

# The Corporate Training Department as a Clinic for the Study of Instructional Design

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**Abstract.** Researchers can design productive studies that are both attractive and feasible to corporate sponsors. To do so, researchers should first characterize the host training program as following a reactive strategy, cost center strategy, or human capital strategy. Each strategy carries implications for the type of research that is most likely to be of interest. Designs using naturalistic inquiry, comparative studies, or experimentation may be feasible in certain circumstances. Sample research topics are given, and guidelines for initiating contact with corporate research sponsors are proposed.

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With the private sector's emergence as the dominant employer of instructional designers, those concerned over the future of the field have noted the apparent lack of opportunity for sound research in business settings, particularly research involving controlled experimentation. Furthermore, rewards for research publication in the private sector generally are minimal, so there is little incentive for serious work. The situation contrasts with that of academically-based instructional designers who are rewarded for research and publication but who often lack the resources of business settings and find it difficult to design studies for business settings that are both feasible and attractive to potential commercial collaborators.

The situation need not be so bleak. Many opportunities for research exist in the private sector, even when conventional controlled experimentation is not feasible. Such research is practical for

joint academic-business projects, but it also can be conducted by commercial developers alone. To see why this is so, three "typical" corporate views of the training function and their implications for research opportunities will be summarized. Then, alternative research strategies will be examined and discussed with regard to how they might be applied in corporate settings. Finally, suggestions to prospective academic researchers will be made on how to facilitate communication with potential corporate research partners.

## Resources and Constraints for Corporate Research

To design research for corporate settings that is both attractive and feasible, researchers must first understand how training is strategically positioned within corporations. Working from Gilbert's (1979) analysis, three alternative strategic positions may be identified: the "reactive" strategy, the "cost center" strategy, and the "human capital" strategy. Each of these will be examined, then conclusions will be drawn for how to design and justify research.

### Reactive Strategy

Many corporations regard training as an incidental expense. Authority for training decisions is dispersed to line managers, and there is no central accounting of training expenses. In this setting, training expenditures often are a reaction to a short-term problem. It is expected that the training will somehow address the problem, but often there is little careful evaluation of the link between costs and benefits. The relationship of training to long-term strategic goals is undefined. If a corporate training center exists, it may be seen as merely one of a number of alternative training vendors. It may even operate on a chargeback system.

### Cost Center Strategy

Another strategy views training as a cost center: an activity the business needs, but which does not generate income. In addition to training, examples of cost centers are finance and administration, computer centers, and office buildings. Cost centers usually are justified as a means of cost avoidance: spending money on the cost center now will avoid a greater cost later on. When training is managed as a cost center, there usually is some centralized accounting system to track training costs. Centralized administration of training is common, sometimes requiring that individual training programs be justified in terms of cost avoidance. However, benefits other than cost avoidance are not tracked. In principle, evaluation of training programs in such a system is done by tracking a given cost before and after the training.

### Human Capital Strategy

In some organizations, training is seen as a means of developing the capacity to achieve certain specified corporate objectives. In such cases, training can be justified as a means of achieving a specific strategic objective. It is an investment (in the people of the corporation) that produces a return when the objective is achieved. It is justified by comparison to alternative investments directed at the same objectives such as outside purchase of component products or services, or hiring of people who require no training, both of which come with a higher price than in-house products or personnel.

While training managers might acknowledge this three-way distinction, the terms themselves have no particular currency. Nonetheless, different approaches to research seem logical for each of the three strategic positions.

*Reactive* training environments are probably least receptive to research aimed solely at theory building for instructional design. Effectiveness of alter-

native designs for training usually is not a salient concern of managers in this environment. They often do not recognize the indirect costs of unsystematic training, and they may be unaware that there is an alternative. However, managers in such settings sometimes are concerned that they may be failing to recognize training needs that will somehow interfere with their success.

Opportunities for research in reactive settings thus may center on case studies of needs assessment and cost modeling. If hidden training costs or unmet training needs can be presented as potentially severe risks to project success, then the manager may agree to a needs assessment or a cost study as a means of managing project risk.

Training programs strategically positioned as *cost-centers* may offer a wider range of research alternatives. From the training manager's point of view, trainees usually learn the required skills whether or not good instructional design (ID) is used. The advantage of ID is that the results will be achieved more completely, more quickly, or at lower cost of delivery. Training programs positioned as cost centers often emphasize standardized development methodology, and they may be quite sophisticated in measuring the costs of development and delivery against measures of training effectiveness.

