

Guidelines to Enable Others to Reuse Your Contributions to Skills Commons Repository

The primary purpose of the Skills Commons repository is to capture and preserve digital course materials developed under the TAACCCT grant. Each repository submission includes descriptive information such as the author, subjects, and industry for which the material may be particularly well suited. Moving beyond the capture and preserve mission, Skills Commons needs to facilitate:

- discovering relevant materials
- adopting materials into a delivery platform such as a learning management system (LMS)
- capturing derivative works created when instructors modify materials
- building communities around a subject area
- rating materials in various ways
- etc...

Expanding more fully on adoption leads to the need to define what it means to be easy to adopt materials. Ease of adoption can be viewed as a continuum or perhaps adoption is a destination that can be arrived at via many different paths. The following elements make material easier to adopt and deploy in a learning environment:

- An inventory or manifest listing the kinds of materials.
- Materials separated into functional areas.
- Materials packaged in editable form.
- Materials packaged in file formats supported by applications in broad use such as Microsoft® Word and Microsoft® PowerPoint.
- Materials packaged in interoperable form such as IMS Common Cartridge for course materials or IMS QTI for assessment questions.
- Materials accessible via IMS Learning Tools Interoperability links that allow for sending grades to an LMS grade book such as SoftChalk Lessons.
- Courses in a public LMS instance or MOOC platform where instructors can simply add themselves as instructors.

Below we examine these elements in more detail.

Include an Inventory

Suppose a submission described contains a syllabus, five sections of material each with a pretest, content, post test, and suggested discussion topics. The materials also include a summary and summative assessment, a list of curriculum standards, and a section on other materials that may be of interest. The materials might be interspersed with some video content. This is a comprehensive set of materials that might be used in total, unmodified, or might be adopted piecemeal.

Now contrast that with a submission described as containing a single document or a zip of files whose contents are not listed. In this later case, the prospective adopter is left with the task of downloading the material and examining the parts before they can decide if they are interested. Further, a detailed inventory conveys a higher degree of fit and finish that may invite a closer look.

Subdivide by Function

Continuing with our example of a comprehensive course, recall it contained:

- syllabus
- five sections of material plus a summary
- pretests, post-tests, and a summative assessment
- discussion topics
- curriculum standards
- related topics list

If the materials are decomposed into separate sections, it will be easier for instructors to adopt material in an à la carte fashion. Further, an instructor might augment or replace one or more of the elements in this course with another. Over time a family of derivatives of the original course will emerge and may evolve to a collaboratively assemble best practice in its industry.

Use Editable Forms

Let's compare two multiple-choice, 10-question quizzes. The questions are the same, only the packaging differs.

The first form of the quiz is a scan of a paper quiz that is then placed into a document.

The second form is an editable, machine score-able, quiz, which is accessible by a link from any LMS and whose hosting platform can send scores to the LMS grade book. Further, the quiz is packaged as a self-contained learning object that can be discovered by searching a repository.

The first form has value, in that the thinking went into questions can be reused. An instructor could reprint the quiz as is and hand it to students, have it graded by hand, and then enter the grades by hand. Unfortunately, if the instructor wants to remove, add, or change a question, there is no elegant way to do that.

An improvement on the first form would be a quiz written into a document rather than a scanned image of the quiz. In native document form, questions can be removed, added, or changed easily. Another challenge is how to distribute the quiz. The quiz could be printed, handed out, taken, and collected in paper form. There would be less work if the quiz were in a format such as a PDF where students could type answers (optionally digitally signed) and then submit the materials via upload or email. The work of grading likely continues by hand.

Yet another improvement is to author the quiz in a tool that outputs the questions in IMS Question and Test Interoperability (QTI) format.

http://www.imsglobal.org/question/qti_v2p0/imsqti_overview2p0.html

QTI can be imported into a variety of test “playing” platforms. This format and platform combination can offer a number of benefits:

- Use the quiz in different format.
- Include hints, feedback, and other supporting material.
- Specify accessible formats to serve a broad audience (see IMS APIP).
- Additional interactive formats well beyond simple true/false, multiple-choice, and short answer.
- Machine grading.
- Sending scores to the LMS grade book.

Taken to its most re-purpose-able and interoperable form, the quiz could be authored in a product such as SoftChalk, which offers all the options above, as well as allowing the quiz to be edited, to stand alone or be woven into the fabric of a lesson (not a separate assessment tool or area), and to be stored in a public sharing repository.

Use Common File Format

Putting materials in digital form does not guarantee that the materials can be readily adopted. One could think of printed material as being extremely easy to consume in that one just has to hold it and read it, accessibility concerns aside. A digital form requires a device and supporting software to render the material.

Packaging material in a file format that can be read by the software commonly found on most devices is preferable to a file format that requires specialty software that may be expensive. Further, it may be inconvenient or technically challenging to sample material in this format. Certainly, some excellent applications exist that offer a rich teaching and learning experience and may well be worth the price and effort to use. While this can be a suggested delivery method, material is more likely to be reused if it is available in a format that works with what people already have. In such cases, material can be published in multiple formats, identifying the advantages that can accrue to instructors and students that have the specialty software or device.

The virtue of using a common format for assessments such as IMS QTI was covered earlier. Here we can also mention packaging multiple files into a format where they can be ingested readily into a course management system.

Historically, many LMS products support a proprietary means to package all the files that compose a digital course, namely content files perhaps in plain or rich text, HTML, PDF, applications such as Microsoft® Word and Microsoft® PowerPoint, videos, etc. The course might also contain discussion topics and assessments. While these proprietary formats were a means for publishers and others to distribute material, preserve content and arrangement within the course, it was a burden to support each LMS separately. The IMS Common Cartridge format for material “on-disk” and more recently the IMS LTI mechanism for hosted content, offer the option to author once and distribute to many LMS platforms.

Note that packaging in these forms can be done well after the material is written.

Hosted Content with Gradebook Integration

Amplifying the discussion of IMS LTI, distributing course materials for use on a local file system, whether personal or for a campus, means that the author or publisher has to distribute any updates physically as well. This model makes it very likely that obsolete versions of content endure in the field. This distribution approach makes sense when users are likely to be disconnected or only intermittently connected. Today, the level of connectivity is very high and providing access to a single, hosted instance of content is practical and solves the problem of how to ensure everyone has access to the latest material. Of course, a downloadable form of the material can also be made available.

The hosted delivery platform can also send scores to an LMS grade book, assuming both the platform and the LMS conform to the IMS LTI specification. This is becoming quite common and is a great convenience.

Hosted Courses

No matter how easy it is to download and rework content or incorporate LTI links, it is still a process to adopt material into a delivery platform. An even easier model that can work is to offer access to course instances already running on an LMS. Under such a model, an instructor simply requests a new copy of the course and is enrolled as the instructor.



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