RESEARCH ON PERFORMANCE IMPROVEMENT: WHERE'S THE BEEF?

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IN THE MID-1980s, a television commercial for a popular hamburger chain included the phrase, "Where's the beef?" to establish a competitive edge between it and another company fictitiously labeled "home of the big bun." For over two decades, the phrase has been part of popular culture to question the substance of a product or idea.

Can the field of human performance technology (HPT) be called the "home of the big bun" when the research-based literature is examined for empirical support for our models, theories, and processes? This article discusses the current state of research in HPT and provides some suggestions for future empirical work to add more beef to the literature.

SOUNDING THE ALARM: CALLS FOR MORE RESEARCH

Over a decade ago, Stolovitch and Keeps (1999) asserted that HPT achieves desired results through approaches that have been validated by research. Furthermore, Foshay, Moller, Schwen, Kalman, and Haney (1999) declared that research can help synthesize trends and discover new models, processes, and technologies for improving performance.

At the same time, Kaufman and Clark (1999) stressed that HPT was in danger of becoming a craft because many professionals identified solutions without collecting empirically based data. Brethower (2000) thought that research on HPT must be better integrated into practice if findings added more value. In addition, Stolovitch (2000) and Sugrue and Stolovitch (2000) asserted that the empirical foundations of HPT did not keep pace with actual practice and called for increased research activity in the field.

These concerns were validated by an analysis of 789 articles published over a 3-year period in *Performance Improvement* journal, *Performance Improvement Quarterly (PIQ)*, *Training and Development Magazine*, and *Technical Training Magazine*. According to this analysis, only 7% of all articles published in these four journals from 1997 to 1999 included empirically based research data (Werner & Klein, 2000). Not surprisingly, most of the empirical studies were published in *PIQ*, the scholarly journal of ISPI.

THE CURRENT STATE OF RESEARCH ON PERFORMANCE IMPROVEMENT

Has this situation improved? Have scholars in the HPT field paid attention to appeals to provide more empirical findings? A few content analyses of the literature conducted this decade suggest that calls to provide additional data-based evidence are being ignored by some in the field. For example, Klein (2002) discovered that only 36% of all articles published in *PIQ* from 1997 to 2000 included empirical data to draw conclusions. A replication of Klein's study conducted by Marker, Huglin, and Johnsen (2006) revealed that the number of data-based articles published in *PIQ* from 2001 to 2005 increased to 54%. Another replication of Klein's study by Conn and Gitonga (2004) indicated that approximately 20% of the articles published in *Educational Technology Research and Development* (*ETR&D*), the scholarly journal of the Association for Educational Communications and Technology, from 1999 to 2003 dealt with topics related to workplace learning and performance. However, only five of these *ETR&D* articles reported any research data. Taken together, these findings are inadequate to address the problem outlined by Clark and Estes (2002), "The harsh reality is that a significant number of very popular performance products and remedies simply do not work. . . . It doesn't have to be that way . . . [if] you adopt the results of solid performance research" (p. xi).

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Obviously there are published research studies in the HPT literature. Klein (2002) reported that the empirical work found in *PIQ* centered on professional practices, strategies for training and instruction, transfer of training, and workplace diversity. He also indicated that approximately half of the studies in *PIQ* looked at the implementation of a performance improvement intervention, and all of these articles except one examined an instructional solution. In their replication study, Marker et al. (2006) reported that 22% of empirical research in *PIQ* from 2001 to 2005 examined an intervention, with seven of these centering on noninstructional solutions. Furthermore, Conn and Gitonga's (2004) replication study showed that only one article on workplace learning published in *ETR&D* from 1999 to 2003 focused on a noninstructional intervention. These findings may contradict the notion that many in the HPT field view instructional interventions training as a last resort, to be used only when no other means of achieving improved performance will work.

According to Foshay et al. (1999), "Research is possible in HPT, but it is likely to employ a variety of alternative paradigms" (p. 895). Dean (1995) further suggested that HPT professionals use both quantitative and qualitative data, use observation to collect facts, and rely on direct, comparative, and economic measures. Studies of the research-based HPT literature confirm some of these views. Both Klein (2002) and Marker et al. (2006) reported that HPT researchers use surveys, case studies, experiments, evaluation techniques, and naturalistic methods to answer their questions. In addition, HPT researchers often use questionnaires to measure participant reaction and performance assessments to evaluate learning outcomes. Application, transfer, and on-the-job performance are considered in some studies, but they are seldom measured through direct observation (Klein, 2002). Finally, few studies in the research-based HPT literature examine financial outcomes using measures of cost-benefit or return on investment (Guerra, 2001; Klein, 2002; Marker et al., 2006).

