The Future of Instructional Design: Results of a Delphi Study

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A Delphi study was conducted to identify trends that may influence the field of instructional design in the near future. Two sets of "experts" were chosen to participate—academic professors who teach courses in instructional design, and corporate practitioners who use instructional design skills in their work. Results were tabulated to identify emerging trends that members of both the academic and corporate groups believe will influence the field of instructional design in the near future and items that were rated statistically different depending upon the group of experts. Conclusions from the study are compared to ideas of noted futurists in their interpretation of our changing society. Discussions also focus on factors that may be contributing to the differences in perceptions between the corporate and academic leaders. It is hoped that this information will help both academic and corporate instructional designers better anticipate, and become more proactive with respect to, changes that may be influencing the fields of education and training.

Introduction

Instructional Design Today
In recent years the field of instructional design has continued to evolve, assimilating and advancing theories from the fields of teaching, learning, and communication technologies. Recent additions in this evolution have included ideas from system dynamics, chaos theory, constructivism, situated learning, performance technologies, and distance delivery. With each iteration, we enhance our understanding of how to impact the performance of individuals and organizations.

Today, researchers estimate that U.S. organizations with 100 or more employees are budgeting at least $59 billion for training (Training, 1997). This training is generally imposed because either the learners did not acquire essential skills or knowledge during their previous education; the learners accepted new positions which required a new set of knowledge or skills; the job itself changed due to advances in technology or society; or mandates were imposed requiring employees to undergo periodic training.

No matter which factor initiates the requirement for training, and regardless of the company for whom the employee works, all companies have a common concern with respect to the training process—how effectively and efficiently will employees acquire the necessary knowledge and skills so that they may reengage their career with new capabilities? How well we structure solutions to these concerns is one of the top priorities in the field of instructional design.

Trying to look forward to anticipate future changes to this field is problematic. How strongly will economics and societal changes influence funding for instructional interventions? Will advances in our understanding of neural networks be assimilated into the creation of job aids? Will intelligent tutoring systems replace stand-up instructional delivery? Will performance technology fulfill its promise? Will corporations and academic institutions follow the same paths in the creation of instructional designers? Knowing the answers to these and other questions would allow us to better anticipate the needs and directions within this field, and help us better prepare for the future. But how do we find out where the field is heading? Some people think the best place to begin is by asking the experts. Unfortunately, experts seldom completely agree.

Looking to the Future
To anticipate future trends, Holden and Wedman (1993) suggest several common forecasting techniques, including brainstorming, cross-impact analysis, the Delphi technique, relevance test, scenario forecasting, technology assessment, and trend analysis. We chose to use the Delphi technique as our means of looking at the future of instructional design because of its ability to guide the diverse opinions of a group of experts towards consensus.

Dalkey and Helmer (1962–1963) developed the Delphi technique in the early 1950s while working for the Rand Corporation. They applied their approach to enable group decision-making without face-to-face interaction. This forecasting method has now spread to areas as diverse as computer-mediated communication (Holden & Mitchell, 1993), classroom inclusion of...
students with disabilities (Putnam, Spiegel, & Bruininks, 1995), and recreational boating safety priorities (Race & Planek, 1992). Despite the diverse methods of carrying out and analyzing data from a Delphi study, a common thread is that the “Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (Linstead & Turoff, 1975, p. 3).

The heart of the Delphi technique is the truism that “(t)he group as a whole encompasses at least as much (and usually more) information as any single member” (Dalkey, 1972, p. 4). Key to the communication process of the Delphi is the feedback that individual experts use as they refine their judgments concerning complex problems. Jonassen, Hannum, and Tessmer (1989) point this out by describing Delphi as: “...an anonymous, independent, non-competitive survey of experts to obtain consensus without necessarily involving group meetings. The technique essentially entails a series of surveys using the same experts, each survey dependent upon the responses of the previous one” (p. 397).

The anonymous, independent, non-competitive nature of Delphi addresses three problems often encountered when pooling diverse opinions of experts:

- Dominant individuals can strongly influence a group.
- Individual and group interests may contribute to fruitless discussion.
- Group pressure may distort individual judgment.

