Assessing Learning Objects: Using the LORI tool to Evaluate NCSU DELTA QuickTrainings

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INTRODUCTION

Learning objects, by definition, are short and strive to meet a single objective (Beck, 2010; Nesbit et al, 2004). Traditional methods of learning evaluation do not fully accommodate the needs of consumers or designers of these shorter, reusable objects. A specialized tool is required to standardize evaluation among shorter learning objects and to serve the community of learners using the objects. For this purpose the Learning Object Review Instrument (LORI) was developed by Nesbit et al (2004)

Technology education takes on many forms at DELTA, including but not limited to, face-to-face or recorded workshops, seminars and online training. This evaluation will explore the online training category entitled 'Quick Training'. This category of online training is defined by DELTA as short tutorials about instructional technology tools. The quick training category is broken down into groups according to specific learning technologies.

Figure 1: Delta fosters the integration and support of learning technologies for NC State University's academic programs (Delta, 2014)

BACKGROUND

Beck (2010) defines learning objects as self-contained and reusable objects ranging from 2-15 minutes that focus on one learning objective. They may be aggregated into larger collections. Nesbit, Belfer and Leacock (2004) extend the definition to include any online informational resource. Examples can include: images, pages of text, learning activities, simulations, or short, single objective based courses.

Leacock and Nesbit (2007) offer three reasons for needing a specialized tool to evaluate multimedia learning objects: First, to ease the process of determining quality resources, second, to promote the use of quality ratings and third, to drive improvements in the design process.

The LORI is a tool for summative evaluation. It uses rating scales and comment fields to review multimedia learning objects (Leacock & Nesbit, 2007). LORI use has been published numerous times in peer reviewed journals and thus validating its use as an instrument for evaluation (Akpinar, 2008; Krauss and Ally, 2005). Krauss and Ally (2005) modified the criteria slightly to explore the design and evaluation process for learning objects. Ultimately they endorsed its use as it "represents a marked improvement over existing evaluation practices for learning objects" (p. 17). Akpinar (2008) also confirmed the LORI tool by conducting a validation study. The study employed subject matter experts, instructional designers and learners to review learning objects with the LORI tool. He found a "high level of consistency" concerning the use of the LORI (p. 299).

MATERIALS AND METHODS

The most current version of the LORI (1.5) consists of nine criteria for rating and comment (Nesbit et al, 2004). Those criteria are briefly described in Table 1. Each criterion is rated using a five point scale from 1, not meeting the criteria to 5, meets or exceeds criteria. A "not applicable" option is also included allowing the evaluator to skip criteria when there is no information or basis for evaluation. Comment fields are presented as a means to provide feedback, support and evidence for the assigned ratings. For this evaluation, an instrument was crafted based on only seven of the criteria outlined in the LORI user manual. Two criteria were eliminated due to the evaluators lacked the necessary knowledge to evaluate. This follows more closely with the Krauss and Ally (2005) modification of the LORI tool.

Table 1. LORI evaluation criteria (adapted from Leacock and Nesbit, 2007, p 45)

Item	Description
Content Quality	Veracity, accuracy, balanced presentation of ideas, and appropriate level of detail
Learning goal alignment	Alignment among learning goals, activities, assessments and learner characteristics
Feedback and adaption	Adaptive content or feedback driven by differential learner input or learner modeling
Motivation	Ability to motivate and interest an identified population of learners
Presentation design	Design of visual and auditory information for enhanced learning and efficient mental processing
Interaction usability	Ease of navigation, predictability of the user interface, and the quality of the interface help features
Reusability	Ability to use in varying learning contexts and with learners from different backgrounds

This evaluation will concentrate on only one grouping in the DELTA's quick training category. The Blackboard Collaborate, henceforth referred to as Collaborate, group was selected. This group contains eight quick trainings or learning objects to introduce the various functions and procedures for using Collaborate. Four of the objects were developed by DELTA the remaining four objects were direct from the developers of Collaborate. This evaluation only considers the four objects developed by DELTA.

All four DELTA designed learning objects are similar in nature and length with the same narrator and delivery method. All four are narrated presentations with screen captures of the processes involved. They will be addressed and evaluated in each criterion as a group. Differences between individual objects will be identified as such within each section. When addressing the differences, the objects will be referred to by number. Number assignment and individual session information is outlined below:

1. Creating a New Blackboard Collaborate Session
2. Creating a Blackboard Collaborate Session in Moodle
3. Using PowerPoint in Blackboard Collaborate
4. Joining a Blackboard Collaborate Session

RESULTS

The learning objects scored high in the areas of content quality, learning goal alignment, motivation, presentation design and reusability. Poor scores were generated in the areas of interaction usability and feedback and adaption. (see table 2).

Table 2: Scoring Results and Comments

Criteria	Score	Comments
Content Quality	5	Accurate, balanced without any obvious bias. Presentation with an appropriate level of detail
Learning goal alignment	5	Learning goals matched to learning object
Feedback and adaption	1	No have any adaptive material to suit various levels of learners but size and limited content allow for broad application to many different situations
Motivation	5	Content highly relevant and motivating to learner. The object motivated with a true to life presentation simulation.
Presentation design	4	Good design. Deductions made because presentation window was small and when enlarged was slightly blurry.
Interaction usability	2	Predictable for a user with experience. Usability is not ideal for inexperienced learner
Reusability	3	Highly reusable within the University, not ideal for outside users. Logos and dates embedded in the presentation limit wide use

CONCLUSIONS

Learning objects, the DELTA QuickTrainings included have many benefits, first, the breakdown of larger learning experiences into smaller chunks can ease cognitive overload. Second, these smaller objective specific objects can be tagged with metadata to ease the search for relevant information. Third, they are self-contained and reusable, allowing a learner to view and review the information or objective they find most relevant.

There is a need for a specialized tool to evaluate educational resources known as learning objects. One noted shortcoming is that the LORI tool focuses on evaluating individual learning objects. Learning objects are commonly aggregated into larger collections. Evaluation of single objects does not provide information or evaluation about their function within a larger unit. Future improvements would account for this type of aggregation.

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