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 Multimedia Jury Award Assignment

Presenting A Multimedia Award in Quality

Introduction

The purpose of this paper is to evaluate two multimedia examples that are application finalists being considered for a multimedia award. This paper presents a multimedia evaluation rubric to appraise the two multimedia application finalists. The rubric encompasses two essential categories for evaluating multimedia: pedagogical appropriateness, and usability. Within these categories, criteria are selected for evaluation, and a Qualitative Weight and Sum (QWS) scale (Scriven, 1991) is chosen for weighting the criteria. Resources used in selecting and designing the rubric include 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).

The Two Finalists

DNA: From the Beginning		
Contributor	Website URL	Description
Produced by Dolan DNA Learning Center	http://www.dnaftb.org/dnaftb/	An animated primer on the basics of DNA, genes and heredity

The Brain from Top to Bottom		
Contributor	Website URL	Description
Bruno Dubuc	http://thebrain.mcgill.ca/flash/a/a_04/a_04_m/a_04_m_peu/a_04_m_peu.html	An interactive website on the human brain and behavior

Qualitative Weight and Sum (QWS) Scale

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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 the preferred method for 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 is used for any Essential criteria

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

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

Figure 1

Pedagogical Appropriateness Criteria	Weight	Description of Criteria	DNA: From the Beginning	The Brain from Top to Bottom
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	*	0
Assessment	#	Assessment is directly related to learning outcomes; multiple formats of assessment are used	#	0
Accommodation of Individual Differences	*	Material is presented in multiple formats to allow learner choice; addresses learner style, disabilities	*	*
Collaboration and Communication	*	Material is presented in such a way as to foster communication and collaboration between learner and content, learner and	0	0

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Pedagogical Appropriateness Criteria	Weight	Description of Criteria	DNA: From the Beginning	The Brain from Top to Bottom
		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	+	+
Summary Tally			6(*)- 3(#) – 1(+)	3(*)- 4(#) – 1(+)

Pedagogical Comments - DNA: From the Beginning

DNA: From the Beginning is broken into three detailed sections: Classical Genetics, Molecules of Genetics, Genetic Organization and Control. Each section is then further broken up into well structured, easy to read segments, and interactive assessments have a direct link to immediate learning content. The user can view the learning content in seven different languages, and a blog is available for follow up information and continued interactivity on topics that concern DNA, genes, and heredity.

Pedagogical Comments - The Brain from Top to Bottom

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The Brain from Top to Bottom contains 12 detailed chapters. Each chapter has different sections and those sections each allow user choice in degrees of difficulty (Beginner, Intermediate, Advanced), so the user can easily build upon prior levels of knowledge. Each section also allows user choice through 5 Levels of Organization (Social, Psychological, Neurological, Cellular, Molecular). The user can view learning content in two different languages. While the website is interactive, no assessment is offered, and there is no feedback given to the student.

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.

Figure 2

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Usability Criteria	Weight	Description of Criteria	DNA: From the Beginning	The Brain from Top to Bottom
Navigation	E	Functionality – ease in accessing information, moving between related information, and establishing current position within the program; user friendliness	Pass	Pass
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	*	*
Summary Tally			3(*)- 4(#) – 1(Pass)	3(*)- 2(#) – 2(+) – 1(Pass)

Usability Comments - DNA: From the Beginning

DNA: From the Beginning explains each of its key concepts through the use of animation, image gallery, video interviews, assessment exercises, biographies, and links. The structure of this interactive learning experience is structured very well. It is nearly impossible for users to

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lose their way. It is extremely easy to use. The material is copyrighted and allows for free use as long as proper citation is used.

Usability Comments - The Brain from Top to Bottom

The pages each contain a plethora of information and most of it is well organized. The interactivity elements and mouse-overs are helpful in illustrating the visual concepts. The top of each webpage offers a breadcrumb trail to keep learners focused on where they are. There are many different icons in the margins of each page and some of these icons' links are broken. This website uses a copyleft concept.

And The Winner Is...

This paper provides information on the approach of multimedia evaluation, assesses two multimedia programs based on usability criteria and pedagogical criteria, and now its time to announce the winner and summarize the major reasons why the interactive learning experience is selected. The winner of the multimedia award goes to...DNA: From the Beginning!

DNA: From the Beginning is chosen based on both its contributions in the pedagogical and usability categories. The summary tally contained within Figures 1 and 2 clearly shows that DNA: From the Beginning has some important advantages over its competition, particularly in the interface and graphic design category, the assessment category, the feedback category, and the chunking of learning content category.

Conclusion

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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, two main approaches to multimedia evaluation are investigated. This paper discusses the usability of educational software, as well as methodology that accentuates the pedagogical quality of the multimedia learning environment. Based on that information, a multimedia award winner is chosen.

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