To work out the “more heads are better than one” truism, the Delphi technique makes three major assumptions. First, the concept of expert is definable. Second, the opinion of the group is more accurate than the musings of an individual. Third, the statistical methods applied to the data result in a meaningful group consensus. These assumptions also reveal limitations in using Delphi as a purely scientific model for predicting the future. The Delphi technique is highly “vulnerable on its concept of ‘expert’ with unaccountable sampling, in the selection of panelists, experts or otherwise” (Sackman, 1975, p. 3). A second potential flaw exists in the idea of the superiority of the group over the individual, as there are many examples of the “voice in the wilderness” accurately prophesying the future, while the consensus of the recognized experts pointed in another direction. While we recognize the limitations of the Delphi method as a scientific model for predicting the future, we instead propose using the model as an educational tool—a starting point in the discussion of the future direction of instructional design.

The Problem

The field of instructional design continues to evolve. This change is due, in part, to speed and storage increases occurring in computer technologies; an evolving infrastructure allowing for easier delivery of instruction through distance delivery; new epistemologies requiring a rethinking of the teaching and learning process; economic concerns demanding more effective and efficient performance; societal concerns mandating that materials reflect diverse cultures and peoples; and an increased understanding of a self-correcting systems operation.

With this multitude of variables influencing the field, many instructional designers find themselves reacting to a seemingly unending stream of change. In this reactive mode, instructional designers may lose sight of potential directions to which the field may be evolving, thereby spending time focused on techniques or methodologies that will soon be obsolete. A better understanding of the changes which will be influencing the field in the near future, and how these changes will directly impact the role of instructional designers, could provide insights to help professionals become more agile in reacting to these changes. But this strategy is constrained by at least two variables. First, no one can anticipate the future with any certainty. Second, if academic and corporate professionals differ in how they anticipate the field of instructional design evolving, skills taught in educational institutions may not be totally viable in the corporate sector. With these limitations in mind, this study attempts to identify trends in the field of instructional design to allow professionals to better anticipate changes that will be influencing the fields of education and training. Additionally, because this study involves both academic and corporate leaders, convergences and divergences of ideas between these two arenas may be identified, thereby better aligning the knowledge and direction of these entities.

Methodology

Population and Sample

In our initial analysis, we hoped that our results would be of interest to at least three groups of professionals; corporate trainers, educational designers, and academic professors who design and deliver courses in instructional design. The accessible population we chose to approach was professionals from these groups whose work in the field has been published or presented at national conferences in recent years.

The sample chosen to represent the population was not randomly selected. Our use of the Delphi Study technique required that we select “experts” from the accessible population who, it was hoped, would have insights into the future of the field of instructional design that may not be known to the “average” practitioner or instructor. Unfortunately, there is no standardized rating of expert in this field, and in fact,
not even a certification process to differentiate those who have experience and knowledge from those who are just entering the field. Therefore we developed our own methodology using three sampling techniques to select our sample.

To identify who would be included from the corporate environment, we solicited the names of presenters from the Training '96 Conference and Expo sponsored by Training Magazine. From the list of 144 presenters, we randomly selected 35 to represent the training environment.

The main body of participants selected to represent the academic arena were obtained from the early list of collaborative, first authors of the then upcoming book Handbook of Research for Educational Communications and Technology (Jonassen, 1996).

To round out our sample, we included an additional selection of professionals who represented leadership in professional associations, corporations, and academic programs from the fields of teaching, instructional design, cognitive psychology, future studies, and system dynamics. In all, our initial sample included a total of 86 professionals.

**Instrument and Treatment**

The instrument unfolded in two phases. Phase 1 consisted of an introductory letter and a request for participants to assist in generating an answer to the following statement:

> For the past 30 years the effective creation of instructional materials has been enhanced through the use of: (a) a systems approach to instructional design, (b) an understanding of how people learn, and (c) the integration of technological advances. As we expand our knowledge in these areas, traditional instructional design processes are being challenged and altered.

In light of this evolution, please aid us in identifying changes you anticipate influencing instructional design over the next ten years, including those changes which seem to be trivial or of minor importance. Include changes you believe other designers of instruction might find important. Please include in your answer a brief description of how these changes will effect the design of instruction.

Submitted statements were compiled, analyzed to identify discrete items, critiqued for coherence and duplication, and categorized by major theme. An initial list of 198 discrete statements was reduced to 116 when we eliminated redundancy. As we analyzed the remaining statements, we identified 11 themes with which we grouped the statements for ease of use. The 11 themes included:

- Tools for designing and developing instructional materials
- Technology uses
- Media and types of delivery
- Learner characteristics
- Training environments
- The roles of designers
- Systems approaches and design strategies
- Performance support
- Assessment
- Learning models
- Corporate culture

In Phase 2 of the study, we sent the compiled data to the respondents of Phase 1, and we asked each person to rate each of the 116 statements as to how strongly they anticipated the stated change influencing the design of instructional materials during the next ten years. This rating was conducted using a Likert-type scale. We used Endpoint 1 to indicate the item would have no influence on the field, and Endpoint 5 to indicate an item that would strongly influence the field of instructional design.

