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A-2: Rubric and Evaluation
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Introduction

The Cron Multimedia Evaluation Jury (CMEJ) was charged with reviewing and evaluating two multimedia programs (evaluands) based on pedagogical and usability criteria. The multimedia programs were offered on the Wisconsin Technical College System (WTCS) website, sometimes referred to as "wisc-online," which contains a digital library of learning objects. WTCS defines *learning object* as a self-contained chunk of learning that is web-based; it can be part of a lesson or course, and can be transported and utilized in multiple learning situations. They are considered a "basic building block of a lesson" and can be used alone or as part of a larger collection (WTCS website, 2012, "About Us"). These learning objects are authored by more than 300 WTCS faculty and produced by multimedia technicians. They are copyrighted and available at no charge to their faculty, and to registered users for educational use by teachers and students (WTCS website, 2012, "FAQ").

For this evaluation two multimedia lessons were selected that complemented each other in the field of written English – specifically, word choice such as to, too and two and vocabulary and spelling.

Method

The rubric used in this evaluation was compiled from different groups in the DETC 620 class, and the final rubric was reviewed, combined, and edited by the CMEJ. Some of the weights remained consistent, and some were revised by the jury. The completed rubrics are on pages 8 and 9 of this paper. As reported in Baumgartner and Payr (1997), the Qualitative Weight & Sums (QWS) method was used to evaluate the multimedia evaluands. The six pedagogical

criteria – broken down into one to six individual standards, included Validity, Relevance, Content, Content Interactivity, User Attitude and Feedback. The five usability criteria – again, broken down into one to nine individual standards, included Course Overview, Navigation, Usability Interactivity, Interface/Graphic Design, and Technical Access and Support by User. The weight symbols and definitions of the rating, as suggested by Baumgartner and Payr (1997) are as follows:

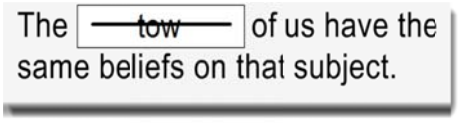
QWS Weight Key	Definition of Rating
E = Essential	**P/F** = Pass or Fail
***** = Very Important	***** = Meets Standards
# = Important, Relevant (valuable)	**#** = Partially Meets Standards
+ = Additional, Less Important (marginally valuable)	**+** = Marginally Meets Standards
0 = Zero	**0** = Does Not Meet Standards

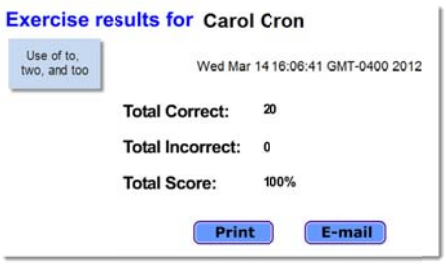
During the assessment the standard cannot be rated higher than the given weight, and the most important criteria needs to have a weight of E (for Essential). Criteria weighted as Essential must pass to be considered, so the rating for these standards is Pass/Fail (P/F).

Multimedia Contenders

Multimedia lessons were found on the WTCS website under "general education" and then "written communication." In order to have a clear difference between the lessons, effort was made to select learning objects by different authors with different structure and interaction, and, of course, on different aspects of English writing.

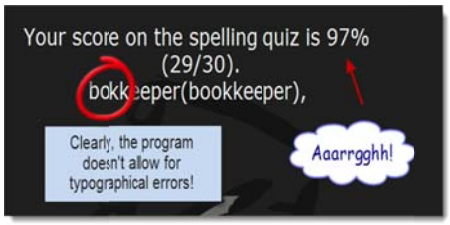
The lesson on word choice (titled Confusing Words) (Bunnow, 2002) can be found at this link: https://www.wisc-online.com/Objects/ViewObject.aspx?ID=WCN5502.

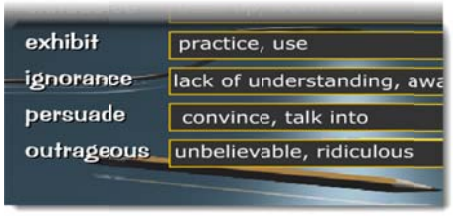




This lesson asks the user to enter their name on the opening screen, and then uses a clear structure to introduce the problem words with a definition, example and use of the word. The user is then offered an opportunity to apply this information to 20 practice sentences. Immediate feedback is provided when the "check answer" button is clicked. The display is either "correct" and next question or "sorry, the answer is ___" with a chance to review the rule. A mouse click, rather than "enter" is needed to proceed, and taking hands off the keyboard each time may cause accidental mistyping off the correct word, such as "*tow* instead of *two*." Upon completion of 20 sentences, the user, or learner, receives immediate results with their name and score, which can be printed or e-mailed to an instructor.

The Vocabulary/Spelling Quiz: Commonly Misspelled Words in Business (West, nd) can be found at this link: https://www.wisc-online.com/Objects/ViewObject.aspx?ID=WCN1701.





