Kurt Rowley
RESEARCH WHITE PAPER

With a background in educational and technology research, Kurt Rowley PhD & Associates are well-prepared to write proposals, design studies, manage research programs, conduct all aspects of data collection and analysis, and write research reports. In addition we conduct qualitative or quantitative studies, and have experience designing training technologies using advanced learning research. Dr. Rowley's research reports have been published in peer-reviewed journals. The outcome of a study is generally a final report or publication, and optionally assistance with marketing, support, or other related activities for derived products. The following are abstracts of publications from research studies and literature reviews.

Rowley, K. (2005). Inquiry into practices of expert courseware designers. Journal of Educational Computing Research, 33(4), 419-449.

> A multi-stage study of the practices of expert courseware designers was conducted with the final goal of identifying methods for assisting non-experts with the design of effective instructional systems. A total of 25 expert designers were involved in all stages of the inquiry. A model of the expert courseware design process was created, tested, and refined through four try-outs. The final version of the model included instructional design task descriptions and electronic worksheets. The study revealed a common expert process that included the use of rapid prototypes, an opportunistic method of applying 14 key instructional design tasks, 8 success factors related to courseware design, and design guidelines for 10 preferred instructional strategies for courseware.

Bennett, J., Bunker, E. & Rowley, K. (2003). Managing the development of technology-based courses: Success factors from eight government training programs. *Acquisition Review Quarterly*, 10(1), 76-95.

> A study was conducted to determine whether success factors identified in traditional higher education distance learning research literature were important to technology-based course development efforts at Defense Acquisition University (DAU). The study included a literature review, a list of candidate success factors from the literature, data collected through interviews with eight faculty course development managers, and data analysis to correlate findings with the research literature. The

study indicates that many of the success factors found in the literature were also important to management of the DAU course development projects. A number of additional success factors identified were important for the DAU courses and may be important for other distance education development environments. Recommendations for development managers of distance education courses are proposed.

Rowley, K. & Meyer, N. (2003). The effect of a computer tutor for writers on student writing achievement. *Journal of Educational Computing Research, 29(2), 169-187.*

A Computer Tutor for Writers (CTW) was designed to provide procedural facilitation to high school students while they learn the skills and knowledge associated with composition writing. Four previous year-long studies helped identify how to facilitate specific elements of the writing process. The CTW was designed to combine lessons learned from these previous studies, and provide a comprehensive support system in which students could complete classroom writing assignments. Additional factors influencing the design of the CTW were field input from high school English teachers, cognitive research into the writing process, and the cognitive apprenticeship instructional strategy. A test and evaluation of the CTW conducted during a full school-year with regular writing classes produced writing achievement gains of up to one letter grade above control groups (N = 471). Teachers and students reported that the CTW appeared to improve both the ability of students to follow a complete writing process and their ability to achieve related learning objectives.

Rowley, K., Bunker, E. & Cole, D. (2002). Designing the right blend: Combining online and onsite for optimal training results. *Performance Improvement, 41*(4), 26-36.

Many organizations are now responding to the opportunity for online training by blending their technology solutions with traditional classroom training. These blended solutions allow existing organizations to move into hybrid learning environments that include a significant role for e-learning alongside traditional training and instruction. ... To demonstrate the importance of selecting appropriate instructional and development approaches, a case highlighting the blend of online and onsite strategies in a military training course is described ... The case study concerns an Intermediate Systems Acquisition Course for the US Defense Acquisition workforce. ... DAU wanted to use a blended approach to promote cooperative, team-based activities and emphasize the need for students to learn how to interact as members of an integrated product team. ...   The selected instructional strategy was

strongly influenced by the theories of situated learning and problem-based learning. ... The instructional strategy for the course was designed to address the motivational and practical concerns and enhance the transfer of training into practice. This included the immersion of the student in two role-playing scenarios through 35 web-based multimedia problem solving lessons, followed by a week-long, on-campus group activity. ... The design and development approach for the course needed to facilitate the coordination of inputs from a large number of stakeholders and manage many concurrent tasks. It also needed to address the learning objectives from 11 different subject areas. ... The design process for the online lessons was an implementation of a rapid prototyping approach to instructional design in which a lesson-level ID-IPT (Instructional Design Integrated Product Team) was formed to coordinate the design, development, and evaluation process for each of the 35 online lessons. ... An analysis of the case reveals a number of important issues that emerged relative to the implementation of a blended training solution. ... The results of the summative evaluation of the course indicated that there was an unusually high level of satisfaction with both the online portion and the onsite classroom portion . ... The organization was able to take advantage of the opportunities of a blended environment to create improved learning outcomes.

Rowley, K., Carlson, P., & Miller, T. (1998). A cognitive technology to teach composition skills: Four studies with the R-WISE writing tutor. *Journal of Educational Computing Research*, *18*(3), 259-296.

Four studies examined the effectiveness of user-adaptive computer-aided instruction that explicitly models the cognitive processes of composing for developmental writers, and is integrated with classroom composition instruction. The four school-year studies were designed to build on each other, each informing design improvements to a writing tutor named Reading and Writing in a Supportive Environment (R-WISE) as well as informing subsequent research designs. The first year study (N = 852) compared traditional classroom controls with R-WISE treatment classrooms. The second year study (N = 1,151) compared students using R-WISE with students using a word processor. The third year study (N = 1,277) measured the effect of the teacher's instructional style, and the level of student control over the R-WISE software, on student performance. The fourth year study (N = 617) replicated previous studies. The treatment groups for the four studies each posted significant gains over controls on most holistic and analytical measures of writing quality. The results of resting multiple design factors of R-WISE demonstrated the efficacy of long-term evaluation and enhancement of user adaptive writing software in a field-based context.

Hudzina, Marilyn; Rowley, Kurt; Wager, Walter. (1996). Electronic performance support technology: Defining the domain. Performance Improvement Quarterly, 9(1), 36-48. (also reprinted in an niversary issue, vol. 10).

> Electronic performance support is an expanding area within the field of performance t echnology. This article reviews and classifies the literature, both conceptual and cas e-based, in order to assess settings for use, initiating factors for development, and ge neral features of the various systems. Identification of each article reviewed is prese nted in a matrix of categories that can be used to point those interested in specific as pects of this complex topic to the most pertinent information for their own needs. A g eneral summary of findings follows.

Rowley, Kurt & Hudzina, Marilyn. (1995). Mega planning: A simulated re-invention of U.S. public schools. *International Journal of Educational Reform*, 4(3), 271-284.

> Given the rapidly changing nature of society, it is becoming increasingly difficult to reach consensus over the design requirements for our mutifaceted public school system. ...   New paradigms of school design have been suggested such as a systematic, formal design of school systems. ... A simulation of a re-invention process for education was developed using the Kaufman Mega Planning model. ... The model used a global outcome-based strategy, and followed a problem-solving heuristic to develop system purposes, or missions for education. The planning simulation demonstrated the usefulness of the Mega Planning model for developing a mission-oriented plan for re-inventing education. ... Important issues related to the use of Mega Planning in educational system design emerged from the simulation experience.

Rowley, Kurt. (1995). Understanding software interoperability in a technology-supported system of education. *Cause/Effect*, 18(3), 20-26.

> As technical compatibility standards have become critical in business and industrial computing, educational software interoperability is rapidly becoming an issue for users and developers of educational information systems. New software

interoperability initiatives are under way in several domains of educational computing, including library automation, higher education information services, and K-12 performance support systems. A number of important issues face educational computing and information technology managers, developers, and researchers with regard to new educational software interoperability efforts.