RECOMMENDATIONS FOR FUTURE RESEARCH ON PERFORMANCE IMPROVEMENT

These findings suggest areas for future research on performance improvement. First, more research studies should center on noninstructional interventions that are valued most by HPT practitioners. According to Klein and Fox (2004) and Nguyen and Zachmeier (2009) these techniques include coaching, communication strategies, electronic performance support systems, feedback and information, knowledge management, process improvement, rewards and recognition, and strategic planning.

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Additional research should also be conducted to examine the variables that have an impact on intervention design and use. A small but growing number of studies in the HPT literature suggest that factors such as national culture, organizational size, budget, and practitioner expertise may determine which interventions are selected, planned, and implemented (Vadivelu & Klein, 2008; Van Tiem, 2004). Future research in this area may be particularly fruitful as performance improvement becomes more global.

Future research on interventions should include more direct measures of on-the-job performance. Foshay et al. (1999) indicate that the effect of a performance intervention should be judged by cumulative changes in individual behavior. However, examinations of the research-based literature discussed show that researchers rely mostly on self-report to measure transfer. While observation is costly, the increased use of direct measures would help inform practitioners about the actual benefits of a particular intervention. In addition, future research should examine the impact of instructional and noninstructional interventions on organizations and society. Very few studies currently include data on cost benefit or return on investment.

Finally, future studies should seek to validate HPT models and the components of performance analysis, cause analysis, intervention selection, design and development, implementation and change management, and evaluation. Like models of instructional design, many of the models and processes of performance improvement are based on practitioner experience and hearsay rather

than rigorous empirical study (Richey & Klein, 2007). HPT models should be validated using a variety of research methods to assist our field in answering the question, "Where's the beef?"

References

Brethower, D. (2000). Integrating theory, research and practice in human performance technology. *Performance Improvement*, *39*(4), 33–43. [DOI: 10.1002/pfi.4140390410.]

Clark, R., & Estes, F. (2002). *Turning research into results: A guide to selecting the right performance solutions*. Atlanta, GA: Center for Effective Performance.

Conn, C.A., & Gitonga, J. (2004). The status of training and performance research in the AECT journals. *TechTrends*, *48*(2), 16–21.

Dean, P. (1995). Examining the practice of human performance technology. *Performance Improvement Quarterly*, *8*(2), 68–94.

Foshay, W., Moller, L., Schwen, T., Kalman, H., & Haney, D. (1999). Research in human performance technology. In H. Stolovitch & E. Keeps (Eds.), *Handbook of human performance technology* (2nd ed., pp. 895–914). San Francisco: Jossey-Bass.

Guerra, I. (2001). Performance improvement based on results: Is our field adding value? *Performance Improvement Quarterly*, *40*(1), 6–10.

Kaufman, R., & Clark, R. (1999). Reestablishing performance improvement as a legitimate area of inquiry, activity, and contribution: Rules of the road. *Performance Improvement*, *38*(9), 13–18. [DOI: 10.1002/pfi.4140380905.]

Klein, J.D. (2002). Empirical research on performance improvement. *Performance Improvement Quarterly*, *15*(1), 99–110.

Klein, J.D., & Fox, E.J. (2004). Performance improvement competencies for instructional technologist. *TechTrends*, *48*(2), 22–25.

Marker, A., Huglin, L., & Johnsen, L. (2006). Empirical research on performance improvement: An update. *Performance Improvement Quarterly*, *19*(4), 7–22.

Nguyen, F., & Zachmeier, A. (2009). *Defining a performance support system for evidence-based practices*. Manuscript submitted for publication.

Richey, R.C., & Klein, J.D. (2007). *Design and development research: Methods, strategies and issues*. Mahwah, NJ: Erlbaum.

Stolovitch, H. (2000). Human performance technology: Research and theory to practice. *Performance Improvement*, *39*(4), 7–16. [DOI: 10.1002/pfi.4140390407.]

Stolovitch, H.D., & Keeps, E.J. (1999). What is human performance technology? In H. Stolovitch & E. Keeps (Eds.), *Handbook of human performance technology* (2nd ed., pp. 3–23). San Francisco: Jossey-Bass.

Sugrue, B., & Stolovitch, H. (2000). Appropriate inquiry in performance technology. *Performance Improvement*, *39*(1), 33–36. [DOI: 10.1002/pfi.4140390112.]

Vadivelu, R., & Klein, J.D. (2008). A cross-cultural analysis of HPT. *Performance Improvement Quarterly*, *20*(3/4), 147–165.

Van Tiem, D.M. (2004). Intervention usage and expertise in performance technology practice: An empirical investigation. *Performance Improvement Quarterly*, *17*(3), 23–45.

Werner, J.L., & Klein, J.D. (2000, October). *Performance data in professional publications: Signs of traffic on the road less-traveled*. Paper presented at the annual meeting of the Association for Educational Communications and Technology, Denver, CO.

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