INCORPORATING AND BALANCING THE CONTRIBUTIONS OF FIELD PERSONNEL, CORPORATE STAFF AND PROFESSIONAL TRAINERS AT THE BELL SYSTEM.

PLANNING A CURRICULUM

BY RAY SVENSON

Curriculum planning philosophy at the Bell System Center for Technical Education is based on one key element: Input from the training customer or field manager, who will be sending students to our courses. To serve the training needs of roughly 50,000 Bell System managers, we depend on a curriculum planning approach which includes: a systematic process, a professional staff of training planners, and curriculum councils and board representing all operating companies.

The heart of curriculum planning for us is a systematic process. The process begins with identifying alleged training needs, carefully investigating the case in a "preproject study," setting priorities and adopting an annual project list and budget for new development and revisions. In 1978, that budget amounts to $7.5 million.

Identifying Needs

We start by developing raw lists of potential training programs for each of our curriculum "disciplines." For us a discipline is a common interest area such as Building Engineering, Forecasting or Customer Services Engineering. We have 12 of them.

Anyone can submit an item to the raw grocery list. We get some items from instructors, some from the operating telephone companies and some from AT&T Headquarters. Each has the status of an *"alleged training need."* It is only "alleged" because at this point it remains to be proven that a problem exists and/or that training is even part of the solution.

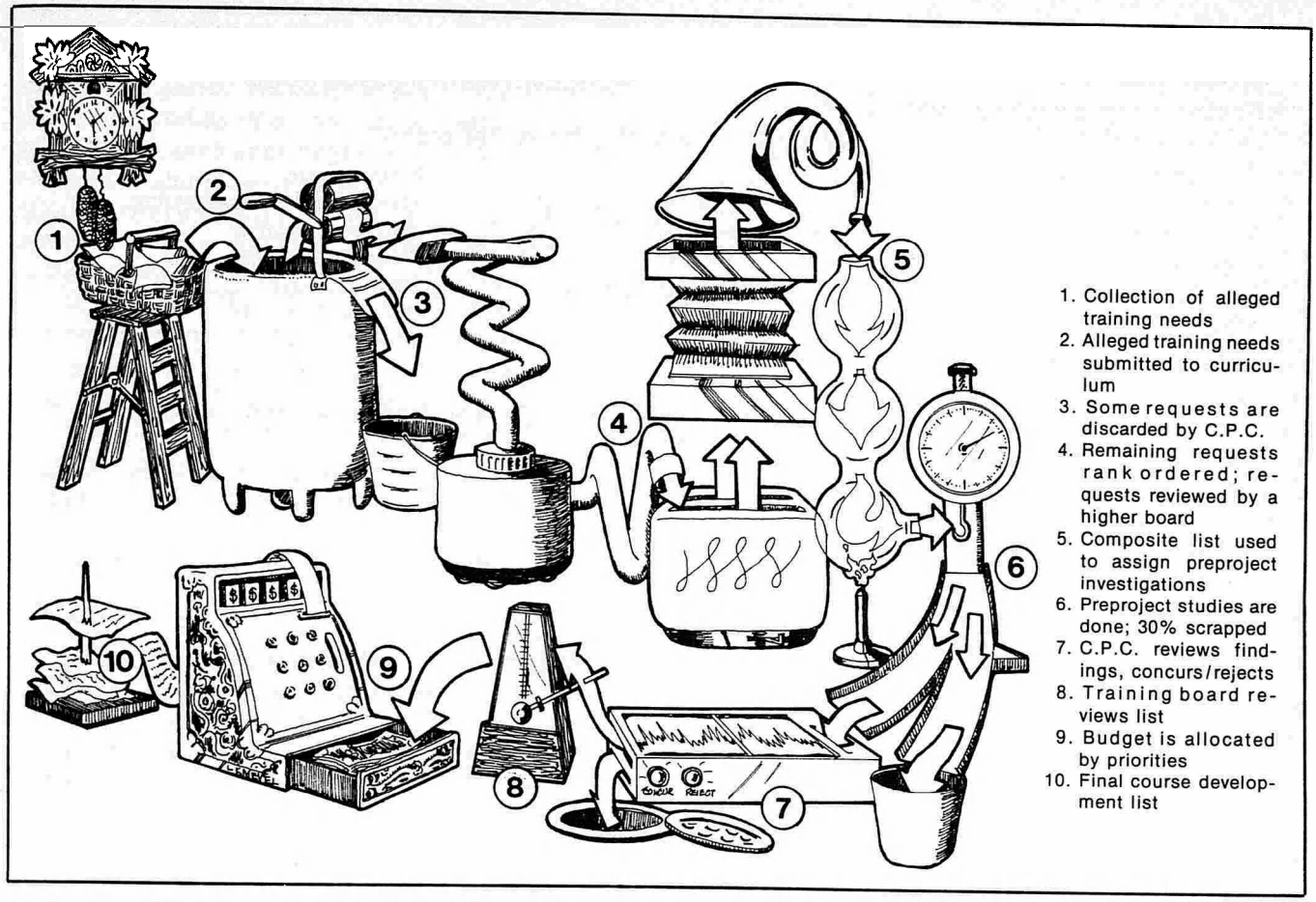
We try to get the person submitting the item to fill out a *Problem Identification Form* (Figure 1). We have found through hard experience that this information is necessary in going through the selection process. Without this data it is very hard to decide what we are being asked to investigate, and we have found ourselves following many blind leads. Filling out the form also forces requesters to think more carefully and resolve in their minds that a problem really does exist.

