Performance Improvement Competencies for Instructional Technologists

By James D. Klein and Eric J. Fox

"Graduates from IDT programs should have knowledge and skills related to the performance improvement process."

The field of instructional design and technology (IDT) evolved during the 1990s to include theories and practices of performance improvement. Some authors have indicated that the goal of our field has shifted from facilitating learning to improving performance; and contemporary definitions of IDT incorporate human performance technology concepts (Reiser, 2002). Furthermore, there is strong empirical support for including these concepts in the curricula of our graduate programs (Fox & Klein, 2002).

Human performance technology (HPT) includes principles from fields such as behavioral psychology, instructional systems design, organizational development and human resources management (Rosenberg, Coscarelli, & Hutchison, 1999).

HPT is the systematic combination of several processes — performance analysis, cause analysis, intervention selection and design, intervention implementation and change and evaluation (International Society for Performance Improvement, 2002; Van Tiem, Moseley, & Dessinger, 2000). The HPT approach includes a variety of instructional and non-instructional interventions to address a performance problem or realize an opportunity (Hutchison & Stein, 1998). Instructional technology is one of many interventions to improve performance.

Several IDT programs now offer courses, special concentrations or certificates in HPT. A recent review of the degree requirements and course offerings at 11 well-established graduate IDT programs revealed that eight offer one course focused on HPT and three offer more than one HPT course (Fox & Klein, 2002). Some programs have revised their core instructional design course to include an HPT orientation (Dick & Wager, 1998). Furthermore, a survey administered to faculty members in a variety of academic programs such as adult learning, business, communications, human resource development, instructional design and management showed that many of these programs address HPT in their curriculum (Medsker, Hunter, Stepich, Rowland, & Basnet, 1995). While most HPT courses in IDT programs are offered as an elective (Fox & Klein, 2002), it is clear that faculty think it is important for their students to acquire competency in the area of performance improvement.

The International Board of Standards for Training, Performance, & Instruction (www.ibstpi.org) has identified and empirically validated competencies for instructional designers (Richey, Fields, & Foxon, 2001). Others have identified the skills and characteristics for performance technologists (Stolovitch, Keeps, & Rodrigue, 1999). However, very little empirical work has been conducted to determine the performance improvement competencies for graduates of IDT programs. According to Dick and Wager (1998), IDT programs may be struggling with the extent to which they should focus on HPT given the field's traditional focus on instruction and training solutions.

The purpose of this article is to report the results of a survey conducted to determine performance improvement competencies for graduates of IDT programs. A sample of faculty and practitioners used a web-based survey to rate the importance of HPT skills and knowledge for IDT graduates. Results of the survey can provide guidance to programs seeking to prepare their students for today's workplace and may shed light on which HPT processes and interventions should be emphasized in the curriculum.

Method

Participants

Faculty: Twenty-four faculty members from graduate programs in educational technology, instructional design and technology, and instructional systems participated in this study. Faculty from ten universities throughout the United States were represented in the sample — Arizona State University, Florida State University, Indiana University, Pennsylvania State University, San Diego State University, Syracuse University, University of Georgia, University of Northern Colorado, Utah State University and Wayne State University. Demographic information indicated that 13 faculty participants were male and 10 were female (one did not respond to a question about gender). Most faculty (83%) had more than 10 years of experience in the IDT field and the majority (92%) rated their knowledge of IDT as advanced. About half (42%) of the faculty participants had more than 10 years of experience in HPT and the other half (42%) reported having 5 or fewer years of experience. Most rated their knowledge of HPT as either intermediate (50%) or advanced (46%).

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Practitioners: Forty-five members of the central Arizona chapters of the International Society for Performance Improvement (ISPI) and the American Society for Training and Development (ASTD) also participated in this study. Demographic information indicated that 29 practitioners were female and 16 were male. They rated their knowledge of IDT to be intermediate (31%) or advanced (51%), and their knowledge of HPT also to be intermediate (38%) or advanced (44%). With regard to years of experience in IDT, 11% reported having no experience, 22% reported 5 or fewer years, 18% reported 6-10 years, 22% reported 11-15 years, 16% reported 16-20 years and 11% reported 20 or more years. For years of experience in HPT, 11% reported having no experience, 31% reported 5 or fewer years, 20% reported 6-10 years, 18% reported 11-15 years, 11% reported 16-20 years, and 9% reported 20 or more years.

Survey Instrument

Participants were contacted via email and asked to complete a web-based survey that included 44 Likert-type items and one open-ended question. Each Likert-type item consisted of a competency statement such as — distinguish between performance problems requiring instructional solutions and those requiring non-instructional solutions. Using a four-point scale (1 = not important, 4 = very important), respondents rated the importance of each competency for graduates of instructional design and technology (IDT) programs. We used the term IDT because it is broader than instructional technology and educational technology (Reiser, 2002). The open-ended question asked participants to provide any additional HPT competencies not addressed on the survey.

Twelve competencies listed on the survey related to the major phases of the generic HPT model (performance analysis, cause analysis, intervention selection

and design, intervention implementation and change and evaluation) and were based primarily on a document analysis of the major topics and themes in the *Handbook of Human Performance Technology* (Stolovitch & Keeps, 1999). Thirty-two competencies related to performance interventions. Rather than list dozens and dozens of possible performance interventions on the survey, some of the general intervention categories presented by Hutchison and Stein (1998) were used in constructing the competencies. Two items were written for each intervention category — one related to knowledge and the other to skill. Respondents rated the importance of acquiring knowledge about the intervention category (e.g., describe and be familiar with (not implement) a variety of performance interventions in the area of feedback) and the importance of obtaining skills (e.g., develop and implement a variety of performance interventions in the area of job and workflow).

