Summary of Instructional Design Papers

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Introduction

This paper examines two different papers. The first paper was written in 2003 by Russell K. Baker of the University of Tampa and proposes a framework for developing and evaluating distance learning courses. The other paper was written by Harold Henke in 2001 and explores design issues as they pertain to online distance learning through the Internet. Only Henke's third chapter will be summarized for the purposes of this paper. A conclusion and personal impressions of each paper will follow both summaries.

Summary of Russell K. Baker's Paper

Baker's study begins by recognizing the limitations of his study. The study restricted itself to distance learning courses in the K-12 range of primary and secondary education. Such courses often did not allow observers access; those that allowed observers did not grant them full access (Baker, 2003).

Moving on to discuss his literature review, Baker introduces the concept of Bloom's Taxonomy to readers as a framework that classifies both the kinds of behavior desired from learners after instruction and the extent to which those learners exhibit desired behaviors. Much of the taxonomy deals with the classification of learning objectives in the cognitive domain: knowledge, which involves remembering previously learned material; comprehension, which involves grasping the meaning of material; application, which involves using learned material in new and concrete situations; analysis, which involves breaking down material into its component parts and understand its organizational structure; synthesis, which involves assembling parts together to form a new whole; and evaluation, which involves judging the value of material for a given purpose (2003). Baker then discusses Bloom's use of specific action verbs which help to define learning objectives which fall under these categories. Ultimately, an instructional designer should define what is expected of a learner as clearly as possible.

Baker moves on to discuss Tyler's Basic Principles of Curriculum and Instruction. In that book, Baker notes, Tyler lists four objective-centered principles: objectives, experiences, organization, and evaluation. These principles are listed as open-ended questions that instructional designers are meant to answer in order to address problems with the curriculum and instruction of a given course (Baker, 2003).

According to Baker, Tyler stresses the need to employ objectives as a focus for teaching and as a criteria for evaluation. Tyler stated that learning objectives were important for new students as they helped them to discern whether or not they were fulfilling expected outcomes (Baker, 2003). The objectives should be based on the students' needs and interests, what expectations for competency their society has for them, and the subject of the course. A useful learning objective also must be defined in a way that specifies the desired behavior and the context (such as content or area) addressed by that behavior (Baker, 2003). Baker also notes that Tyler's principles have drawn some criticism; these criticisms include that such clearly defined goals are unsuitable for a higher-learning environment as such topics are not so easily compartmentalized.

According to Tyler, learning experiences are interactions between the active behavior of learner (not the instructor) and the environment (Baker, 2003). Instructors facilitate learning experiences by setting the environment for learning, by ensuring that the delivery method of instruction satisfies the desired outcome(s), and by structuring activities to cultivate expected behavior. Baker lists five additional principles Tyler developed for learning experiences: learners must practice the behavior expected of them; learners must be capable of performing that desired behavior; learners must be satisfied from performing the expected behavior; learners should be able to apply a variety of experiences in order to satisfy the outcome; and finally, the same learning experience should result in multiple various outcomes (2003). Tyler states that developing learning experiences is a creative process, and there is no prefabricated approach for every objective (Baker, 2003).

According to Baker, Tyler also states that learning objectives must be organized in such a way that they reinforce one another, achieve continuity, and help identify the major elements that structure other elements (2003). Tyler provides a three-level approach to structuring elements: the entire curriculum, sequential courses within that curriculum, and individual course design or lesson plans for those individual courses. In addition to these, Tyler provides three guidelines for organizing a curriculum: major elements within a curriculum should be reiterated (continuity); each experience should build upon the preceding one while broadening and deepening exploration of the subject (sequence); and curriculum experiences should share a relationship with one another (integration) (Baker, 2003).

Baker relates Tyler's approach to performance evaluation as thus: establishing the top-level objectives, adding subordinate objectives, defining those objectives as behaviors, create learning experience which demonstrate those desired behaviors, implement evaluation which reflect the objectives, collect data on learner performance, then compare that performance to the expectations set by the objectives. If learner performance deviates from those expectations, these discrepancies should be given to learners as feedback, and then the cycle of performance evaluation repeated until learners perform satisfactorily (Baker, 2003). Evaluations need to focus on how the behavior of students change; a series of evaluations can help track progress, beginning with a baseline evaluation before instruction followed by additional evaluations throughout the course. Methods of evaluation include tests, observations, interviews, and portfolios. Regardless of the methods used, in order to be effective they must necessitate the same skills required of students to demonstrate the desired change in behavior (Baker, 2003).