Opportunities for research in cost centers may center on any theory-building activity that leads to improved prescriptive power in design, particularly if the result will be reduced training development costs or reduced delivery costs (including time). In addition, research into improved measures of cost or effectiveness should be of interest. However, interest in research on improvements in instructional effectiveness (with no associated development or delivery cost reduction) may be limited to areas of content where present training is perceived as ineffective.

Training programs that are justified as investments in *human capital* have most of the interests of the training cost center, but the strategic focus on corporate objectives dominates. Thus, evaluation of program effectiveness is likely to include measures of achievement of corporate strategic objectives, whereas conventional learning outcomes measures will be viewed only as an intermediate indicator of success. Interest in cost reduction will be high. However, interest in improvements in training effectiveness may also lead to improved

achievement of corporate objectives, even when the result is increased cost of training development or delivery. In other words, if the increased investment in training can be shown to lead to even greater returns on some corporate objective, the investment will be justified regardless of its size.

Opportunities for research in human capital programs are likely to center on theoretical advancements in design that may lead either to reduced cost or enhanced performance. In particular, there is likely to be interest in research on methods of modeling the cost-benefit relationships of training, where benefits are expressed as contributing to achievement of corporate objectives, rather than merely achieving learning outcomes. There may be a willingness to invest in new methods or technologies of design or delivery if there is promise of enhanced or expedited achievement of a corporate objective.

Thus far, the discussion has focused on training departments that are part of a larger corporation. However, the argument can be extended by analogy to profit centers; divisions or whole companies that develop, produce, and sell education and training products and services. Ideally, perhaps, profit centers should view their sophistication in design methodology as one of the fundamental technologies upon which their business is based. In this case, the company should view investment in the technology in much the same way as the *human-capital* corporate training department. The reality, however, is that profit centers appear to be oriented in all three strategic directions. Thus, their interest in research may vary in ways analogous to the three positions described above.

### Alternative Research Strategies for Corporate Settings

The obstacles to controlled research in corporate settings are often similar to

those found in other instructional development settings. Control groups receiving no treatment are extremely difficult to obtain, random assignment of learners to groups often is difficult (though not impossible), and development of alternative treatments often is prohibitive given tight project schedules.

However, exceptional conditions occasionally exist that allow researchers to circumvent many of these constraints. Furthermore, research strategies that circumvent these obstacles may be quite feasible. This section will examine three such strategies that are currently in use at Advanced Systems, Inc. (ASI).

#### Naturalistic Inquiries

Researchers have many options for case studies involving data collection by naturalistic means such as observations, studies of project records, and the like. With appropriate guarantees of competitive security and anonymity, researchers often can gain access to data such as:

- Observations or records of meetings and classes
- Interviews with development personnel and learners
- Project time logs and correspondence
- Budgets
- Intermediate design deliverables
- Utilization figures
- Learner data, including achievement data
- Course evaluation data (objective tests and subjective ratings)
- Standards manuals
- Contracts

Furthermore, in large organizations these data can be obtained for more than one project. Thus comparisons between projects are possible.

Naturalistic inquiry methodologies have been used at ASI in two doctoral dissertations, and a third one is presently under way. The present study, for example, is a study of the decision-making process used to plan and deliver internal

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Both academic and industrially based instructional developers share responsibility for theoretical development of the field.

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training (R. Torres, Personal Communication, May, 1986). ASI also keeps many of the types of data listed above for ID projects completed over the past eight years, so many comparison studies are possible. For example, a basic principle of instructional design is that careful front-end analysis offsets costs later in a project and leads to better quality. It would be interesting to examine how investments of development time and resources at various points in the process relate to overall project cost, product quality and success in the market place.

#### Comparative Studies

When a new design technique or delivery technology is introduced into an ongoing training program, the opportunity exists for a comparison between the new and the old. In some cases, it might be possible to deliver both the new and the old simultaneously. In other cases, a time series design may be possible. For example, ASI recently completed a prototype study design (Foshay, 1986) that will be used for a series of studies comparing design and delivery variables associated with three instructional strategies (videotape/text, interactive video, and live classroom). Principal dependent variables are time to criterion, degree of mastery, cost of delivery, and subjective impression of the instruction. The principal independent variable is instructional strategy. The design calls for instructional content to be controlled and learner differences to be randomized. As studies are completed, it should be possible to draw some insights about how various design variables influence learning outcomes, even though systematic variation of each individual design variable will not be feasible.