**The Results**

**Descriptive Statistics**

**Demographics.** Twenty-five professionals took part in Phase 1 of the study, and 18 took part in Phase 2 (nine academic leaders and nine corporate practitioners). The academic group consisted of seven full professors, one lecturer, and one research associate. The corporate sector included presidents, consultants, a senior manager of educational services, an executive vice president, a supervisor of employee development, an industrial psychologist, and a company chairman. The participants averaged over 21 years of experience in their respective fields.

**Aggregate data.** In Phase 2, we calculated the mean score on all items to be 3.37, with a standard deviation of 1.06. In general terms this indicates that the average score on the 116 items leaned a little toward the "will make a difference" side of the scale, and that on average approximately two-thirds of the respondents were within one point of the mean. When the two groups of academics and corporate leaders were compared, we found that the professors were not only somewhat less enthusiastic about the changes which may have a significant influence (mean scores of 3.0 versus 3.7), but they also were more varied in their responses as shown by the increase in standard deviation (1.08 versus 0.88) (see Table 1).

Our analysis of the results found that participants rated 19 of the 116 items with mean scores of 4.0 or higher. We interpret this finding as indicating that these items are believed to hold the most significant influence over the next ten years.

**Inferential Statistics**

We also compared the items rated by the corporate participants with those rated by the academic
### Table 1. Means and standard deviation for groups.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Item Mean Score</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>3.03</td>
<td>1.08</td>
</tr>
<tr>
<td>Corporate</td>
<td>3.71</td>
<td>0.88</td>
</tr>
<tr>
<td>Total</td>
<td>3.37</td>
<td>1.06</td>
</tr>
</tbody>
</table>

participants. An analysis by t test of non-independent items yielded a statistically significant difference on 11 of the 116 items between the two groups at or below an alpha level of .01. In all cases, corporate employees rated the items to be more important than their academic counterparts.

Although inferential statistics are normally used to infer from a sample to a population, we fear to do this because we selected a non-random sample of experts. We instead present our interpretations of the results in the following section more as points of discussion than as generalizations regarding a larger population.

### Discussion

**Trends Affecting Instructional Design**

During our analysis of the 19 items which received mean scores of 4.0 or higher, six trends influencing the area of instructional design emerged. In general, these trends reflect changes occurring as a result of technological advances, societal changes, and the pressures brought about by the rapid pace with which ideas in the business environment move from conception to fruition. Many of these trends parallel predictions made by futurists writing in the areas of business, society, and technology. The six trends listed below have not been placed in any specific order.

**Trend 1: Greater recognition and inclusion of diverse cultural perspectives.** Of the 19 highest rated items by all participants, two described how instructional designers must become more aware and sensitized to an increasingly diverse and global clientele. Recognition and inclusion of diverse perspectives is justified for corporations not only with employees who travel to distant locations, but also to those with workers or clients at home in our multicultural society.

This need for diverse cultural perspectives coincides with the shift firms are experiencing in international sales, where many multinational corporations now achieve greater profitability than in home markets (Peterson, Napier, & Shim, 1996). To capitalize on this global marketplace, many businesses are beginning to train their workers and executives in the “ins-and-outs” of the behaviors and customs of diverse people and cultures. This training component is predicted to grow more prominent in corporations as executives will be “shocked to discover how much the many variables of foreign behavior and custom complicate their efforts” (Minkin, 1995, p. 104).

Not only will globalization necessitate that training materials be created on behaviors and customs of other cultures, but it will also prompt instructional designers to consider what influences different cultural perspectives may have on an employee’s perception of corporate material. By being aware and including perspectives of different cultures, training materials can increase acceptance, improve motivation, and avoid misunderstandings by trainees.

**Trend 2: Development of rapid, adaptive, instructional design and evaluation systems.** Trend 2 emerged from high scores by both groups of experts on items which pointed to the importance of rapid prototyping, and the idea that instructional design will give way to more “on-the-fly” processes. These concerns may be originating from the idea that “time is money.” Limited time and resources demand quick resolution with lean and simple approaches to a training requirement. Alvin Toffler’s (1990) book *Powershift: Knowledge, Wealth, and Violence at the Edge of the 21st Century*, cites new slogans of business as a testament to the need for speed; “speed to market,” “quick response,” “fast cycle time,” and “just in time delivery.” Toffler even suggests that the speed of decision is so critical that some executives keep an accounting of a “DIP” inventory—their “decisions in progress.”