Baker moves on to discuss other authors' works. According to Baker, Kenneth Blanchard states that 80 percent of important results are derived from 20 percent of goals as most goals are poorly defined and communicated (2003). To be effective, goals must be specific (clearly defined and

concise), measurable (clear indication when the goal is achieved), attainable (the learner attempting the goal believes it is doable), relevant (focused on desired behavior), and trackable (includes milestone points to determine progress). This list is what Blanchard calls the SMART goal concept (Baker, 2003). Goals must be clearly communicated and understood in order to be accomplished. Baker mentions that Blanchar's SMART goal concept was then developed into a framework for linking goals into performance by Edward Locke and Gary Latham (2003). This framework stated that goals which are more likely to produce desired behavior in students involved those which were specific, challenging but attainable, beneficial for and were accepted by the aforementioned learners. However, the complexity of a given goal's tasks, how often and how well learners receive feedback, and other uncontrollable situational factors can still dampen the learners' performance (Baker, 2003).

Baker then discusses distance learning tools, noting that designing distance learning courses requires consideration of the differences between traditional and distance education (2003). All traditional courses are face-to-face and synchronous; these settings give instructors ample opportunity to observe, direct, and provide feedback, while learners can receive (and solicit) all of these in real-time. Traditional learning puts learners with other learners, who can interact and benefit from each others' experiences. Finally, the necessity of attending regularly scheduled classes may provide additional motivation for learners to perform well (Baker, 2003). Baker lists a number of web-based tools for developing distance learning courses and instructional material, among them syllabus and course outline posting; video classrooms; course notes; course reference materials, readings, and cases; chat rooms; e-mail; bulletin boards, group discussion boards, and digital drop boxes; online testing; interactive activities; feedback; virtual classrooms; and whiteboarding (2003).

Baker moves on to discussing methods of analysis, starting with a framework for design and evaluation. Baker believes that combining Bloom's classifications and Tyler's principles can serve as the framework for designing and evaluating distance learning curricula, starting with Bloom's criterion,

then Tyler's objectives, Tyler's experiences, Tyler's organization, and finally Tyler's evaluations (2003). Baker goes further and incorporates the successful goals that Blanchard and Locke developed in order include potential design and evaluation points (2003). From there, Baker integrates evaluation questions into the framework by formulating a question for each of the items in his list. For example, for Tyler's objectives, Bloom poses the question: “Is the objective statement written utilizing verbiage appropriate to the Bloom criterion?” (2003)

Baker moves on to discussing implementation of an evaluation scale for the curriculum and its design. Here, Baker assigns point values for each of Tyler's principles, weighted so that each of the questions Baker developed for Tyler's objectives and experiences have a value of 2.5, while questions pertaining to Tyler's organization and evaluation principles have a value of 5.0 (2003).

Summary of Harold Henke's Paper

Henke (2001) begins his paper by stating his intent to focus on the user interface of web-based instruction courses. He noted from his literature review that many designers take user interface design for granted, or neither have the support nor the training to create well-designed interfaces. Poor interface design may prevent students from learning (2001). Henke notes that web-based instruction can be considered both an application and a website. To this end, he considers two different sources as metrics for reviewing web-based instruction: Nielsen's Top Ten Web Design Mistakes and Jones' and Okey's Interface Design for Computer-based Learning Environments (2001).

Henke then lists Nielsen's Top Ten Web Design Mistakes: using frames, which creates difficulty in setting a bookmark; using too much “bleeding-edge” technology, rather than only when the content calls for its use; employing scrolling text, marquees, and looping animations, which distract the reader; complex User Resource Locations (URLs), as lengthy addresses that do not use lower case letters make it difficult to navigate to the URL; orphaned pages, which have no method to return to the index page;

long-scrolling pages, as only ten percent of people scroll further than what is visible immediately; lack of navigation support, as websites should provide navigation links (and ideally a search engine function) to access information, as well as “back” or “next” links if laid out sequentially; non-standard link colors, as the common convention is blue links for unvisited pages and purple or red links for visited pages; outdated information, as any information considered old by users will lead them to believe the entire course is outdated; and overly long download times, as according to Nielsen humans have traditionally ten seconds before they begin to lose interest, but due to connectivity issues on the Internet, users are trained to extend this period to fifteen seconds (2001).