#### Experimentation

In some cases, academic researchers may be able to obtain commercial materials for direct experimentation. Much corporate training is situation-specific and proprietary, and would not be suitable for use with research subjects such as college students. But this is not always the case. ASI, for example, is a vendor of generic training in technologies such as computing. Self-instructional courseware on topics such as basic computing concepts and programming could be used with college students, and the resources available in an academic setting would be sufficient to modify attributes of the courseware such as presentation and practice strategies.

**TABLE 1**

Three possible studies of current theoretical interest, with notes on how they could be completed using the three research strategies outlined.

POSSIBLE STUDY	RESEARCH STRATEGY
1. Development team structure and function, and the process consultation model.	Naturalistic study of a project involving team members such as designer, subject matter expert, writer, producer, evaluator, etc.
2. Comparison of algorithmic and heuristic strategies for teaching a problem-solving skill such as troubleshooting.	Comparative study of two or more training products, one designed with an algorithmic strategy, and the other with a heuristic strategy.
3. Effectiveness and appeal of varied levels of learner control.	Experimental study using treatments prepared by modifying computer software controlling an interactive videodisc supplied by a commercial vendor.

In other cases, comparative assessment of competitive self-instructional products may be possible in an academic environment. For example, academic studies have occasionally been commissioned to comparatively evaluate computer-based training products teaching an introduction to the same popular software product. Such comparisons might draw conclusions about relative effectiveness of various design strategies.

Many of the current areas of greatest research interest in ID could be addressed by using one or more of these strategies. Table 1 further illustrates the point by listing three possible studies that would contribute to development of theory in the field. For each, a note shows how the study could be accomplished using one of the three research strategies.

Research initiatives in the private sector may be undertaken by businesses on their own, or by academic researchers. For joint academic-industrial projects, a need exists for improved mechanisms of communication among academic researchers and their prospective industrial research partners. The next section will discuss some ways such mechanisms might be enhanced.

#### Improving Communication in Joint Research

Because joint research projects in commercial settings are still rare, neither academic researchers nor industrial training managers are at ease in communicating. Researchers seeking to build links with industry may be able to facilitate such communication by applying some basic guidelines drawn from the above presentation. In addition, both business and academic researchers can take steps to simplify the requirements for administration of such projects. This section will first propose some guidelines for facilitating communication with prospective commercial research sites. Then it will discuss ways of simplifying the administration of research projects.

#### Guidelines for Communication

Drawing from the presentation above, some suggestions are made about how to improve communication, particularly of initial research proposals.

- **Determine the strategic focus of the training organization.** A few questions can help reveal if the training organization focuses on a reactive strategy, a cost center strategy, or a human capital strategy.

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## Researchers seeking to build links with industry must learn to facilitate communication with prospective commercial research sites.

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- **Propose a research project with strategic benefits to the organization.** Using the observations above, attempting to match the research objectives with benefits of strategic interest to the organization may improve the chances of research project success.
- **Emphasize the strategic benefits of the research to the organization.** Once the strategic focus of the training organization is known, and an appropriate project has been selected, begin the proposal by emphasizing the benefits of collaboration to the organization. This will help the training manager cost-justify support of the project.
- **Explain the features of the project and its cost in terms appropriate to the audience.** Unless the training manager has a research background, he or she is likely to be uninterested in the methodological details of the research design. Interest is more likely to focus on the basic structure of the study, what it will and won't say, and what it will cost in time, dollars and other resources.
- **Document the proposal with a two-page executive summary of the above points, supported by a detailed study design if necessary.** The executive summary should be written in layman's terms, and should emphasize the points above. The detailed study design may be a technically worded document, if necessary.

### Simplifying Administration of Projects

Businesses are experienced at contracting for goods and services, but the special requirements of joint research often are unfamiliar. By contrast, academic researchers know the requirements for successful studies, but

they often are inexperienced at contracting. Steps can be taken by both sides to simplify administration of joint projects.

*Business can establish policies in support of research.* If no precedents can be found, issues such as access to sensitive data and cost-justification of involvement in research can require approvals at the most senior management levels. The delays and complications that result may be enough to frustrate the project coordinators. Gaining advance approval of a policy in support of research activities can simplify the process. Such a policy should state why, when, and how the business will support research on a routine basis. For example, the policy implemented at ASI makes these points:

- ASI recognizes that support of research is in its best interest because instructional design is a fundamental technology of the business.
- Proposals will be entertained from any recognized academic entity.
- Proposals should be in written form, outlining the objectives of the study, the support required from ASI, and the benefits of the study to ASI.
- Any manager may approve participation in a study requiring access to product or non-sensitive data, or four hours or less of staff time.
- Other proposals should be coordinated through the Director of Quality Assurance, Standards and Training.
- An agreement should be executed to maintain non-disclosure of competitively sensitive data and to assure ASI's anonymity in research reports.
- An agreement should be executed before the study begins specifying ASI's joint authorship, if any, of reports, and governing ASI's use of the results of the study.

