

STRATEGIES AND RESOURCES FOR CURRICULUM INSTALLATION

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Several articles in this issue as well as the general literature on curriculum change refer to the need for productive strategies and plans which will cause new programs to be used widely and well. This short article presents some reflections based on ten years of experience in Hawaii, and on impressions gained from experience at large.

Curriculum Installation Strategies

Teachers use what is useful! Teachers want their students to progress in their studies and to enjoy the process. At the same time, they want to eliminate any major causes of distress among students, parents, and administrators. They will use the tools that help them make this possible. Teachers also want to live up to their single and collective aspirations in teacher performance while continuing to renew and expand their own knowledge. Programs that help them make these gains for their students and themselves will have a chance of being accepted in both the short and long run.

Conversely, teachers resist programs that make them uncomfortable ("touchy-feelies," community-sensitive content); that let them down (projectors won't work, drills won't teach); that are too complex and clumsy and beyond the time and energy limits of teachers and school staff. They especially reject programs that deny them the satisfaction of fulfilling long-standing roles for teaching (witness the failure of so-called "teacher-proof" curricula). In short, the product to be installed must be carefully crafted for competent, smooth, simple operation and for maximum enhancement of the teacher's role.

During the first, or development, phase of the project, full attention should be given to these factors. A successful strategy to achieve these characteristics in the curriculum package is in the formation of the project staff. A balanced staff of teachers and content scholars, led by a person sophisticated in curriculum work, is ideal. The

interaction of persons who are concerned about the professional, the intellectual, the practical, and the design aspects of the curriculum development problem helps assure the integration of the essential factors.

Our experience goes contrary to the common assumption that all or most, or even large numbers of teachers, must be informed about the new program and involved during the development period. We would tend to argue the opposite — that the development team should be protected from substantial amounts of miscellaneous input if it is to have the opportunity to do its creative work. Frequent, wide, and unfocused field contact in the early stages dissipates staff energy, often over 50 percent of it. At the same time, it often produces a negative attitude on the part of teachers in the field. Teachers are most interested in what they can see and use now or next month or maybe next year — they need to cope now! They are impatient with promises of pie in the sky and respond less than thoughtfully to long-range plans.

A second phase of the project may be called the *decisionmaking* phase. In this stage teachers and other school people learn about programs presently available, or about to be available, and decide whether or not to involve themselves. (The decision to try the program *is* the decision to use it; there are, in reality, no two-stage decisions.) Strategies for informing teachers and school people about prospective programs can be both formal and informal. One productive channel for information has been the professional organizations; for example, the Hawaii Science Teachers Association, the Hawaii Council of Teachers of English, and the Hawaii Music Educators Association. Formal informational meetings called by state and district leadership personnel have also been most helpful. Visits by project staff to individual schools are also high in potency for effective information transfer. Probably

more critical questions involving school decisionmaking arise at these smaller sessions than at any other.

These various sessions should include information about the program and its availability for installation, and commentary by teachers and administrators of development test schools about program use. There should be opportunities during the sessions and subsequently to inspect the program materials.

Our Hawaii English Project — Secondary staff developed a novel addition to decisionmaking strategies in the way of a "project sampler," consisting of a sample month of instruction from the new program. The sampler includes student and teacher materials in the form of four one-week units from each of the major sub-programs — literature, language systems, and the two skills components. Over 80 percent of the state's teachers in the target grade level (7th grade) signed up to teach the sampler and came to a Saturday training session to prepare themselves. The training and sample teaching were followed by a school curriculum planning exercise, in which each school was encouraged to think through its present English program, resources, students' needs, and other related factors. The planning exercise was a condition to participation; it would precede any decision by the school. It was pointed out that each school would make its own decision *as a school*, that each could localize or personalize the program according to several different models of program component mix. It was further pointed out that the decision to install would mean a commitment to invest specific school personnel and fiscal resources to prepare for, continue, and physically maintain the program. At the conclusion of their pre-decision activities, over 80 percent of the junior high schools elected to install the Hawaii English Program — Secondary.