Results

Table 1 shows the average rating for the 12 survey items related to the phases of the generic HPT model, listed in order of highest to lowest overall mean score. These data reveal that competencies related to skills such as conducting performance and cause analyses and selecting and evaluating performance interventions were rated as more important than acquiring knowledge about HPT models. Only three competencies had average ratings below 3.0 on the 4-point scale — (a) describe the historical and conceptual underpinnings of human performance technology, (b) describe a variety of specific performance technology models and (c) identify the similarities and differences among a variety of specific performance technology models. Independent t-tests conducted to detect significant differences between respondent groups revealed that faculty rated knowledge of the historical and conceptual underpinnings of HPT significantly higher than did practitioners (M = 3.13 and M = 2.62, respectively).

Table 2 shows the average ratings for the competencies related to performance improvement interventions. These data indicate that competencies related to knowledge and skill in five intervention categories were rated above 3.0 on the 4-point scale — (a) measurement and evaluation, (b) instructional technology, (c) feedback, (d) organizational design and development and (e) job and workflow design. Furthermore, competencies related to knowledge of four other interventions were rated above 3.0 — (a) communication, (b) quality improvement, (c) information and (d) rewards and recognition.

A paired-sample t-test revealed that as a group, competencies related to knowledge of performance improvement interventions (M = 3.05) were rated as significantly more important than competencies related to skills in developing and implementing the interventions (M = 2.87). Independent t-tests conducted on each intervention category indicated a significant difference between knowledge and skills for seven interventions — (a) communication, (b) rewards and recognition, (c) human development, (d) career development, (e) selection, (f) resource systems and (g) ergonomics. Knowledge was rated significantly more important than obtaining skill for these seven intervention categories.

Competency Statement	Average Rating
Distinguish between performance problems requiring instructional solutions and those requiring non-instructional solutions.	3.90
Conduct a performance analysis for a specific situation to identify how and where performance needs to change (performance gap).	3.81
Evaluate a performance improvement intervention to determine whether or not it solved the performance problem.	3.78
Conduct a cause analysis for a specific situation to identify factors that contribute to the performance gap.	3.74
Select a range of possible performance interventions that would best meet the need(s) revealed by the performance and cause analyses.	3.72
Assess the value of a performance improvement solution in terms of return on investment, attitudes of workers involved, client feedback, etc.	3.67
Define and describe human performance technology.	3.64
Identify and implement procedures and/or systems to support and maintain performance improvement interventions.	3.52
Describe the general model of human performance technology (the systematic combination of performance analysis, cause analysis, and interventions selection).	3.46
Describe the historical and conceptual underpinnings of human performance technology.	2.80
Identify the similarities and differences among a variety of specific performance technology models.	2.72
Describe a variety of specific performance technology models.	2.71

Note. 4 = very important, 3 = important, 2 = somewhat important, 1 = not important

Table 1. Ratings for competencies related to HPT model

Twenty-eight participants responded to the request to provide additional HPT competencies not addressed on the survey. Topic areas listed by several respondents included communication and writing, project management, the systems approach, computer technology and needs assessment. Competencies not specific to HPT, such as interpersonal skills, organizational and diplomatic skills, and cultural sensitivity, were also mentioned.

Intervention Category	Knowledge	Skills
Measurement & Evaluation	3.51	3.49
Instructional Technology	3.42	3.42
Feedback	3.34	3.22
Organizational Design & Development	3.22	3.16
Job & Workflow	3.22	3.10
Communication	3.18	2.94
Quality Improvement	3.14	2.98
Information	3.03	2.94
Rewards & Recognition	3.03	2.75
Documentation & Standards	2.97	2.80
Human Development	2.91	2.71
Management Science	2.80	2.58
Selection	2.80	2.56
Resource Systems	2.80	2.55
Career Development	2.58	2.35
Ergonomics	2.57	2.18

Note. 4 = very important, 3 = important, 2 = somewhat important, 1 = not important

Table 2. Ratings for competencies related to performance improvement interventions.

Discussion

Evidence from this study suggests that graduates from IDT programs should have knowledge and skills related to the performance improvement process. Respondents rated every competency on the survey at least "somewhat important" and more than half of the competencies were rated as "important" or "very important." These results provide additional support for including HPT into the curricula of IDT graduate programs.

The current findings also point to which competencies academics and practitioners think are most important for graduates to obtain. Not surprisingly, application skills such as analyzing performance problems and their causes, selecting performance interventions and evaluating interventions to determine whether they solved the performance problem were rated more important than acquiring knowledge about specific HPT models. However, knowledge of specific performance improvement intervention categories was considered to be more important than competencies related to skills in developing and implementing specific interventions. These findings lend support for the notion that practitioners are not expected to be experts in all categories of performance interventions (Hutchison & Stein, 1998; Van Tiem, Moseley, & Dessinger, 2000). Findings from this study suggest that graduates of IDT programs emphasizing HPT should be familiar with a variety of performance improvement interventions.

Overall, the highest rated intervention category was measurement and evaluation followed by instructional technology. It is interesting to note that when the ratings of these two intervention categories are examined for each respondent group, measurement and evaluation was rated highest by practitioners while instructional technology was rated highest by IDT faculty.

The findings of this study have implications for academic programs focused on IDT. Our field has evolved to include HPT and contemporary definitions of the field incorporate performance improvement concepts (Reiser, 2002). Increasingly, many IDT programs offer courses on HPT (Fox & Klein, 2002) and some programs have revised their core instructional design course to include an HPT orientation (Dick & Wager, 1998). The competencies addressed in the current study can help our field continue to evolve from improving instruction via technology to improving learning and performance.

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