The next step is to submit the request to the appropriate *curriculum planning council.* There is a Bell System council for each discipline. Usually at least half of the requests are discarded by the councils. They may feel the problem is not real (or only local) or that training is not the solution (because the problem is not caused by a lack of skill or knowledge) or simply that the timing is wrong.

The remaining list is rank-ordered for priority by the council and submitted to a higher-level board. The board reviews the priorities of all of its councils and develops a composite priority list. This list is used in assigning investigators to do *preproject studies.* We start with the top priority and proceed down the list until we run out of resources to do further studies.

The Preproject Study

The preproject study is a systematic way to dig into the allegations of the request, prove the existence of the problem, diagnose the causes and determine whether or not to train. Only skill or knowledge deficiencies resulting in im-



1. Collection of alleged training needs
2. Alleged training needs submitted to curriculum
3. Some requests are discarded by C.P.C.
4. Remaining requests rank ordered; requests reviewed by a higher board
5. Composite list used to assign preproject investigations
6. Preproject studies are done; 30% scrapped
7. C.P.C. reviews findings, concurs/rejects
8. Training board reviews list
9. Budget is allocated by priorities
10. Final course development list

portant problems or potential problems are grounds for recommending training.

I will not elaborate on the preproject study since this first cut at "front-end analysis" or "performance analysis" is now a familiar fixture in the literature of training technology. One point worth making is that the preproject studies often recommend other remedies instead of, or in addition to training. These may include: redesign of the work, better procedures, reference materials, improved organizational interface, tools or time to do the job, and feedback mechanisms for the employee.

The preproject studies result in scrapping about 30-40 per cent of the projects, usually because training is not the answer or other things must be done first in order for training to have any effect. The remaining 60-70 per cent represent recommended training programs which must be reviewed and given priorities for program planning.

The curriculum councils review the findings and recommendations of each preproject study and concur or reject. A preproject study costs an average of $10,000 and takes an investigator two months to complete. The training development which may follow costs an average of $130,000. By trimming out 30-40 per cent of the projects, the preproject step pays for itself.

Program and Budget Planning

Each council ranks projects for its discipline which have come through the preproject phase. Again the training board meets and reviews the project lists from all of its councils. Generally the total amount of budget available for the next year has been established in advance. The board then makes a composite priority list of the projects, and the development program for the following year is built by working down the list until the available budget is allocated.

This completes the description of the process itself. The projects which show up on the final course development list contain only 15-25 per cent of the original grocery list items.

The process I've just described does not, however, link the "pieces" of a curriculum together. To accomplish this, we conduct curriculum planning studies which survey all needs in an entire discipline. It results in: a complete list of work functions within the discipline, a list of outputs, typical deficiencies in output, and a rough curriculum map. Once such a study is completed, future preproject studies are scoped and defined (from it as well as current information from the field).

To date, we have completed four curriculum planning studies, and three more are under way. Each study requires roughly six months to complete, working with a professional staff of two.

Curriculum Planning Council

We have been using *curriculum planning councils* as currently defined for the last two years. Each council is made up of about seven middle managers taken right from the "field," and a chairperson from AT&T Headquarters. The AT&T chairperson is usually a staff manager who has responsibility for providing methods and support to the field in that discipline.

Each council meets two to three times a year and at each meeting:

- Reviews the list of alleged training needs

- Develops a priority list for preproject studies
- Reviews any completed preproject studies
- Develops a priority list for course development
- Reviews the status of ongoing courses
- Develops a list of needed revisions

Council members represent all Bell Operating Telephone Companies and are responsible for maintaining active liaison with a principal contact in each company.

It is our opinion that we get much more mileage out of the councils by using field managers than if we had operating company trainers. The field managers have firsthand knowledge. They can discuss the merits of each issue and make effective critical judgments on the spot.