How will designers react to this need for speed? Possibly by incorporating more fluid, non-linear instructional design processes that rely on frequent evaluations and alterations rather than by following a rigid design process.

Just as in manufacturing, where new production methods no longer follow a linear system that separates the design of a product from its means of manufacturing, so will instructional design move away from a sequential, waterfall model. Linear models, where the output of one phase serves as the input to the next, will be replaced by a model that not only allows designers to simultaneously address various components of the design process, but also acknowledge the dynamic relationship between various components. In this view, instructional design is seen as a complex, adaptive system where one component in the design process influences all other components, not simply a sequential element.

Toffler’s (1990) book describes how accelerated pressures will demand the abandonment of older,
sequential systems in favor of systems that compute tasks concurrently. Simultaneous engineering is the current phrase that describes how manufacturing addresses this requirement. Cennamo's (1995) "Layers of Negotiation" model is one example of how instructional designers have begun to respond with similar models.

**Trend 3: Growth of on-line, on-demand, access to information, performance support, and training.** The ability to train workers at their work site, rather than sending them to a classroom, influences the bottom line by reducing the cost of the lost time spent in travel and adaptation to a new location or system, and by providing information and instruction when and where it is needed. Three of the top 19 items rated by the experts pointed to the integration of training, support for learning, and electronic performance support into a worker's on-going daily activities. Computers will continue to move beyond CBT by providing access to data bases and expert opinions. These computer-based environments will help workers with minimal skills operate more like their highly skilled counterparts. These results were echoed by the survey of over 750 companies conducted by Training magazine (1997), which reported that the percentage of organizations developing electronic performance support systems grew from 5 percent in 1996 to 12 percent in 1997.

Barry Minkin (1995) also predicts the growing use of technologies in the work place when he states:

> Tomorrow's workers will be computer literate and have a vast array of automated tools at their disposal. The tool box of the future will be crammed with information technology...workers will do more of their jobs through 'assistants,' expert systems, and computers. Jobs will be redesigned to take advantage of those powerful tools (p. 163).

**Trend 4: The emergence of content rich and methodologically robust distance training and information networks.** Four of the top 19 items pointed to the increased use of networks to provide easy access to training and information at a distance.

Pushing the development of distance learning environments will be the continually expanding numbers of telecommuting employees. Minkin (1995) predicts the emergence of software that will make the simultaneous sharing of information between distant computer screens occur more seamlessly.

The panelists also predicted greater use of distant, shared, synthetic environments, such as virtual realities and distributed simulations, which will be able to provide new learning opportunities. Acting alone or in conjunction with other trainees, these synthetic training environments will situate participants in settings that require that they manipulate a complex environment of multiple variables to construct viable solution sets to problems.

**Trend 5: Instructional materials customized to the user.** Customizing training solutions for individual users is a worthy goal, but today, cost usually prohibits this level of intervention. In the future, however, our experts believe that adaptive intelligent systems, coupled with the ability to store and access electronic resources and plug-in components, will make highly customized training a more distinct possibility. Increased customization would not only provide content relevant to the needs and experiences of the individual user, but could also allow materials to be more attuned to the motivational needs of the learner. As learners interact with the content, an intelligent, adaptive training component could query the learner, then pass information through an appropriate plug-in to help situate the content in a context the user recognizes as relevant and motivating.

The customization of materials for a user parallels the demassification trend in manufacturing (Toffler, 1990), in which products are being tailored to smaller and smaller groups of individuals. Toffler claims that eventually "...the new information technologies (will) push the cost of diversity toward zero" (p. 84). As this trend continues to evolve, some day soon we may have training customized to an individual learner at about the same cost as a traditional "mass produced" training program.

**Trend 6: Increased personal responsibilities of instructional designers.** Two additional highly rated items by our experts stressed the need for designers to upgrade their skills to both remain in legal compliance and to maintain their marketability. Knowledge of copyright law and intellectual property was identified as a top concern, possibly due to the increasingly murky area of access to the World Wide Web, transmittal of instructional materials via distance delivery, and the increasing ease of using digital means to cut-and-paste text, audio, and video material.

