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Multimedia Evaluation Rubric

Introduction

This paper presents a multimedia evaluation rubric to appraise two multimedia application finalists. The rubric encompasses two essential categories for evaluating multimedia, pedagogical appropriateness, and usability. Within these categories, criteria were selected for evaluation, and a Qualitative Weight and Sum (QWS) scale (Scriven, 1991) was chosen for weighting the criteria. Resources used in selecting and designing the rubric included Baumgartner and Payr (1997), Heller, Martin, Haneef, and Gievska-Krliu (2001), Reeves and Harmon (1994), Bates and Poole (2003), Opperman (2002), Kennedy, Petrovic, and Keppell (1998), and Lee (1999).

Qualitative Weight and Sum (QWS) Scale

While a Numerical Weight and Sum (NWS) scale is often used for multimedia evaluations, there are problems associated with this method. For instance, it requires a linear scale of utility for all criteria. This is problematic because educational software does not have a normed, tested, standardized, and linear scale for evaluating quality. For this reason, the QWS recommended by Scriven 1991, is our preferred method for evaluation. The method can also be modified to address criteria at different stages of the evaluation. Case in point, the method applied in the final evaluation round of the European Academic Software Award (EASA) in 1996 was a variety of QWS (Baumgartner and Payr, 1997). In that application of the QWS scale, it was determined that the "E symbol, or essential" criteria was not necessary, because that standard had been met during in prior stages of the evaluation.

The QWS scale uses the following weights for criteria:

E = Essential,
* = Very important,
# = Important,
+ = Less important

The QWS scale uses the following rating symbols for criteria:

* = meets standards
# = partially meets standards
+ = marginally meets standards
0 = does not meet standards (pass or fail for E-criteria)

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The Importance of Proper Pedagogy

Maintaining instructional quality in the online learning environment, which includes the significance of using a variety of instructional methods to account for various learning styles and the building of an interactive and cohesive learning environment, is vital to the sustainability of any learning program. Proper pedagogy must be carried out if online learning and assessment are to be viewed as a system for educating learners and assessing student academic success. "Becoming knowledgeable about online learning and assessment is crucial at a time when there is an increased demand for accountability, growth, and excellence in educational institutions. Online instruction and assessment must balance the requirements of technology, delivery, pedagogy, learning styles, and learning outcomes" (Gaytan & McEwen, 2007, p.132).

Figure 1outlines the pedagogical criteria selected for the rubric, a description of the criteria, and the weight given to each criterion.

Pedagogical Appropriateness Criteria	Weight	Description of Criteria	Evaluand #1	Evaluand #2
Learning Content	*	Consistency between learning objectives and content; helps connect material with prior knowledge; provides directives and goals; accurate and up-to-date; subject matter sufficiently covered		
Sequencing	*	Cohesive and well structured; prominence given to important information, no distracting information; material presented in a logical order		
Interactivity	*	Encourages processing of learning material and comprehension; motivates and engages students		
Feedback	*	Feedback on student progress is provided at appropriate intervals		
Assessment	#	Assessment is directly related to learning outcomes; multiple formats of assessment are used		
Accommodation of Individual Differences	+	Material is presented in multiple formats to allow learner choice; addresses learner style, disabilities		

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Pedagogical Appropriateness Criteria	Weight	Description of Criteria	Evaluand #1	Evaluand #2
Collaboration and Communication	*	Material is presented in such a way as to foster communication and collaboration between learner and content, learner and learner, and learner and tutor		
Scaffolding	#	Material is presented in such a way as to create a bridge to build upon what students already know to enable them to arrive at a desired learning outcome		
Teaching and Tutoring	#	The role of the instructor is appropriately matched to the teaching approach: Behaviorist, Constructivist		
Chunking of Learning Content	*	The learning content is broken down into easily digestible units in an effort to improve learners' comprehension and ability to access and retrieve the information		
Real world application	*	Material is presented in such a way that the learner can directly relate and apply the learning content to his or her real world		

Figure 1

Usability Criteria

Usability criteria in this rubric evaluate the instructional effectiveness and efficiency of the multimedia application as a tool for teaching and learning.

Figure 2 outlines the usability criteria selected for the rubric, a description of the criteria, and the weight given to each criterion.

Usability Criteria	Weight	Description of Criteria	Evaluand #1	Evaluand #2
Navigation	E	Functionality – ease in accessing information, moving between related information, and establishing current position within the program; user		

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Usability Criteria	Weight	Description of Criteria	Evaluand #1	Evaluand #2
		friendliness		
Interface & graphic design	#	Clarity, structure (organization), relevancy of information, coordination, aesthetic appeal, media integration, suitability for learning task		
Documentation	#	Clear, useful, online help available, includes tutorials		
Speed	#	Time it takes for the media to load or respond to the user		
System integrity and error tolerance	#	No critical errors in functioning; user errors anticipated		
Adaptability	*	Easy to update; add new content; use for other teaching/learning materials		
Reliability	#	The media used is tested, reliable, manageable, easy to maintain and upgrade		
Cost	*	The media used provide for economies of scale and are not prohibitive for adoption		

Figure 2

Conclusion

When evaluating the quality of a multimedia strategy, it is important to capture data utilizing a comprehensive approach. Gunawardena, Carabajal, Lowe and Wood (2000) stipulate that the adoption of a solitary method for evaluating the quality of online learning is unsatisfactory. Using one method only provides one moment in time, one perspective (p. 487). To ensure a well-rounded analysis, we investigate two main approaches to multimedia evaluation. We discuss the usability of educational software, as well as methodology that accentuates the pedagogical quality of the multimedia learning environment.

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