Greetings, colleagues! Welcome to (almost) the new millennium. I'm one of those who started counting at 1 (there was no Year Zero that we know of), so last New Year's wasn't a time of much excitement for me. However, when we get to the real millennial celebration, I think I'll let go a bit. Just a few more months, now...

The real reason for excitement, though, is coming a little sooner. The HFES/IEA Congress in San Diego is almost upon us. This will be a marvelous opportunity to meet and exchange ideas with many of our international colleagues with whom we seldom have opportunities to be in the same place at the same time. I expect to learn a good deal from practitioners from practically everywhere during the meeting, and to refresh my thinking with some new perspectives and ideas. I trust you will be able, as well, to take advantage of this rare event.

The Training TG has put together a substantial portion of the program (I'm not sure exactly how many papers and sessions we are responsible for at this meeting, but we are commonly among the best-represented TGs on the technical program), and I hereby thank everyone who contributed to the (accelerated) process by submitting work for presentation. We will, as usual, learn a lot from one another.

I have requested of HFES that our TG business meeting be a breakfast meeting this year, on Tuesday. This should get us off to a reasonable start, as well as allowing time to pursue what business we will have in hand at that time. This should also help to minimize schedule conflicts with other TG business meetings, since many of us are involved in more groups than one. Unfortunately, attendees will have to pay for a portion of the cost of this breakfast meeting (approximately $7.00). Please don't let that stop you from attending.

See you in San Diego!

Tom Roth
Here's a look at the TTG's sessions at HFES/IEA 2000

Paper Sessions

**Advances in Training Research**

**Tuesday, August 1, 2000, 10:15-11:00**

<table>
<thead>
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<th>Presenter(s)</th>
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<tr>
<td>Regan &amp; Triggs</td>
<td>Evaluation Of A Novice Driver CD-ROM Based Training Program: A Simulator Study</td>
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<tr>
<td>Smith et al.</td>
<td>Field evaluation of an intelligent tutoring system for teaching problem-solving skills in transfusion medicine</td>
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<td>Kontogiannis &amp; Linou</td>
<td>Making Instructions Visible: Implications for Interface Design</td>
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<td>Metzger</td>
<td>Effects of Variable-Priority Training on Automation-Related Complacency: Performance and eye movements</td>
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<td>Shebilske &amp; Tubre</td>
<td>Simulating Spatial Memory Challenges Confronting Astronauts</td>
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**Situation Awareness and Embedded Training**

**Thursday, August 3, 2000, 10:15-11:00**

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<th>Presenter(s)</th>
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<tr>
<td>Lickteia</td>
<td>Applying Digital Training Technologies to Shape User Representations</td>
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<td>Endsley et al.</td>
<td>Pilot Situation Awareness Training in General Aviation</td>
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<td>McClosky et al.</td>
<td>Training Cognitive Skills in the Context of the Domain</td>
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<td>Cook et al.</td>
<td>Training Feedback: Does it help?</td>
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More Paper Sessions

Group and Team Training
Friday, August 4, 2000, 10:15-11:00

Tang
Does Group Training Work for Adults?

Cooke et al.
Improving Teams' Interpositional Knowledge Through Conceptual Cross Training

Van Berlo
Empirically-based Support of Designing Team Training Systems

O'Shea et al.
The Mathematical Modeling of Team Training

Archer et al.
Training as a Performance Shaping Factor in Computer Generated Forces

Designing Training for Industry and Military Applications
Friday, August 4, 2000, 1:00-2:15

Nash
The Effect of Using Wearable Computers for Training on a Circuit Wiring Task

Pereira
DOUBLE EVOLUTION - a Computer-based Quality Management System for Enterprise-specific Training

Ross et al.
Designing Training for Adaptive Battlefield Thinking

Shahnavaz
Creating Ergonomic Awareness in Industrially Developing Countries (IDC)

Berthelette et al.
Evaluation of the Outcomes of an Occupational Health and Safety Training Program
Symposia

