Learning Objects (LOs)

what is it?

Learning Objects (LO)
There is much debate as to what truly constitutes a learning object. For this document we define LOs as teaching and learning material developed for use online, such as an online quiz, a tutorial, or a video.

LOs became popular in education in the early 2000s and have become a mainstay at many institutions. One has only to search Google for "library tutorials" to see the popularity of learning objects in libraries.

One important design ideal for LOs is to create smaller objects focusing on a single learning concept as opposed to larger modules covering multiple learning concepts. This allows for greater reusability and flexibility for the objects, i.e. you can use a single object or combine objects to create a larger learning module.

Design of LOs should also focus on accessibility, interactivity, interoperability, flexibility, multimodal learning and address multiple learning preferences.

Learning Object Repositories (LORs)
Part of the philosophy behind LOs is the ability to reuse and share them within your institution and with other institutions. Why? Sharing LOs avoids duplication and saves time and money. LORs arose out of a need to centrally house contributed LOs. Popular LORs include: MERLOT, Connexions, and ARIADNE.

Example LO: "You Quote It, You Note It!"

http://library.acadiau.ca/tutorials/plagiarism/
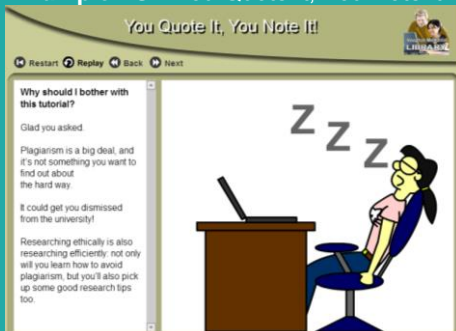
how does it work?

In libraries, LOs are typically developed to address a core skill in information literacy (such as database searching, citation, or evaluating information).

More and more we are seeing the use of e-learning software (such as Articulate Storyline or Adobe Captivate) to create HTML or Flash-based modules. These tutorials are usually text-based, with a few images or videos included throughout.

There is also a movement towards creating video tutorials. As the popularity of online educational videos in the classroom increases, libraries are creating their own videos to deliver those core information literacy skills.

Unfortunately, the quality of library LOs varies greatly. Well-designed LOs should follow instructional design principles, but you will rarely find a librarian with formal instructional design education or training (Mestre, 2010).

All too often LOs developed by libraries are passive, text-based and cover far too much content. Research has shown effective LOs should be: "interactive, visual, small in size and highly aligned with [students'] perceived learning needs" (Windle, 2011).

Libraries are getting better at developing LOs and we are seeing an increase in the development of well-designed, pedagogically sound online learning materials.

who's doing it?

Here are some good examples from the many libraries developing LOs:

- Acadia University Library - library.acadiau.ca/tutorials
- Animated Tutorial Sharing Project (ANTS) - dspace.ucalgary.ca/jspui/handle/1880/43471
- Cooperative Library Instruction Project (CLIP) - clipinfolit.org
- Kimbel Library - coastal.edu/library/videos
- Peer-reviewed Instructional Materials Online Database - primodb.org
- Seneca Libraries - library.senecacollege.ca/Research_Help/tutorials.html
- University of North Carolina Greensboro - library.uncg.edu/tutorials

why is it significant?

By using LOs, libraries can extend their information literacy program to reach a greater number of students and provide just-in-time learning. Instead of teaching hundreds of one-shot IL classes, students are assigned relevant modules to complete at logical points in the course (Farkas, 2011). This is especially useful for supporting students in hybrid and online courses, where there may not be an opportunity for face-to-face instruction.

A well designed LO will also take into consideration multiple learning preferences and accessibility. A student who struggles with the traditional classroom approach, might find LOs a more satisfying learning experience.

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further reading

Clark, S., & Chinburg, S. (2010). Research Performance in Undergraduates Receiving Face to Face versus Online Library Instruction: A Citation Analysis. *Journal Of Library Administration*, *50*(5/6), 530-542.

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Farkas, M. (2011). In Practice. Tutorials That Matter: Learning objects in the library instruction program. *American Libraries*, *42*(7/8), 32.

Mestre, L. S., et al. (2011). Learning Objects as Tools for Teaching Information Literacy Online: A Survey of Librarian Usage. *College & Research Libraries*, *72*(3), 236-252.

Mestre, L. S. (2010). Matching Up Learning Styles with Learning Objects: What's Effective? *Journal Of Library Administration*, *50*(7/8), 808-829.

Parrish, P. E. (2004). The Trouble with Learning Objects. *Educational Technology Research & Development*, *52*(1), 49-67.

Shank, J.D. (2003). The Emergence of Learning Objects: The Reference Librarian's Role, *Research Strategies, 19*(3/4), 193-203.

Windle, R. J., McCormick, D., Dandrea, J., & Wharrad, H. (2011). The characteristics of reusable learning objects that enhance learning: A case-study in health-science education. *British Journal Of Educational Technology*, *42*(5), 811-823.

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what are the downsides?

As was previously mentioned, librarians are not usually instructional designers and a poorly designed LO can be a barrier to learning, especially when it comes to accessibility. If a student can't physically or intellectually get through an LO then you have a problem. Developing a well-designed LO can take a great deal of resources, including staff time, software purchases, and professional development to gain those valuable instructional design skills.

Maintenance of LOs can be costly as well and LOs should be developed with durability in mind. Ask yourself: what happens if a vendor changes their interface? what happens if the star of my video retires? and try to plan your LO so that it can be easily edited. For example, create a database demonstration video in small chunks so that a screen capture or audio clip could be easily replaced when there is a new interface. LOs should also be reviewed regularly for currency and relevance and should be assessed whether they are still meeting your learners' needs.

Learning preference can be a tricky thing to master. You will never find an entire class that learns well with LOs; there are always students who do not like to learn online so you have to give them options. For example, create a visual, text-based, and interactive component for each lesson.

where is it going?

There is an increase in the development of LOs in libraries as we see their value for reaching more students and tailoring instruction to specific programs and courses, including hybrid and fully online courses. Evidence has found there to be almost no difference between the performance of online students versus face-to-face students in information literacy instruction (Clark, 2010) so we can feel confident moving in this direction.

As LO development starts to increase so should our skills for developing them. One look at the ili-l@ala.org listserv and you will see a variety of professional development opportunities for instructional design and libraries.

Thankfully, there are also many tools emerging to assist us with creating LOs. Products such as Captivate, Articulate Storyline, Powtoon or Softchalk make it much easier for us to create animations, demonstrations and interactive tutorials.

what are the implications for libraries?

LOs are a valuable instructional tool. They allow libraries to reach more students, address multiple learning preferences and accessibility, and embed IL instruction in online, hybrid and face-face class models. More libraries need to realize their value and become active participants in their development by:
1. Acquiring LO development skills
2. Designing accessible, multimodal LOs based in active learning
3. Creating LOs that can be used across programs at their institution
4. Sharing their LOs with other institutions by contributing them to a Learning Object Repository or making them freely available online