Personal responsibility also extends to upgrading one’s skills to be marketable as firms continue to use out-sourcing, and instructional designers increasingly enter the arena of self-employment. In 1995 over 26 million Americans worked at home either regularly or occasionally (Minkin, 1995), and these numbers are expected to increase. Furthermore, Minkin predicts that downsizing to cut costs will continue, and smaller enterprises will need to compete more effectively for funding.

**Differences of Opinion**

In addition to the 19 items rated highly by the panelists, our analysis also identified 11 items that were rated differently to a large degree by the two groups. One possibility for this difference could be the perspectives of the groups as to the role of instructional design in their field. The corporate environment tends to place a high value on efficiency, effectiveness, and
return-on-investment (ROI). Do these values clash with the values of academia? Do the pursuits of academics, with the added emphasis on exploring new, untested, and possibly unproductive ideas, result in less concern for efficiency, effectiveness, and ROI? More importantly, does this emphasis result in developing graduates who find themselves inculcated with skills and values that leave them less prepared to operate in a corporate culture that makes decisions as a function of the "bottom-line"? Analysis of the 11 items that were rated differently between the corporate and academic respondents reveals five overall generalizations that may help answer these questions. These generalizations affirm the differences between the cultures of the corporate versus the academic world. How important these differences are remains to be seen.

**Difference 1: Corporate emphasis on the cost-effectiveness of training.** Most of the 11 items found to be statistically different between the two groups can be viewed as manifestations of the general difference between academic and corporate goals. Clint Wallington (1981) attributes this difference to the "fact that the business of educational institutions is training while in business (and) industry training is an adjunct to its main business" (p. 3). The corporate environment looks at training as a means of addressing a specific need; training is "job-specific" as opposed to academia's offering of general preparation. Business can take this approach because it has the opportunity to provide training throughout the career of an employee, whereas academic preparation is a once-around experience. An obvious tension exists between the "as needed" attitude of business and the "once around" experience of academia. This tension may be due to the view in academia that a student's time is "free," while in business, the student's time is a direct expense to the company (Wallington, 1981). In business, ROI is both the indicator and the measure of the effective training. Two of these 11 items directly related to this general difference between academia and business.

One of the two items rated significantly higher by the corporate panel addressed a shift from emphasizing "learning strategies" to "business results." Without the limitations of time and money, corporate instructional designers may know of better ways to address an instructional or performance requirement, but the demands of demonstrated ROI force design decisions that place greater emphasis on the efficient use of resources. The second item also highlighted the concern for ROI by identifying that design decisions must demonstrate cost-effectiveness prior to training.

The other nine items found to be statistically different between the two groups point out specific ways that businesses hope to address the general concerns for efficiency and effectiveness. These items have been grouped where commonalities were found, but all of these groupings can be seen as specific manifestations of business's attention to the bottom line.

**Difference 2: Streamlining the instructional design process via emerging technologies.** In the quest to increase ROI, businesses often look for ways to streamline the way work is done. The fourth greatest difference between the groups was found in an item that suggested that content experts be given more control of the instructional design process through increased access to automated instructional design systems, distributed data bases, and expert systems. Minkin (1993) describes the future uses of 'knowbots' which will allow the ability to search through "ever increasing networks of data bases for information desired for projects or for an individual task" (p. 163). Together, these systems could potentially allow content experts to assume some of the traditional roles of instructional designers, thereby reducing the time to completion for instructional products and decreasing costs.

**Difference 3: The use of adaptive systems to improve instruction.** Three of the 11 items which were rated statistically differently between the groups again point to the concern for efficiency and effectiveness. One item rated highly by corporate experts was for technologies to help provide instruction that adapts to the needs of the learner by rapid feedback, interactivity, and self-pacing. A second item pointed to a desire for improved efficiency by striving for concurrent development of products and instruction, allowing instructional designers to update content on-the-fly. Both of these items emphasize adapting to the varying needs of learners and environments; therefore, as suggested by the third item, instructional materials should be provided in a multitude of formats and media. When it is time for the roll-out of a new product, the corresponding training must be ready for all users.

**Difference 4: A greater requirement for standardization to improve the bottom line.** The item that showed the highest difference between the two groups was the concern corporate leaders have that all courseware have the ability to interface with all other courseware regardless of computer platform. Standardization means familiarity, which translates into ease of use for the learner. As products are standardized and modularized in terms of structure and interface, users may be better able to mix and match components to tailor coherent and relevant units of instruction or support for themselves or the needs of their organization.

