Chapter III

Definitions, Uses, and Benefits of Standards

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Abstract

This chapter explains the background and significance of specifications and standards that make it possible for content and management systems to work together. It examines why standards are needed and traces the challenges of developing them. It also explains the technical and operational standards that are currently available and the standards for exchanging data and communicating data. It describes the organizations that establish standards and specifications. I hope to give readers a working understanding of the principles behind today’s use of technical interoperability standards as they relate to assessments and learning.

Introduction

Many people recognize the importance of standards and specifications to allow developers to create tools, content, and management systems that will work together. This interoperability allows solutions to work together and allows organizations not only to use generic systems but also to add best-of-breed modules when required.
As useful as standards are, the language relating to them can be confusing. This chapter provides readers with a working understanding of the principles behind today’s use of technical interoperability standards as they relate to assessments and learning.

The chapter discusses the following topics:

- Background and significance of specifications and standards
- Differences between standards and specifications
- Challenges of developing standards and specifications
- Technical and operational standards currently available
- Standards for exchanging data
- Standards for communicating data
- Organizations that establish standards and specifications
- Key standards and specifications that are crucial to interoperability

**Background**

Many devices are based on standards that evolved and were developed decades ago; everything from traffic lights to electrical sockets to a vehicle’s control system relies on standards to ensure people’s safety and convenience. But these standards did not always exist. They had to evolve along with the technologies they regulate.

The first drivers of horseless carriages had no use for traffic lights, but as more and more people began to favor the automobile, a system needed to be established to dictate rights of way. When these lights first appeared at busy intersections, some drivers might have been annoyed, wondering why they should have to stop at a red light, but as traffic lights proved their worth, they came to be taken for granted. What would life today be like without them? A lot more dangerous!

No doubt these new contraptions created some confusion at first. The earliest traffic lights were based on railroads’ stop and go signals; these signals were based on the flags used by signalers. Engineers used red and white lights to guide their trains, but the white light was changed to green after a red lens once fell out of a traffic light and caused an accident. Some cities initially chose the two-light signal based on the railroad system; others started to use a three-light system that could warn drivers that the light was about to turn from green to red.
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