

# Preparing Educational Technologists

By AMOS C. PATTERSON

As more organizations recognize the value of training and development to their operations, the demand for educational technology graduates with expertise in program and product development will accelerate. In light of this trend, the question of what competencies these educational technologists will need becomes paramount. The preliminary findings of a report I am conducting should begin to answer that question.

## Design of study

For the limited purposes of this article, I have selected the following example questions on the curricula and experiences of a program designed to prepare individuals entering training and HRD as educational technologists.

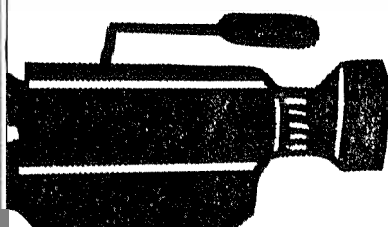
These provide a clearer definition of the parameters of the study. Sample questions

and with what required performance for evaluation?" "To what depth should business administration and organizational development be studied?" "Is the study of performance technology, in nonschool contexts, critical?" "Do the study and acquisition of skills in group processes and in the management of project teams represent important competency areas?" "To what extent should the application of message-design skills in product design and development be generalized to include the design and production of a broad spectrum of instructional media, including simple graphics and product layout, basic photography, audio materials, television and video, computer courseware and software?" "Should educational technology professionals in training and HRD as instructional developers be generalists or specialists by function?"

hour follow-up interviews, designed to verify and strengthen the validity of the study.

The design of the questionnaire includes Likert-scale ratings, rank-ordering of factors, single-item-from-an-array selections, yes/no responses and an open-ended question. We completed a pilot-use instrument in the summer of 1985, with complete response from 40 respondents; 10 from industry (manufacturing), 10 from business (service), 10 from medicine, and 10 from government and social agencies. The instrument was designed so one could compare, both statistically and descriptively, the means of responses on most items.

The professionals who participated in the study (and in the pilot) had to meet the following criteria: be members of ASTD; be responsible, in a major capacity, for program and product development; work in training and development units large enough that tasks and functions were assigned by role (no one-man departments); be willing to keep their participation in this study confidential; be willing to participate in a follow-up interview, if selected. Potential participants were identified by clustering ASTD members by organizational context—names were randomly selected from each cluster. Clusters were determined by selecting names of individuals and grouping those names by their membership in one of the following domains: business (service), industry (manufacturing), medical (treatment/insurance) and agency (government, religious, social or volunteer). We screened each individual until the above criteria were met and each had committed himself or herself to participation. A total of 200 participants were identified; a sample of 50



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include: "Is it necessary that extensive study of various instructional development models be required?" "To what extent should the study of instructional psychology be emphasized?" "Is a required, structured field internship in training and HRD necessary? If so, within what time frame

Given the complexity of the central question of the study, we designed a survey research project that included a 50-item questionnaire, an extensive review of the related literature and the input of 20 professionals and scholars in training and human resources development (12 from the nonschool setting, 8 from the ranks of professors in educational technology, business, psychology and adult education). In addition, I've planned 10 one-

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subjects from each of the four domains previously noted was randomly selected, respectively. We randomly selected 10 participants from each cluster to participate in the pilot study. The larger project now being implemented consists of a clustered sample of 160 representatives from the field of training and development.<sup>1, 2</sup>

### Preliminary findings

The following conclusions should be regarded as preliminary findings, relationships and observations. The primary source for these findings was an analysis of the data collected in the pilot study. We collected additional data from interviews with eight participants in the pilot study. Several observations were influenced by the related literature. Many agencies and organizations seeking to employ program and product development specialists, as well as institutions of higher education developing pertinent degree programs, will be quick to place high significance on these conclusions. However, both personnel directors and academic curriculum developers should note that the research project under study will not provide conclusive results until replicated research efforts representing multiple positions of inquiry are completed, and those findings stand the test of time (a situation long noted by Harless, 1985). Nevertheless, academics and HRD professionals need the direction provided here.

Academic programs preparing individuals as program and product development specialists should provide each learner:

- a strong foundation of studies in the behavioral sciences, including in-depth study of several theories of learning and instruction, models of communication, a variety of instructional development models and the theory and practice of front-end analysis and evaluation by results;
- multiple experiences and study in the design and production of training programs requiring design, analysis, instructional media production (or selection), formative evaluation, product or program revision and final program evaluation;
- the opportunity for acquiring effective communication skills including writing, organizing messages during the phases of program or product development, and executing presentations using a wide variety of appropriate audiovisual media;
- assurances that emerging instructional media technologies will not be preselected or overemphasized as the final solution to an instructional problem (in other words, training developers who know five dif-

ferent computer languages and complex courseware design methodologies for microcomputers or all there is to know about interactive video, but who do not know how to design and conduct a needs assessment or design and produce a multimedia delivery program are considered *overspecialized and of little value* in a dynamic HRD environment);

- opportunities for study and experience in the area in which the individual wishes to pursue a career (business, industry, medicine, government, service agencies, or other organizations in other contexts)—particularly when an individual is in a "career change" situation, i.e., leaving classroom teaching in the public schools to enter training and HRD in a traditional industrial setting;

- knowledge and skills in the management of the formal and informal organizational processes in program and product development (for example, skills in project management, strategic planning, budgeting and resource allocation, personnel selection and supervision, cost-benefit analysis of project results);

- practical experience in performance technology in which the learner's behaviors and performance as a pre-professional developer are clearly evaluated in the context of the problem to be solved and the goals of the organization. It is essential that the development specialist entering training and HRD possess the analytical skills to identify the problems that are appropriate for their respective capabilities and to be able to judge the cost-benefit of solving those designated problems.

The above conclusions are guidelines for the design and development of educational degree programs. They may assist course developers in identifying specific goals, objectives and learning experiences necessary to training educational technologists as program and product development specialists. In addition, these guidelines might lead to the adoption of an educational philosophy for those seeking careers relevant to their degree programs.

### References

1. Simon, J. (1969) *Basic research methods in social science*. New York: Random House.
2. Barber, T. (1976) *Pitfalls in human research: Ten pivotal points*. New York: Pergamon Press.

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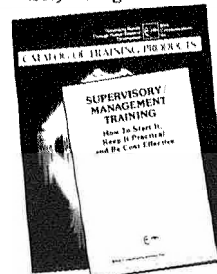
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