Another item that rated statistically different was the necessity for standardization of technology to allow instructional design practices to incorporate and rely more heavily on technology for all aspects of the design, development, and delivery of materials.
Standardization of the training materials and technologies upon which they are based should improve the efficiency and effectiveness of both, thereby decreasing the bottom line cost of instructional design.

**Difference 5: The corporate world's emphasis on performance.** It is not what you know that counts, but what you can do. To emphasize the shift from learning to the result oriented idea of performance, one of the 11 items found to be statistically different suggested that instructional designers will become better known as performance technologists. Another item found to be statistically different stated that computers will not simply be training tools, but will instead be looked upon as performance support systems. These terms are not just an innocent shift in emphasis—they acknowledge that training and support materials should be judged on their ability to improve employee performance.

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**Conclusions and Future Possibilities**

Although the results from this study provide a forum for discussion, it is important to realize that the implications are limited. A Delphi study, by definition, uses a small sample size because only “experts” are solicited. Therefore, the ability to generalize from the sample to a large population is limited. Second, due to the length of the instrument and the short timeline provided during its implementation, the response rate was lower than initially expected. Approximately 29% of those solicited completed the first phase of the study, and 72% of first-round respondents completed Phase 2. Also contributing to the low response rate was the demands on the expert’s time. The attrition rate may have skewed our results. Third, any societal or technological changes that may have taken place during the interval between our data collection in 1996 and the submittal for publication of this article may have skewed the validity of our results. The intended use of this study as a point of discussion, as well as the focus of the data collection on a relatively long-term outlook, should minimize the seriousness of this limitation.

A further limitation of our conclusions may have occurred due to our instrument and analysis technique. During Phase 1, results were submitted in list form and narrative statements. The research team then had the task of analyzing the statements to identify individual thought items, categorizing and comparing the thought items to reduce duplications, and writing individual statements which distilled the essence of the statements. Although care was taken to generate crystallized statements, some respondents identified points of confusion during Phase 2 due to words or phrases with which they were not familiar. Adding a “No opinion” option would have allowed respondents a chance to respond without jeopardizing our conclusions.

Even with the stated limitations, we believe that the study identified six trends that may strongly influence instructional design principles over the next ten years. From these trends we can speculate on a variety of questions that may face both academic and corporate instructional designers in the near future. These questions are shown with each of the trends from which they are extracted:

- **Trend 1.** How can instructional designers better anticipate and design for the cultural differences of their clientele?
- **Trend 2.** What components of non-linear design processes are most critical for successful performance solutions?
- **Trend 3.** What methods of on-line, on-demand access are most successful? How will new technologies be used to increase this ability?
- **Trend 4.** What limitations and advantages will exist as corporations begin to adopt shared synthetic environments?
- **Trend 5.** What components of a training system require the highest level of customization to the individual learner?
- **Trend 6.** How will copyright laws change, and how will this change influence instructional materials as digital encoding and replication evolve?

We speculate that the difference in scores submitted by corporate and academic instructional design experts may have been due to the greater pragmatic requirements of corporate experts as compared with their academic counterparts who have more flexibility to experiment without the worry of turning a profit. But what about students who complete their master's or doctorate work, then make the transition from academic to corporate life? What sorts of problems will they confront as they learn to work within the corporate environment? What types of students most easily make the transition to corporate instructional design? Are certain types of corporations more willing to experiment with new instructional design strategies? And are corporations willing to work with universities in their quest to create and develop new instructional design methodologies? These questions suggest further study and deliberations between and among the various groups.

Each of these questions will eventually be answered. By being aware of these questions now, we may be better able to stay abreast of new insights and opportunities, becoming more proactive to the changes in our field and taking advantage of answers as they become available.
References


New Issue of Training Research Journal

The latest issue of the Training Research Journal, published annually in one large edition, has been released by Educational Technology Publications. The 1998/1999 issue includes the following papers:

- Motivational and Contextual Influences on Training Effectiveness.
- The Development of Shared Understanding: Exploring Team Situational Awareness Through Role Theory.
- Arousing and Sustaining Curiosity: Lessons from the ARCS Model.
- Predictors and Outcomes of Successful Product Development Projects: Implications for Management Training in Technology-Intensive Firms.
- A Test of Three Models of the Role of g and Prior Knowledge in the Acquisition of Subsequent Job Knowledge in Training.

The current edition and all back volumes may be ordered from Educational Technology Publications, 700 Palisade Avenue, Englewood Cliffs, NJ 07632. The publication is priced at $60.00 per volume worldwide.

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