
ADVISOR Enterprise Media Selection Model Fact Sheet

January 24, 2013

Bill Melton, Ph.D. & J. (Jay) Bahlis, Ph.D., P.Eng.

1 (514) 745-4010 x 21

bahlis@bnhexpertsoft.com

1. **Purpose:** To provide a review of the function and validity of the Media Selection Model in ADVISOR.

2. Description of the Media Selection Model used in ADVISOR.

Plausible media for each learning objective is determined within ADVISOR by entering responses to questions related to Instructional Design Factors. The Costs of plausible media is then computed to determine the most cost effective blend of delivery options as follows:

- a. Instructional Design Factors provide questions relating to content, audience, evaluation, instructional strategies, limitations, hardware and application to identify the type of skills involved in the course, module and learning objective. They provide guidance to the decision maker as to which media option is most desirable from an educational perspective based on inputs provided by the user.
- b. To facilitate media analysis without compromising integrity, ADVISOR provides analyst with the option of grouping and analyzing learning objectives with similar characteristics together. The grouping is based on Bloom's taxonomy – but can be easily modified to support other taxonomy's as well. Moreover, templates for each type of knowledge and skill can be created and made available to analysts to speed data entry.
- c. Based on user's responses to the Instructional Design Factor questions, plausible delivery options are identified by mapping instructional requirements (user's responses) to the capability of each media (chart below). Specific instructional requirements that each media failed to meet are provided to the user to help decision makers know which desired capabilities each media cannot effectively provide. This allows the user to intelligently select a less effective media option possibly for cost or political reasons with full knowledge of capabilities lost in making that decision.
- d. A detailed cost analysis of each plausible delivery option is generated by providing data needed to estimate development, hardware, administrative, management, delivery, maintenance, and support costs.
- e. Graphical representations of the results as well as direct (budget related) costs, indirect (productivity related) costs, savings that may result from utilizing alternate delivery options, start-up and recurring costs as well as personnel required to design, develop, deliver, administer, maintain and support the course are also provided.
- f. The effectiveness and costs of alternate delivery options are taken into consideration in the recommendations. The Most Cost Effective Option rates delivery options according to their effectiveness to cost ratio – i.e., highest effectiveness at lowest cost.
- g. Once all Groups (learning objectives) have been analyzed, the results can be combined to determine the most cost effective blend of delivery options.

-
3. The effective use of the ADVISOR Media Selection model is supported by the following:
 - a. Recommended by the Canadian Military CFITES standards:
http://www.cda.forces.gc.ca/pub/doc/VOL_4_ENG_CFITES.pdf
 - b. Used and actively taught in both the SAT Basic Course and IMI Developer's Workshop (US Army) since 1998.
 - c. Used by the US Air Force since 1997.
http://www.bnhexpertsoft.com/english/products/advent/review4_newslet.htm
 - d. Used by the US Naval Education and Training since (US Navy) since 1997.
 - e. Has been the subject of several evaluations including "Searching for Efficiencies and Effectiveness in Naval Officer Training" by Commander R. Bellows (April 2000).
 - f. Introduced in the curriculum at the University of Central Florida Institute for Simulation and Training. <http://www.bnhexpertsoft.com/english/products/advent/ucf.pdf>
 - g. Introduced in the curriculum at the University of Calgary Educational Technology program. <http://www.bnhexpertsoft.com/english/products/advent/uoc.pdf>
 - h. Acknowledged and referenced by MIT Training & Development
<http://web.mit.edu/training/trainers/guide/>
 - i. Used by hundreds of corporate, military and government departments.
<http://www.bnhexpertsoft.com/english/home/clients.htm>

 4. Many organizations provide information on multimedia, media selection, and training topics. Viable alternatives for determining plausible media include the following.
 - a. Mike Hogue presents a paper providing over 20 questions which he indicates need to be considered in making a media selection and concludes his article by saying. "...Authors such as Reisner, Gagné, Briggs, Durham, Romiszowski and Kemp, Reynolds and Anderson, and Cone, are a few of the names associated with media selection models. These model formats are presented in flowcharts, matrixes, and worksheets. In general, these models present similar factors to consider when selecting media.... These common factors include "the instructional method, type of learning task (subject matter), learner characteristics, practical constraints, teacher preference, physical attributes of media (sensory channels), and physical environment (Mappin1998). With so many models and questions to consider, how does one begin to approach such a complex task?"
 - b. The Instructional Systems Development Handbook includes a Media Selection Flowchart. <http://www.nwlink.com/~donclark/hrd/sat.html>
 - c. The ASSURE Model for Selecting Instructional Media Constructed by Robert Heinich and Michael Molenda, a rather superficial approach to media selection.

-
- d. The University of Minnesota (<http://dmc.umn.edu/develop.shtml>) provides information on educational technology, including a Media Selection Guide.
 - e. A Systematic Approach to Media Selection by William W. Lee and Diana Owens, an ASTD white paper. "The Media Analysis Model is a human performance model patterned after principles of human performance theory. The model is a synthesis of work from the cognitive sciences, including the cognitive mapping work of M. David Merrill (1992), the learned capabilities research of Robert Gagné (1985), the process engineering of Hammer and Champy (1994), and the human performance principles of Thomas Gilbert (1996)."
 - f. Media Selection Matrix developed for distance learning. It groups media as low, medium and high technology and relates them to instructional strategies.
<http://www.worldcampus.psu.edu>
 - g. Portland State University and the U.S. Department of Education (under the Fund for the Improvement of Postsecondary Education (FIPSE)) are conducting a three year study to improve student outcomes in larger courses through technology, innovative course design, and assessment. The site includes a number of tools to help apply technologies to education resources, including: How to guides, Website templates, Scripted tools, Tutorials and papers, A grade delivery system, and A nice table of edtech resources.
5. Comparison of other media selection models with the ADVISOR media selection model.
- The models present lists of considerations, questions, flowcharts, matrixes and worksheets. Most of these models present similar factors to consider when selecting media.
- a. Variation exists based on the perspective of the developer. Some systems dealt with selecting media elements like text, graphic, full motion video and audio as the outcomes of the selection; others deal only with aspects of web based distance learning like E-mail, instant messaging, and chat rooms as the media capabilities to be selected; but most paralleled the media options listed for selection in ADVISOR with minor variations like adding classroom media (overhead projector) or not including media like simulator or task trainer in their options.
 - b. There are no other automated selection systems that uses the collected data to rank recommend media as well as provide a list of requirements that the media under consideration does not meet.
 - c. While many models suggest the importance of cost comparisons, no other system automatically calculates the estimated costs for each option based on user's input and allows the user to compare the costs of various options, calculate the projected return on investment and graphically display the results.