Human Performance Models in Training Systems
Thursday, August 3, 2000, 1:00-2:15

Presenters: Cannon-Bowers, Bolton, & Campbell

Defining Situation Awareness: Implications for Training
Friday, August 4, 2000, 2:45-4:00

Presenter: Oser
Title: Defining Situation Awareness in a Military Aviation Training Community:
Theoretical and Practical Implications for Training

Highlight from HFES '99

Leigh Paulus Wins Best Student Paper

Leigh Paulus is currently pursuing her doctorate in I/O Psychology at Texas A&M University. The paper she presented at the HFES 1999 conference was her Master's Thesis. Her primary research interests are training design and evaluation, personnel selection, and predictors of job performance. The following is a summary of her paper.

The objective of this study was to empirically test whether a dyadic protocol consisting of an alternating sequence of hands-on practice and passive observation can achieve the same performance level as an individual protocol, consisting entirely of hands-on practice. Specifically, trainees in a dyadic protocol alternated 4 hands-on practice sessions with 4 passive observation sessions on a complex task and were tested individually for amount of complex skill acquisition.

The Alternation of Performance and Observation-dyad (APO-Dyad) was hypothesized to benefit from observational learning as well as distributed practice and was hypothesized to be as effective as an individual protocol when assessing skill acquisition using the research tool, Space Fortress. In addition to the individual and APO-Dyad protocols, the study included the Observe-Only (OO-Dyad) and Observed Player (OP-Dyad) protocols. Participants in these two protocols paired up to form dyads with the OP-Dyad participants serving as models for the OO-Dyad participants. The OO-Dyad protocol was included to investigate the amount of information a trainee can acquire by observing a partner play 8 consecutive hands-on practice games. The second study served to replicate and extend the results from the first study. In Study 2, the Alternation of Performance and Rest-dyad (APR-Dyad) was included to investigate the amount of information a trainee can acquire through a distributed practice
Posters

Weibe
Transfer of Training Between 3-D Computer-aided Design (CAD) Systems

Pak & Rogers
How Would You Describe the World Wide Web? Analogies of the Web from Users

McDonald et al.
A Preliminary Evaluation of an Advanced Embedded Training System

Periera et al.
Pilot Ergonomic Analysis of Movement Retraining of Computer Users

Bruder et al.
INTEGRAL - an Interactive Tool for the Web-based Training of Ergonomics

Umemero
Difference of Exploratory Behavior in Computer Skill Training according to the Occupational Status of Trainees

Ruffner et al.
Human Factors Design And Training Issues In The Development Of A Night Driving Training Aid

Grzegorz & Aleksandra
Multimedia Training Systems for Education and Industry

Romoser & Eberts
Improving the Effectiveness of Computer Assisted Instruction: A Study of On-line Lesson Structure and Student Learning Styles

Best student paper continued from page 4...

schedule interspersed with periods of rest, rather than observation.

With regard to the efficiency of the APO-dyadic protocol, in spite of having half the amount of hands-on practice, participants in the APO-dyad achieved the same level of task performance as those in the Individual protocol. Thus, the APO-dyad protocol displayed a 100% increase in efficiency, since it simultaneously trained two individuals at the same computer station. In Study 2, although there was not a significant condition main effect, post-hoc analyses revealed that the Individual participants scored significantly higher than the APR-Dyad participants on Sessions 1, 2, 8, 9, and 10. Differences were not detected between the APO and APR-Dyad.

Best student paper continued on page 8...
Announcements from the Training Technical Group

What are the most significant works dealing with human factors issues in training?

Many thanks to those of you who provided us with titles the last time this question was posed. In an effort to gain more information, we would like those of you who may not have responded previously to answer this question: what are the most significant seminal works dealing with human factors issues in training? Please email your response to RhodenizerLG@navair.navy.mil. Thanks so much for your response.