The lesson opens with a list of 30 commonly misspelled words and suggests the user study the words, focusing on the uniqueness of each spelling. The next instructions are to use a thesaurus to look up each word and find good synonyms, and then create sentences using the words, seeing if the synonyms fit and make sense. Next, the spelling test is given with audio presentation of the words to be typed in the input box. Results are given at the conclusion of the spelling test. The learner must use the mouse to move to the next box rather than the "tab" key, somewhat impeding the navigation. The next part of this multimedia program is vocabulary-based, and asks the user to match the words to definitions, presented as synonyms. A drag and drop feature is used, and selections can be moved around until the user is satisfied with the definitions. This part is not as user-friendly because if a screen (with 15 words on it) is skipped accidentally there is no "back" button and the final score will reflect a 50 percent error.

Results

Using the evaluation rubric, the CMEJ scored the two evaluands as follows:

			Wins		Ties
Category	**Criteria**	**Standards**	**Word Choice**	**Vocab/ Spelling**	
Pedagogical	6	19	0	3	3
Usability	5	27	2	1	2

The score was quite close because both programs were very good and met the stated weight for most standards. However, the CMEJ determined the Vocabulary/Spelling multimedia learning object to be the winner in this evaluation. Comments from the evaluation include:

Under the pedagogical category:

- the word choice evaluand fell short in the standard of challenge;
- the vocabulary/spelling evaluand was more creative with both a spelling component and an exercise to match synonyms with words; and,
- it also suggested the learner use both a dictionary and a thesaurus.

Under the usability category:

- the word choice evaluand was easier to navigate and return to prior screens;
- the vocabulary evaluand lacked thorough “back” buttons, so if a screen was accidentally skipped, the user lost 50 percent of the score as the 15 words were considered incorrect;
- the word choice evaluand had no opportunity for audio presentation, so the category was marked with “X”, meaning it could not be rated; and,
- the spelling component used a clear and easy to hear audio presentation of the words.

Conclusion

This evaluation exercise was valuable, but the use of the suggested weights and ratings was confusing and somewhat hard to remember during the process. Part of this confusion resided with the use of the same symbols for the weighting and the rating – which were essentially unrelated. For instance, the three primary symbols were: * (Very Important and Meets Standards), # (Important/Relevant and Partially Meets Standards), and + (Additional/Less Important and Marginally Meets Standards). While this evaluation was conducted with the Qualitative Weight and Sum (QWS) rather than the Numerical Weight and Sum (NWS) process, as suggested in Baumgartner and Payr (1997), it would be interesting to repeat this same evaluation substituting the NWS method to determine if (1) the process was easier and (2) the same results were obtained. The other excellent outcome of this evaluation process showed the CMEJ the vast breadth of multimedia that has already been developed and is available for educators to use as learning objects in their curriculum.

References

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MULTIMEDIA EVALUATION RUBRIC

This rubric is a compilation and variation of two group rubrics (Groups 1 and 3) from DETT 620 9040, Spring 2012 plus additional and reweighted student criteria

PEDAGOGICAL CRITERIA

Ratings for the word choice multimedia are shown in red in column one.

Ratings for the vocabulary/spelling multimedia are shown in blue in column two.

			Rating of Each Evaluand	
Criteria	*Standards*	*Weight*	Word Choice	Vocab/ Spelling
Validity	a. Objectives are clearly stated	*	*	*
	b. Content meets stated learning objectives	E	P	P
	c. Content is accurate, credible and current	E	P	P
	Weight Totals: E = 2, * = 1, # = 0, + = 0 — Tie			
	Word Choice: P = 2, * = 1, # = 0, + = 0			
	Vocab/Spelling: P = 2, * = 1, # = 0, + = 0			
Relevance	a. Learner is encouraged to apply current knowledge improve skills	#	+	#
	b. Content encourages problem-solving for realistic tasks	#	#	#
	c. Content is understandable and relevant	E	P	P
	Weight Totals: E = 1, * = 0, # = 2, + = 0			
	Word Choice: P = 1, * = 0, # = 1, + = 1			
	Vocab/Spelling: P = 1, * = 0, # = 2, + = 0 — Winner			
Content	a. Content structure is appropriate for user level	*	*	*
	b. Content is thorough and comprehensive	#	#	#
	c. Embedded learning objects are relevant to content	#	#	#
	d. Content is presented in segments to account for learning differences	*	*	*
	e. Content difficulty level is appropriate to stated level of the user	*	#	*
	f. Opportunity for learner growth and development	#	#	#
	Weight Totals: E = 0, * = 3, # = 3, + = 0			
	Word Choice: P = 0, * = 2, # = 4, + = 0			
	Vocab/Spelling: P = 0, * = 3, # = 3, + = 0 — Winner			
Content Interactivity	a. Software encourages learner-content interaction	E	E	P
	b. Learners can receive feedback	E	E	P
	c. Learners can interact with teacher	*	+	+
	Weight Totals: E = 2, * = 1, # = 0, + = 0 — Tie			
	Word Choice: P = 2, * = 0, # = 0, + = 1			
	Vocab/Spelling: P = 2, * = 0, # = 0, + = 1			
User Attitude	a. Content is motivating by being interesting or challenging	*	#	*
	Weight Totals: E = 0, * = 1, # = 0, + = 0			
	Word Choice: P = 0, * = 0, # = 1, + = 0			
	Vocab/Spelling: P = 0, * = 1, # = 0, + = 0 — Winner			
Feedback	a. Feedback is accurate	E	P	P
	b. Feedback is presented at an appropriate level	#	#	#
	c. User feedback is available for program improvement	+	+	+
	Weight Totals: E = 1, * = 0, # = 1, + = 1 — Tie			
	Word Choice: P = 1, * = 0, # = 1, + = 1			
	Vocab/Spelling: P = 1, * = 0, # = 1, + = 1			

