



Best Educational E-Practices (BEEP)

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Learning Outcomes and Learning Styles: Concepts for Improving E-Learning

"...the widespread development of digital processing and communication coupled to network computing...has opened up a broad set of teaching and learning opportunities, allowing a new emphasis on interaction and concept exploration."

(Annette Valenta et al, "Identifying Student Attitudes and Learning Styles in Distance Education." JALN, September 2001)

Learning outcomes and learning styles are two educational concepts appropriate to the delivery of online education. This issue examines what they are and how they can be effectively used in e-learning.

Learning Outcomes

Background

- "A Basic Guide to Writing Student Learning Outcome Statements." A step-by-step guide to writing learning outcomes. Created and maintained by the University of Western Australia.
- "Comparative Analysis of Learner Satisfaction and Learning Outcomes in Online and Face-to-Face Learning Environments." Article by Scott D. Johnson and others from the University of Illinois in the *Journal of Interactive Learning Research* (11:1), 2000.
- A Comparison of Course Outcomes: Online Distance Learning Vs. Traditional Classroom Settings. Paper by Larry W. Long, Illinois State University, and Akbar Javidi, University of Nebraska, presented at the National Communication Association Conference, 2001.
- "A Comparison of Student Outcomes & Satisfaction Between Traditional & Web Based Offerings." Article by Julio C. Rivera and Margaret L. Rice, University of Alabama, in *Online Journal of Distance Learning* (5:3), Fall 2002.
- How to Effectively Assess Student Learning Outcomes in Online and/or Hybrid Classes. Paper by William J. Ryan, Lakeland Community College (CA), and Ruth Sabean, UCLA, presented at an Educause conference, 2002.
- Learning Outcomes: Bibliography of Internet Resources. Web site with links to broad issues maintained by Malaspina University-College (Canada).
- The St. Edward's University Learning Outcomes Initiative. Excellent guide to developing learning outcomes for any type of course, done by St. Edward's (TX).
- Writing Learning Outcomes. An FAQ, outline approach, done by the American Association of Law Libraries, to writing effective outcomes, aimed at novices and non-instructors.

Examples of Learning Outcomes and Related Concepts

- Cascadia Community College. Newest and totally unique Washington State community college with an unorthodox teaching approach organized around desired learning outcomes (e.g., thinking critically and interacting successfully in diverse environments.) CCC was named a Vanguard Learning College by the League for Innovation in the Community College in 2000.
- Dr. Chamberlin's Spring 2003 Online Course Guidelines. Excellent example of learning outcomes and more by an oceanography professor at Fullerton College (CA).
- Delivering Learning Online: A Course for Facilitators. Useful example for content as well as organization, done by the National Vocational Educational and Training System, Australia. The same organization also posts learning outcomes matched with assessment criteria on a Web page called Introduction to the Internet: Learning Outcomes.
- Learning Outcomes and Assessment Criteria. Two sets of learning outcomes matched with assessment criteria for a learning to teach on-line courses at Sheffield College (UK).
- Planning an English Unit: Learning Outcomes. Sample by Phil Coogan, working on a project of the New Zealand Ministry of Education, that matches achievement objectives and outcomes.

Learning Styles

Background

- [“Adapting Online Education to Different Learning Styles.”](#) Paper by Diana J. Muir presented at the National Educational Computing Conference, July 25-27, 2001, Chicago. Results of a research project that determined, among other things, that online learning and adaptive learning styles made a difference in test scores.
- [Identifying Student Attitudes and Learning Styles in Distance Education.](#) Article by Annette Valenta and others at the University of Illinois, Chicago, in *JALN* (5:2), September 2001, that “suggests approaches on how an educational program might fine tune its online delivery for maximum suitability/acceptability to the broadest group of learners in post-secondary education.”
- [Learning Style Web Sites.](#) Rated list of sites, with more than just tests, maintained by Athabasca University (Canada) for students to both assess their preferred learning styles and find ways to work these into their studies.
- [Learning Styles.](#) List of links posted by the Support4Learning organization (UK) that includes sites for learners and for teacher/trainers.
- [Learning Styles.](#) Web site created by Robert J. Beck, Tufts University (MA), that offers an extensive bibliography, much of it hotlinked, to online sources, tests, inventories and more.
- [Learning Styles and Multiple Intelligence.](#) Web site of Elizabeth Bogod, a learning disabilities specialist, that provides background information on three basic learning types – visual, auditory and kinesthetic – as well as online tests and practical tips on how students can use their learning styles to their advantage.
- [Learning Styles and Strategies.](#) Paper by Richard M. Felder and Barbara A. Soloman of North Carolina State University that summarizes a variety of styles: active and reflective; sensing and intuitive; visual and verbal; and sequential and global. Their [Index of Learning Styles Questionnaire](#) is listed in the examples below.
- [Learning Styles and the Online Environment.](#) Summary, on an Illinois Online Network Web site, of learning styles identified as visual/verbal; visual/nonverbal; auditory/verbal; and tactile/kinesthetic. Includes an online quiz.
- [“Online Vs. Traditionally-delivered Instruction: A Descriptive Study of Learner Characteristics in a Community College Setting.”](#) Article by Alana M. Halsne and Louis A. Gatta, Loyola University of Chicago, in *Online Journal of Distance Learning* (5:1), Spring 2002, that compares and reports on the learning styles of community college students taking courses online and those taking the same courses on campus.
- [“A Researcher Says That Professors Should Be Attentive to Students’ Approaches to Learning.”](#) Article by Dan Carnevale in *The Chronicle of Higher Education*, June 29, 2001, that details an interview with Robert P. Ouellette of the University of Maryland University College.

Examples of Learning Style Surveys, Questionnaires and Other Assessment Tools

- [Abiator’s Online Learning Styles Inventory.](#) Web site done by Antonius Berghuis, New Zealand student. Unusual and award-winning, with both learning and thinking style tests.
- [Index of Learning Styles Questionnaire.](#) Simple, forty-four question survey created by previously mentioned Barbara Soloman and Richard M. Felder, North Carolina State University.
- [A Learning Style Survey for College.](#) An easy-to-take survey written by Catherine Jester, Learning Disability Specialist, Diablo Valley College.
- [The Learning Style Quiz.](#) Seven-minute test posted on the Canadian Web site WorkSearch.
- [Learning Styles: Modality Preference Inventory.](#) Brief test developed by Middlesex Community College (MA) to determine if a student is a visual, auditory or kinesthetic/tactile learner.
- [Learning Style and Self-Assessment Tests.](#) Click on Learning Tests in the left frame list of topics to see common and uncommon tests gathered by About.com. Includes the [Keirsey Temperament Sorter](#), the [VARK Guide to Learning Styles](#) and tests of all kinds.
- [Preferred Learning Style.](#) Web site maintained by the University of Alaska that includes the [Index of Learning Styles Questionnaire](#) already mentioned in this list, as well as an analysis of a variety of learning types: active/reflective; sensing/intuitive; visual/verbal; and sequential/global.
- [A Survey of Learning Style.](#) A thirteen-question problem-solving survey to determine learning style: visual, aural, reading/writing, or kinesthetic. Posted with permission by the Purdue University (IL) Chemistry Department from *The Teaching Professor* (Madison, WI: 1993).