Here are some that have been suggested:

- Roscoe. *Aviation Psychology.*
- Wickens et al. *An Intro to Human Factors Engineering.*
- Salvendy. *Handbook of Human Factors & Ergonomics.*
- Kroemer et al. *Ergonomics: How to Design for Ease & Efficiency.*
- USARI's series on Implementing Embedded Training.
- Goldstein. *Training in Organizations.*
- Swezey & Salas. *Teams: Their Training & Performance.*
- Adams. *Historical review and appraisal of research on the learning, retention, and transfer of human motor skills.*

How would you describe your expertise in the field?

As many of you are aware, HFES has been discussing ways in which the society can have a bigger impact in industry and politics. To support HFES in their endeavor, the Council of Technical Groups has asked that each of the technical groups comprise a taxonomy of its areas of expertise and specialization. The list we generate should be broad enough to encompass our diverse membership, yet narrow enough to demonstrate true expertise. There are many reasons for generating such a list. For instance, the taxonomy should serve to support the identification of experts to whom individuals can be referred when information is requested or other opportunities arise. As of now, our technical group has not yet begun a list. So, please forward the descriptors and keywords you would use when describing your/our expertise to Lori Rhodenizer. Feel free to email your response to the following address, RhodenizerLG@navair.navy.mil. As always, your contributions are appreciated!

Would you like to contribute to the Newsletter?

I would like to thank Barry Goettl and Leigh Paulus for their contributions to this edition of the Training Technical Group Newsletter. We are always looking for articles for the newsletter. If you have an idea for a featured article, please do not hesitate to contact Lori Rhodenizer, Newsletter Editor, at RhodenizerLG@navair.navy.mil. Your contributions are appreciated!
Announcements from HFES

HFES/IEA 2000 Registration has begun!!

Here's some important information you should know!

Conference Dates: July 30 – August 4, 2000
Location: San Diego Marriott Hotel and Marina

Important Deadlines:
To get your tickets prior to the Conference register by June 16, 2000
Early Registration ends June 21, 2000
Deadline for reserving hotel rooms is July 1, 2000
Last day to request a refund is July 14, 2000
Register online at http://iea2000.hfes.org

Upcoming Conference

6th Conference on Human Factors & the Web
Conference Date: June 19, 2000 & Tutorial Dates: June 20 – 21, 2000
Location: University of Texas, Thompson Conference Center, Austin, TX

The purpose of this conference is to provide a forum for sharing information among a community of human factors engineers, designers, and developers who are interested in producing web sites that are more useful and usable.

Check out the web for more information:
http://www.tri.sba.com/hfweb
http://www.optavia.com/events/aus0600.htm

Or Contact:
Dr. Philip Kortum, Conference Co-Chair
SBC Technology Resources
Telephone: 512-372-5711
Fax: 512-372-5791
Email: hfweb@tri.sbc.com

Dr. Ed Kunzinger, Conference Co-Chair
IBM
Telephone: 512-838-2813
Best student paper continued from page 5...

In summary, the results of the current study were mixed with respect to the research hypotheses. Consistent with what was hypothesized, the APO-Dyad protocol and Individual protocol achieved the same level of task performance. Furthermore, both the APO-Dyad and Individual protocol achieved a significantly higher level of task performance than the OO-Dyad protocol. Further investigation is needed to understand why differences were not detected between the APO and APR-Dyad. One avenue to explore is to instruct trainees on task-specific components to observe. Trainees may benefit from acquiring more specific information through guided observation.

The present results have several important implications for future research and application. Previous research using an Active-Interlocked Modeling dyad (AIM-dyad protocol) consistently achieves training efficiency over an Individual training condition (Sheblske et al., 1992; Arthur et al., 1995; Arthur et al., 1996), however the AIM protocol requires the workload to be divided and shared. The present results have potential beneficial implications for tasks in which the components cannot be easily divided since the APO-Dyad was able to alternate performing and observing a task with a partner, as opposed to sharing controls simultaneously, as with the AIM-dyad. It should also be noted that observation alone is beneficial, yet not a sufficient explanation to account for the increase in efficiency for the APO-Dyad and APR-Dyad protocol, as was revealed by the lack of difference between the APO-Dyad and APR-Dyad.

Congratulations, Leigh!