**Streamline Academic Contracting Procedures.** Many academic institutions have contracting procedures and guidelines intended for governmental research grants rather than private-sector projects. These procedures often include multi-layered negotiation and approval cycles and requirements for burdening of administrative overhead that are unacceptable in a business environment. To contract successfully in a business environment, the decision maker must have considerable latitude to negotiate the contract and must be able to sign quickly once agreement is reached. Businesses generally will negotiate only with someone who has power to sign contracts.

Once a pattern of successful collaborative efforts has been established, many businesses greatly simplify their contracting procedures. With associates of proven reliability, contracts often are limited to a purchase order or letter of agreement.

### *Build Long Term Relationships.*

Because joint research is so new, only a few business organizations are in a position to issue requests for proposals for large-scale company-funded research projects. A more successful strategy for academic researchers seeking to do research in commercial settings may be to start with small-scale, low- or no-cost proposals. Such proposals might involve student projects and could involve no more costs to the business organization than access to people, products or data. Once projects of this sort have proven their worth, then it may be appropriate to suggest larger scale (and more costly) projects.

For example, interns working for academic credit with little or no salary could undertake projects with research side benefits. Similarly, doctoral students could use data from the private sector in their dissertations. Faculty could spend sabbatical leaves doing research in private sector settings. If experiences such as these are positive, then collaborative research and development projects might be more easily justified.

*Offer to maintain anonymity.* Because of competitive considerations, most businesses are reluctant to give non-employees access to details of their operations. Managers may not be familiar with the protections of anonymity offered by standard research ethics. Resistance may be overcome by proposing a written agreement ensuring

**Table 2**  
**Checklist for Initiating a**  
**Research Relationship**

- Locate local training managers by canvassing businesses with gross receipts over \$50 million. If training is not centralized, there may be separate managers for management training, and technical training (such as data processing training). They are most commonly located at corporate or division headquarters.
- Prepare an introductory letter explaining your desire to help training managers solve their problems by strengthening research links to academic programs. Emphasize that instructional design is an applied field, more like engineering than physics. Propose that contacts begin with an industry advisory panel or with an interview.
- Follow up with a telephone call to set up the meeting of the panel or to complete the interview. At the meeting or interview, ask questions to determine whether the department's orientation is one of a reactive strategy, cost center strategy, or human capital strategy.
- For each interested contact, propose a small-scale "icebreaker" project with short-term benefits to the company, and with no out-of-pocket costs. Use a two-page, jargon-free summary, with a detailed technical proposal to add detail. Include a proposed agreement on anonymity and non-disclosure. Send the proposal, and schedule a meeting one or two weeks later to present it using overhead transparencies or flipchart illustrations. After the meeting, draft a short letter of agreement outlining the obligations of both parties, and get it signed.
- At the completion of the project, prepare a report with an executive summary that clearly and simply reports what was learned, and as many detailed technical appendices as needed. Offer to present the findings in a follow-up meeting.
- After the initial success, propose a somewhat larger project. Do not involve the university's grant review and approval mechanisms, unless it can be done with no increase in complexity or cost of the negotiation process or the agreement itself.

anonymity, specifying how security of the data will be maintained, and guaranteeing non-disclosure of sensitive information.

Table 2 shows how these guidelines may be applied to yield a process for initiating contact with businesses.

### Conclusion

The presence of instructional designers in the private sector is still a relatively new phenomenon, as is the increasing strategic importance of training within corporations. Thus it is not surprising that business-based research into instructional design is still unusual. However, as businesses become increasingly aware of their investment in training (and their need to invest more), and as there is increasing emphasis on professionalization of the training function, an increasing number of businesses will be willing to invest in advancing the technology of instructional design, just

as they invest in other technologies upon which they draw.

Both academic and industrially based instructional developers share responsibility for theoretical development of the field. Recent research in more basic areas such as cognitive psychology, as well as the unique requirements of instructional design in the private sector, have imposed a research agenda that developers must complete if the field is to continue its growth. The alternatives and guidelines outlined here demonstrate how this research agenda can be addressed, even as developers go about the daily business of training design. There are many opportunities; researchers need only take advantage of them.

### REFERENCES

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