We found that CWS can do a reasonable job of capturing expertise in arithmetic compared to indices that incorporate correct answers. We also found (in conjunction with Rick Thomas and Alex Kirlik) similar results for a performance domain, putting a golf ball. In addition, we initiated the development of designs that allow the extraction of individual performance from team scores. We used the CTEAM simulation to study the development of expertise of teams of simulated air traffic controllers. CWS served as the primary index of performance, although traditional measures were examined as well. As a performance measure, CWS (based on time through sector) was observed to be more sensitive to improvement over practice than operational errors. Experts make too few errors to provide differential accuracy information, while CWS attends to aspects of performance that can always be observed, whether errors are made or not.
Final Report

“Performance Evaluation of Expert Team Members”

Submitted to Jerome Busemeyer, Program Manager

AFOSR Grant #FA9550-04-1-0230


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Objectives: Our goal was to explore the utility of the CWS index of performance, and to apply that index to team performance.

Key Findings: We found that CWS can do a reasonable job of capturing expertise in arithmetic compared to indices that incorporate correct answers. We also found (in conjunction with Rick Thomas and Alex Kirlik) similar results for a performance domain, putting a golf ball. In addition, we initiated the development of designs that allow the extraction of individual performance from team scores.

We used the CTEAM simulation to study the development of expertise of teams of simulated air traffic controllers. CWS served as the primary index of performance, although traditional measures were examined as well. As a performance measure, CWS (based on time through sector) was observed to be more sensitive to improvement over practice than operational errors. Experts make too few errors to provide differential accuracy information, while CWS attends to aspects of performance that can always be observed, whether errors are made or not.

At the individual level, initial (untrained) skill superiority was maintained over trials. Moreover, training yielded skill superiority that was not overcome with practice. Thus, with individuals, rank orders of performance were maintained whether initial superiority was produced by individual differences or by training.

A similar picture emerged for team training. That is, initially superior teams maintained their advantage over trials. Although, inferior teams generally improved with practice, they did not catch up to the superior teams. As with individuals, final rankings were highly correlated with initial rankings.

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Publications:


Weiss, D. J. (in press). Extracting individual contributions to a team’s performance. *Teorie e Modelli*.


Presentations:


Shanteau, J. Why dynamic decision making is important for understanding expertise. Keynote presentation at the Risk, Decision and Human Error Conference, Rovereto, Italy. January 2004.


Shanteau, J. Portraits of five pioneers of JDM: In their own words. Special invited presentation at the Society for Judgment and Decision Making meeting, Minneapolis, November 2004.


Shanteau, J. *Friendly vs unfriendly environments: The impact on decision making models.* Colloquium presented at School of Social Science (Business), University of Toulouse, France. October 2005.


Shanteau, J. *Psychological perspectives on organ donation: The reason for the shortage.* Colloquium presented at the Department of Nursing and Midwifery, University of Stirling, Scotland, May, 2006.

Shanteau, J. *The design of everyday decision making.* Informal presentation at the University of Stirling, Scotland, May 2006.


Weiss, D. J. *How to study expertise.* Invited presentation at the California State University Regional Human Factors Conference, Long Beach, CA, February 2006.


Weiss, D. J. *Evaluating people who evaluate people.* Colloquium presented to the Department of Psychology, Carleton University, Canada, January 2007.


**New discoveries, inventions, or patent disclosures:** None.

**Honors/Awards:** Shanteau was named as *University Distinguished Professor* at Kansas State University in April 2005.