PREMIERE REFERENCE SOURCE

HANDBOOK OF
Visual Languages for
Instructional Design
Theories and Practices

Luca Botturi and S. Todd Stubbs
The more complex instructional design (ID) projects grow, the more a design language can support the success of the projects, and the continuing process of integration of technologies in education makes this issue even more relevant.

The Handbook of Visual Languages for Instructional Design: Theories and Practices serves as a practical guide for the integration of ID languages and notation systems into the practice of ID by presenting recent languages and notation systems for ID; exploring the connection between the use of ID languages and the integration of technologies in education, and assessing the benefits and drawbacks of the use of ID languages in specific project settings.

Topics Covered
- Aesthetics in instructional design
- Comparison of visual instruction design languages
- coUML visual language
- CPM visual language
- Culture-based model
- Design drawing
- Educational environment modeling language
- End-user understanding of design languages
- Globalization of instructional design
- IMS learning design notation system
- Instructional design
- Instructional software design and production
- LDL visual language
- Learning flow patterns
- MoCoLADe visual language
- MOT+ visual language
- Paper drawing as means to innovation
- Performance case modeling
- pcEML visual language
- Technology-based learning systems
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Chapter XV

Using the IMS Learning Design Notation for the Modeling and Delivery of Education

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ABSTRACT

IMS learning design (IMS-LD) is a notation system for learning and instruction. It supports the description of learning processes using a set of standardized concepts, including roles, activities, acts, objectives and prerequisites. With the availability of such a notation, descriptions of learning processes can be shared, critiqued, modified, rated, compared and evaluated. Moreover, the machine-interpretable nature of the notation means that designs can be executed by software to support the dynamic orchestration of multi-learner, multi-role learning processes. This chapter introduces IMS-LD and describes experience with its use, supported by the first generation of tooling. We then combine these experiences with observations on the tools in the light of new developments in e-learning in order to derive a set of requirements for IMS-LD enabled visual design environments.

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our ongoing research in the area of visual design environments for IMS-LD:

- There is a need for end-to-end support of design processes from idea formation through to complete UoL (see Botturi, 2006 for results in this area).
- IMS-LD design environments should support holistic e-learning design, incorporating formative assessment, simulations, multimedia content and other parts of an e-learning experience. This is not merely a question of linking to objects or services on the Web, but requires designers to be in a position to specify which information should be passed to, and taken back from, learners' interactions with content and services.
- E-learning designers should be shielded from the intricacies of notational bindings. Wizards, templates, alternatives metaphors and techniques from the world of visual design environments, can all help in meeting this need. Moreover, research in end user development (Sutcliffe & Mehandjiev, 2004) offers a number of pointers to address this problem. A closer involvement of groups of designers in the development of environments (rather than solely in their evaluation) would seem appropriate.
- Design environments should accommodate a high degree of variation in designers' knowledge and experience with pedagogies, both traditional and those focused on e-learning. Although some groups of designers may require extensive handholding, Hoogveld (2003) notes that teachers do not like prescriptive methods. Having the flexibility for designers to experiment with, tune and indeed, create templates, patterns and primitives might help strike the correct balance between too restrictive an environment and an unsupportive one.
- Finally, we emphasize the need for design environments to be created to be interoperable. Without the capability to both import and export standardized notations such as IMS-LD, tools users become shackled to a particular design tool, fragmenting the community and creating competition where cooperation would offer more benefits.

Creating environments to meet these needs will help reach the goals of sharing, critiquing, modifying, executing, rating, comparing and evaluating learning designs across the broad spectrum of e-learning designers and teachers.

REFERENCES