The *follow-up*, or third, phase of the installation programs occurs when the teachers are using the program or are about to use it. Initial program-specific training is a must, and continuing training and school visitation and support are strongly recommended. Teachers tend to appreciate the continuing sense of involvement

with the project staff and other teachers. This identity is important and sustains teachers when the going gets tough. In his article, Dr. Pottenger gives some observations on the phenomenon of teacher attitudes and enthusiasm.

The general management of all the curriculum installation processes is important. We strongly advocate that all of these phases — including services, training, supervision, and procurement and delivery of materials — be entrusted to an individual or a particular group. When these services are dispersed to various agencies and individuals, the necessary communication and installation problem-solving capabilities are critically reduced. Furthermore, our experience shows that there can be no sharp separation between development and installation processes. For greatest efficiency and effectiveness there must be continuity with the development staff, preferably deployment of senior developers into the installation, revision, and interpretation stages.

The Cost of Curriculum Installation

We have gained enough experience in an integrated system of curriculum installation support such as discussed above to give some indication of costs. Table 1 presents the cost breakdowns of three CRDG projects. Two of them, Foundational Approaches in Science Teaching and the Hawaii Music Project, are completed and widely installed; the Intermediate Mathematics Project, now in its final development phase, is given as an example of our contemporary style of work. Costs of other projects with which CRDG has been associated, notably the Hawaii English Project — Elementary and Secondary, are not included in this analysis. These projects were largely Department of Education endeavors undertaken with CRDG assistance. The precise costing of these projects is thus more difficult than for those done entirely by our Group.

The cost experience and projections are presented for three phases of each project: (1) the cost of design, development, and early testing; (2) the cost of a major revision at about the ninth or tenth year in the life of the curriculum, and (3) the cost of initial and sustained training, including

the cost of support teams which visit participating schools. It is assumed that a successful curriculum will have a minimum life of about 15 years; this estimate is based on the experience of such projects as CHEM Study, Project Physics, and of our own project curricula — some of which have been in use for seven years. Note also that the cost of training and support in all cases exceeds costs in the other categories.

Figures on the total number of students who will use each program were computed from actual numbers or estimated at 60 percent of the state's classes in the subject matter field, at the appropriate grade levels. The 60 percent continues to be a reasonable estimate.

Finally, Table 1 gives the cost per student per year for each package. These final per-pupil cost figures — \$4.55, \$2.71, and \$2.96 — are much lower than we believed they could be. The analysis, *in toto*, indicates that systematic curriculum work of this style is well within the financial resources of school districts the size of Hawaii's.

Based on our experience and judgment, it seems that the key to low-cost installations is a spare, efficient developmental team and an organized, sophisticated installation strategy and program.

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Table 1
COST PER STUDENT/YEAR OF
THREE HAWAII-DEVELOPED CURRICULA

	FAST Science Program	Music Program	Intermediate Mathematics
Development and Evaluation Cost	\$ 377,000	\$ 467,000	\$144,000
Revision and Evaluation Cost @ Year 10	\$ 106,000	\$ 131,000	\$ 40,000
Training and Support Cost (15 years)	\$ 572,000	\$ 691,000	\$405,000
TOTAL COST (15 years)	\$1,055,000	\$1,289,000	\$589,000
Number of Students Served for 1 year (15 years)	232,000	476,000	199,000
Cost per Student per Year	\$ 4.55	\$ 2.71	\$2.96

Explanatory Notes:

1. Experiences indicate that successful curricula have a minimum life of over 15 years.
2. Student materials costs not included because they do not exceed normal material costs.
3. Training and other support available on a continuing basis to all teachers using project materials through the entire period.
4. FAST — Any consecutive three years, Grades 6-10
Music — Grades K-12
Mathematics — Grades 7-8

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