

CHIPPING AWAY AT RURAL SCHOOL PROBLEMS: THE ALASKAN EXPERIENCE WITH EDUCATIONAL TECHNOLOGY

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Ten years ago, educational technology in the rural schools of Alaska consisted of a film projector, a tape recorder, a record player, and a short-wave radio. A classroom was considered quite advanced if it had a "show-and-tell" machine, where a beep on the record would automatically advance the filmstrip which was projected onto an imitation television screen. The short-wave radio, often the only direct link between the community and the outside world, was carefully protected in the principal's office. There were no technology support systems, technical services personnel, media resource centers, or telecommunications networks. If the equipment broke down, the teachers fixed it. If the teachers wanted special curriculum materials, they made their own filmstrips. Technology was on a scale and in a quantity that an individual teacher could manage.

A visit to the same schools today will produce quite a different impression of the role that technology plays in education in rural Alaska. The first thing you will notice, as you walk into the village from the airstrip, will be the large white dish pointed toward the sky. Once in the school, you will see television monitors and receivers, videotape recorders and cameras, telephones and audio-conferencing equipment, and one or more microcomputers. In a few schools, you may find a low-power radio or television station, with students tending the control booth (Martz, 1982). Walking around the school, you will hear students talking about how to "boot a disk," teachers inquiring about the latest desktop publishing software, and administrators muttering about an "EMS message from DOE." You will observe very few classes in which some piece of equipment from the school's technological arsenal is not being put to use during the course of the teaching day.

Why is all of this technology available in these schools, and what effect is it having on the quality of education the schools offer? Alaskan educators are using technology to address several long-standing problems that face the schools in rural Alaska. Most of these problems also confront rural schools elsewhere. But the vast distances, the harsh climate, and the diverse cultures in Alaska sometimes so exacerbate these problems that it becomes necessary for Alaskan educators to stretch their imaginations and explore unconventional approaches to solving them (Barnhardt, C., 1983).

Over the past decade, the following factors have led to the increased use of technology in rural Alaskan schools: 1) the establishment in 1976 of 21 rural school districts (to replace the state-operated school system) and the

creation of 120 new village high schools, both of which have brought a demand for greater community participation in decision making and for more flexible and culturally adaptive approaches to curriculum; 2) the increased state revenues that resulted from oil development and the subsequent investment in a state-wide telecommunications system - a system that sometimes seemed to be a solution in search of problems; and 3) the ready availability of the technology.

"Education" has provided an easy rationale for justifying the state's investment in high technology, although the efficacy of centralized (versus decentralized) approaches to educational technology is still a controversial issue. One question, for example, is whether or not an audio-conferencing system designed to facilitate legislators' interactions with their constituents during a legislative session can also serve the needs of children and teachers in rural schools. The schools' growing dependence on technology inevitably leads to such sociopolitical issues as control, power, scale, standardization, and priorities, so it is to those issues that we will assess the implications of Alaska's flirtation with the high-tech world.

Implications

Educators have been applying technology to address a variety of problems facing rural schools in Alaska, including remoteness, limited curricula, small multi-graded classes, imbedded cultural traditions, dispersed management structures, inadequate training opportunities, and high cost (for further discussion of these issues, see Barnhardt and Barnhardt, 1983). Placed in proper perspective, of course, some of these problems may in fact be strengths. While it is too early to adequately assess the full effects of technology on the quality of education in rural Alaska, we can extract some lessons from the experiences of the past decade. Three areas of particular concern - control, standardization, and scale - are closely intertwined.

The question of who controls the use of technology in rural schools is a critical one, for it determines, more than anything else, how educationally productive that technology will be. If the use of technology is determined by external proprietors (e.g., commercial software developers or centralized broadcasting systems), technology will be a relatively unimportant tool for the education and empowerment of rural people and communities. If on the other hand, the scale and design of the technology is such that it can be manipulated by the user and adapted to local needs and resources, it can be a powerful tool for the expression of rural values and practices (Dubbs and Barnhardt, 1982).

At a time when rural communities in Alaska and elsewhere are struggling to ward off the forces of social and economic homogenization, schools take on an increasingly important role as socializing institutions. Whether educational technology will contribute to homogenization or will encourage social and

cultural diversity is determined, to a large extent, by its scale. Large scale technology is likely to remove the locus of control from the user, thus contributing to standardization. Exceptions to this rule occur when the technology is explicitly established to facilitate local participation, as is the case with audioconferencing or electronic mail systems.

The most promising and most versatile piece of appropriately scaled technology currently available for rural schools is the microcomputer. However, its full exploitation as an educational tool is dependent on new forms of teaching and learning that are just beginning to emerge in teacher training curricula. As microcomputer technology and expertise become increasingly available, we may find that such features of rural schools as their small size will become positive, rather than negative, attributes. However, if we fail to attend to issues of control and scale, today's solutions may become tomorrow's problems. If there is one lesson to be learned from the Alaskan experience with advanced educational technologies, it is to proceed -- but to do so with caution.

References

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