ID languages (Botturi , Derntl, Boot, & Figl, 2006)