Chapter XLI
Standards for Learning Objects and Learning Designs

Morag Munro
Dublin City University, Ireland

Claire Kenny
Dublin City University, Ireland

ABSTRACT

E-learning standards are a contentious topic amongst educators, designers, and researchers engaged in the development of learning objects and learning designs. There is disagreement regarding the relative benefits and limitations of standards, while the relevance of standards to some education and training contexts has been questioned. It may be difficult for designers and educators to be sure that they need to implement standards, let alone to choose the most appropriate one from the plethora available. This chapter aims to provide individuals involved in the design and development of learning objects and learning designs with a wide-ranging critical overview of e-learning standards. It first traces the evolution of standards, and then examines their application in the present day. Finally, the chapter considers some of the limitations and criticisms of current standards, and suggests some possible directions for future development.

INTRODUCTION

Opinions vary regarding the importance and relevance of e-learning standards for learning objects and learning designs. Some view standards as nothing more than buzz words, and have difficulty seeing the relevance to K-12 and tertiary education of standards that have, so far, been used to support a limited range of pedagogical models in commercial and military training contexts. Others consider standards to be pivotal in facilitating sharing, reuse, and interoperability

of resources across all training and education sectors. Whatever your opinion, it is clear that standards are difficult to avoid.

So, what are the most commonly used e-learning standards and why have standards become so important? How do standards benefit instructors, education providers and students? Should "standards compliant" e-learning be the "Holy Grail" for the e-learning developer? How should one select the "correct" standard(s) from the plethora available? How much time and effort does the designer or educator need to invest in order to apply e-learning standards correctly? This chapter examines standards related issues relevant to current and future development of learning objects and learning designs. It aims to provide both the novice and more experienced standards implementer with a wide-ranging overview of e-learning standards by:

- Outlining the history and evolution of standards, in which we consider the rationale for the development and application of standards, provide definitions of the most prevailing standards, and outline the evolutionary process behind each one. Standards are categorised as part of this process.
- Detailing, with the aid of case studies, the present use of standards in a variety of education and training contexts.
- Explaining how the various standards are applied by offering practical advice for practitioners involved in selecting and deploying standards.
- Outlining recommendations for the future directions of standards. In particular, we examine some of the limitations and criticisms of current standards and discuss the applicability of today's standards in future e-learning contexts in which a wider range of technologies and pedagogical approaches are likely to be employed.

EVOLUTION OF STANDARDS

E-learning standards originated in the military and commercial training domains in the early 1990s, in order to allow learning objects produced by different vendors to operate on different technical platforms. More recently there has been interest in the possibilities offered by e-learning standards for enabling the sharing and reuse of learning objects and designs in K-12 and tertiary education contexts.

Today's e-learning standards typically strive towards achieving economies of scale, by facilitating the reuse of e-learning content and activities in different education and training domains, subject areas, and geographical regions. The allure of cost savings and efficiency gains has resulted in a number of countries investing in organisations responsible for the promotion of e-learning standards, for example the UK's Centre for Educational Technology Interoperability Standards (CETIS) and Canada's EduSpec initiative.

Standards apply not only to learning objects and designs, but also to learning management systems (LMSs) or Virtual Learning Environments (VLEs). Compatibility must be present such that content and designs conformant to a particular specification or standard can interoperate with an LMS that also conforms to the standard. This interoperability is of great importance for the sharing of resources and materials, allowing, for example, an organisation to "mix and match" content developed by a range of vendors with resources developed in-house and deliver these via a common LMS. A standard may also describe how units of learning material should be compiled as single file. Such file formats allow content to be easily migrated from one LMS to another.

Metadata standards that describe learning material objects and designs (for example the subject classification or technical format of the resource) are crucial in enabling discovery—and

Related Content

The Pandemic's Impact on Underserved Students' Technology Access and Course Progress: A Case Study
Mary Lebens (2022). *International Journal of Online Pedagogy and Course Design (pp. 1-17).*
www.irma-international.org/article/the-pandemics-impact-on-underserved-students-technology-access-and-course-progress/292015

Important Things to Know Before Developing Artificial Intelligence-Based Drone Learning Systems: From the Experience of Educational Practice
Ted Yuan-Yen Huang, Eric Zhi-Feng Liuand Harry Hung-Yu Sang (2025). *International Journal of Online Pedagogy and Course Design (pp. 1-14).*
www.irma-international.org/article/important-things-to-know-before-developing-artificial-intelligence-based-drone-learning-systems/376343

Key Success Factors in an Online English Learning Environment From Tertiary Learners' Perspectives
Atima Kaewsa-ard (2022). *International Journal of Online Pedagogy and Course Design (pp. 1-15).*
www.irma-international.org/article/key-success-factors-in-an-online-english-learning-environment-from-tertiary-learners-perspectives/311436

First Steps in the Development of a Model for Integrating Formal and Informal Learning in Virtual Environments
Victoria I. Marínand Jesús Salinas (2018). *Student Engagement and Participation: Concepts, Methodologies, Tools, and Applications (pp. 265-288).*
www.irma-international.org/chapter/first-steps-in-the-development-of-a-model-for-integrating-formal-and-informal-learning-in-virtual-environments/183512

Developing Self-Regulation Skills in Virtual Worlds: An Educational Scenario Applied in Second Life
Fotini Paraskeva, Sofia Mysirlakiand Vasilis N. Vasileiou (2012). *International Journal of Online Pedagogy and Course Design (pp. 25-43).*
www.irma-international.org/article/developing-self-regulation-skills-virtual/65739