QWS Weight Key
- E = Essential
- * = Very important
- # = Important, relevant (valuable)
- + = Additional, less important (marginally valuable)
- 0 = Zero

Definition of Rating
- P/F = Pass/Fail
- * = Meets standards
- # = Partially meets standards
- + = Marginally meets standards
- 0 = Does not meet standards

Note: A criterion cannot be scored higher than its given weight

USABILITY CRITERIA

Ratings for the word choice multimedia are shown in red in column one.
Ratings for the vocabulary/spelling multimedia are shown in blue in column two.

Criteria	*Standards*	*Weight*	*Rating* Word Choice	*Rating* Vocab/ Spelling
Course Overview	a. Learner is informed of objectives and goals of multimedia content	*	*	*
	Weight Totals: E = 0, * = 1, # = 0, + = 0 — Tie			
	Word Choice: P = 0, * = 1, # = 0, + = 0			
	Vocab/Spelling: P = 0, * = 1, # = 0, + = 0			
Navigation	a. Learner can easily locate and access consistent and clear information	*	*	#
	b. Learner can easily move between screens	*	*	+
	c. Learner can establish position in the program	#	#	+
	d. Application is user friendly	*	*	*
	e. Navigation is easy to learn and use	*	*	#
	f. Learner can easily move through the program in an intentional way	*	*	+
	Weight Totals: E = 0, * = 5, # = 1, + = 0			
	Word Choice: P = 0, * = 5, # = 1, + = 0 — Winner			
	Vocab/Spelling: P = 0, * = 1, # = 2, + = 3			
Usability Interactivity	a. Search function meets the learner's needs	#	X	X
	b. Learner controls the pace of the program	*	*	*
	c. Prompts clearly inform learner when to input information	*	*	*
	d. Feedback is available upon learner request	*	#	*
	e. Information is sequenced logically and intuitively	*	#	*
	Weight Totals: E = 0, * = 4, # = 1, + = 0			
	Word Choice: P = 0, * = 2, # = 2, + = 0, X = 1 — Winner			
	Vocab/Spelling: P = 0, * = 4, # = 0, + = 0, X = 1			
Interface/ Graphic Design	a. Information is displayed in a clear and organized way	*	*	*
	b. Colors and graphics are easy to view	*	*	*
	c. Font size of text is legible and appropriate	*	*	*
	d. Background color balances with text color	*	*	*
	e. Sound, if any, is clear	*	X	*
	f. Animation, if any, is useful and helpful and not distracting	#	#	#
	g. Media is integrated effectively, and presentation is aesthetically pleasing	#	#	#
	h. Arrangement of information is consistent and logical	*	*	*
	i. There is little to no distracting or irrelevant information	*	*	*
	Weight Totals: E = 0, * = 7, # = 2, + = 0 — Tie			
	Word Choice: P = 0, * = 6, # = 2, + = 0, X = 1			
	Vocab/Spelling: P = 0, * = 7, # = 2, + = 0			
Technical Access and Support by User	a. Technical requirements, such as Flash, Adobe or Java are clearly stated	E	P	P
	b. Status information is available, relating to the learner's activities, hardware requirements or software needs	#	#	#
	c. Technical support is available within the software	#	+	+
	d. Technical support is available online	+	+	+
	e. Learner recovers from errors quickly without loss of data	#	#	+
	f. Program easily recovers from technical glitches	#	#	#
	Weight Totals: E = 1, * = 0, # = 4, + = 1			
	Word Choice: P = 1, * = 0, # = 3, + = 2 — Winner			
	Vocab/Spelling: P = 1, * = 0, # = 2, + = 3			

QWS Weight Key
- E = Essential
- * = Very important
- # = Important, relevant (valuable)
- + = Additional, less important (marginally valuable)
- 0 = Zero

Definition of Rating
- * = Meets standards
- # = Partially meets standards
- + = Marginally meets standards
- 0 = Does not meet standards
- P/F = Pass/Fail
- X = Cannot be rated

Note: A criterion cannot be scored higher than its given weight