AT&T Headquarters personnel who chair the councils are in the best position to select highly qualified council members. They bring with them a corporate perspective on new technology, as well as the power to carry out any nontraining recommendations which may result from the studies.

Our experience with these councils has been good. We are able to attract top managers on a voluntary basis. The work is interesting, and absences are rare (substitutes of subordinates aren't permitted).

Through the activities of the councils, we find project lists come into sharper focus. The per cent of projects washed out in preproject studies has dropped from 50 per cent to 34 per cent, and we expect a further drop to about 20 per cent. This is due to intelligent prescreening by the councils. In addition, careful defining of projects by the council shortens investigation time.

The Professional Planning Staff

The third major ingredient is the planning staff. The curriculum councils can only make effective decisions if the staff work done for them in assembling raw grocery lists and conducting preproject studies is complete and accurate.

We have found that preproject studies are usually done most successfully by trained investigators who are not experts in the subject being studied. This meets with much skepticism at first, since we investigate complex technical job functions which the investigator cannot possibly master during the study. Nevertheless, the findings and recommendations are usually accepted.

We find that people who are experts in the subject are very rarely objective. They usually start out with strong opinions about the existence of problems and solutions to those problems. It is much better to have our investigator interview and/or send a questionnaire to a large number of subject-matter experts. The investigator can keep asking questions until the experts have proven or failed to prove their points.

The investigators must be skilled in the art of performance analysis — especially data-gathering techniques. They must also be effective communicators, able to operate on their own in unfamiliar environments. We recruit people with these necessary traits and then provide additional training in specific skills.

Figure 1.

PROBLEM IDENTIFICATION FORM

Discipline (Check only those that apply):

__Building Engineering
__Equipment Engineering - CO
__Equipment Engineering - PBX
__Maintenance Engineering
__Outside Plant Engineering
__Service Costs
__Special Services Engineering
__Technical Planning
__Transmission Engineering
__Other (Specify): _____

1. **Problem Description:**
What specifically is wrong that you think training can correct or improve?

2. **Symptom of Problem:**
In a few words, describe the output that is or may become deficient, or the situation which may lead to a problem, such as the introduction of a new equipment type.

3. **Who:**
Who produces or will produce the deficient outputs?

Job Title(s) _____

Job Level(s) _____

Approximately how many people in your company are in this job?_____

What percentage of those performing the job are producing or will produce the deficient outputs?_____

In your opinion are there any factors which differentiate those producing deficient outputs from those not producing deficient outputs (e.g., job experience, background, etc.)?

4. **Cause(s) of the Problem:**
Please include any factors which are wholly or partially responsible for the problem such as lack of knowledge, lack of documentation, inputs from other groups, etc.

5. **Job Standards:**
What are the standards indicative of good performance (e.g., system indices, company policy, BSPs, etc.)?

6. **Deviation from Standard:**
How does the job output differ from the job standard?

7. **Solutions:**
What mean(s) could best be employed to solve the problem (e.g., training, creating methods, work design, job standards, changing inputs, etc.)?

8. Are you aware of any studies that are/have been conducted in this area (e.g., Operational reviews, task force studies, company and/or system audits, etc.)?

Your Name: _____

Company: _____

Address: _____

Phone Number: _____

Having a dedicated group of investigators helps build competence. Each person conducts about five or six studies in a year, gaining skill with each experience. The group also shares experiences so skills grow even faster. Direct supervision by the manager of curriculum planning provides day-to-day support to the investigator. For each preproject study, we conduct a planning meeting and a review meeting. These meetings provide an opportunity for key people to interact directly with the project.

The planning meeting is held as soon as the investigator has roughed out a plan for the study. In attendance are the investigator, the investigator's supervisor and division manager, one or more peers of the investigator, a training manager from the course development organization, a subject-matter expert from AT&T, and, if possible, an instructor in a related course.

During the meeting we review what is known, review the plan of attack, suggest specific sources for data gathering and provide any other help we can. A key decision is to agree on the specific scope of the problem to be studied. If the scope is not defined, the study could go off into blue space or be defined at the whim of the investigator.

The review meeting is held when a draft of the final report is ready. The cast of characters is the same. During this meeting we shake most of the bugs out before presenting a written report to the curriculum council. Both meetings are held for the benefit of the investigator who plans the agenda, invites the participants and conducts the meeting.

No training "process" is infallible, nor guaranteed to work in all organizations. The curriculum planning system described worked well for us as a means for incorporating and balancing the contributions of field personnel, corporate staff and professional trainers. As new problems emerge, even our own approach may have to be altered. But at the very least, we hope that this account of our experiences will provide some guidance to other organizations seeking to establish professional training programs of their own.

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