Henke then moves on to discuss Interface Design for Computer-based Learning Environments by Jones and Okey. At the time Henke wrote this paper, these metrics were not considered proven and only based on research into human-computer interaction (2001). The metrics include a set of User Interface Design Guidelines which have their own subset of relevant concepts, all of which come with evaluation items in order to assess the design of a computer-based learning environment (Henke, 2001). The five major concepts include browsing, media integration, metaphors, information access, and unfamiliar territory (2001).

Henke then develops measurement scores for both of the metrics he discusses in his paper. The scale is the same for both metrics, in which Henke provides a four-point severity scale ranging from 0, which represents no issues with that particular metric, to 4, which represents a problem so severe that the product is unusable unless it is fixed (2001). Although none of the authors behind either metric suggest using rating scales with their guidelines, Henke asserts that assigning such a scale alongside observations would make for an effective assessment on a product's usability (2001). When using Henke's measurement system, the end product should consist of a list of each metric, its severity scale score, and the reviewer's observations. Reviewers should also include a summary of improvements with their report, so that other readers can determine for themselves the report's objectivity (2001).

Henke continues with an example of a web-based instructional course he uses as an example of how to perform an evaluation with his system. Henke chose a contemporary course on HTML3 by the Waite Publishing Group for the following reasons: the only expenses involving the course lay in the textbook itself; the course required minimal system requirements for the time period, needing only a web browser and an internet connection; Henke is familiar with HTML as a subject, which meant that he could function as a subject matter expert; the Waite Publishing Group was considered a leading publisher of computer technology textbooks during this time period; Henke found the combination of a physical textbook and an online web-based instructional course interesting and novel for the day (2001). Henke ended the chapter with a brief description of how the interactive course functions. The course is laid out in a manner similar to a traditional course, with nine chapters, a “midterm” and “final” exam, and a multitude of quizzes interspersed between them (2001). Except for the midterm and final exams, everything in the online course has a physical copy within the textbook. The site also provides a way to print out a certificate stating their completion of the course (2001).

Conclusion

After reading both papers, it becomes clear that each author sought to devise a system by which distance learning courses could be evaluated for their effectiveness. Although both authors approach the concept with the same method, Baker's system is far more in-depth than Henke's, with a far longer list of items with which to evaluate an online course. On the other hand, Henke's system does not deal with the same aspects of distance learning that Baker's system does. Henke's system is more concerned with the interface design of online courses, while Baker's system provides more focus on course content, activities, and methods of communication between instructor and learners. Therefore, if a designer wishes to evaluate their distance learning product, it would be prudent to use both Baker and Henke's systems to determine its effectiveness.

References

Baker, R. (2003). *A framework for design and evaluation of internet-based learning courses: phase one- framework justification, design and evaluation.* Retrieved March 23, 2016, from http://www.westga.edu/~distance/ojdla/summer62/baker62.html.

Henke, H. (2001). *Evaluating web-based instructional design.* Retrieved March 23 2016, from http://hrast.pef.uni-lj.si/~joze/podiplomci/prs/clanki03/evalwbi.pdf.

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Read and **understand** the content of the following PDF files carefully. Conduct summary 4 and submit it on time (March 26). This will receive a maximum of 15 points (see rubric).

http://www.westga.edu/~distance/ojdla/summer62/baker62.html
A Framework for Design and Evaluation of Internet-Based Distance Learning Courses
Phase One - Framework Justification, Design and Evaluation
http://hrast.pef.uni-lj.si/~joze/podiplomci/prs/clanki03/evalwbi.pdf
Evaluating Web-Based Instructional Design

Rubric:
Introduction (3 points)
Body (3 points)
Conclusion, your rating of the paper (3 points)
Free of Spelling and grammer error (writing center) (3 points)
Typed and Title (3 points)