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ABSTRACT

The mission of the Northwest Regional Educational Laboratory is to effect educational renewal through the development, testing, and implementation of innovative curriculums, strategies, and techniques. One of the Laboratory's four major programs--the Computer Technology Program--seeks to promote the Laboratory's mission by developing materials for teachers, administrators, and students. The program is based upon the beliefs that computers are a permanent and significant part of modern society and that it will take an informed citizenry to deal effectively with them, and with their social impact. Wherever possible, the Laboratory-developed materials adhere to the principle of teaching about computers by teaching with computers, thus giving the learner direct experience with the phenomenon being studied. (PB)

SOCIAL IMPACT OF THE COMPUTER: AN INSTRUCTIONAL APPROACH (A SUMMARY)

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INTRODUCTION

This report is organized into two parts -- a brief description of the Northwest Regional Educational Laboratory, and a discussion of the rationale and philosophy which have guided the development work at the Laboratory which is in the area of "social impact of computers".

NORTHWEST REGIONAL EDUCATIONAL LABORATORY

The Northwest Regional Educational Laboratory is a six-year old organization located in Portland, Oregon. It has been primarily supported by contracts with the United States Office of Education (now National Institute of Education), with additional contracts from schools, colleges and universities, state departments of education, territorial governments, and others. The mission of the laboratory is to effect educational renewal through development, testing, and installation of innovative curricula and organizational strategy. A large number of curriculum materials and educational products have been developed for classroom use and for training of teachers and other educators. Four major programmatic efforts have formed the nucleus of laboratory activities for several years, one of which is the Computer Technology Program (formerly called REACT -- for Relevant Educational Applications of Computer Technology).

The Computer Technology Program has developed materials in several categories. Products that are completed and commercially available are a Computer Survey course for teachers and administrators, a second course for teachers called "Computer-Oriented Curriculum", and a second course for administrators called "Computer Applications for Administrators" (to be available during 1973). Other products nearly ready for release are "Elements of Computer Careers", and some mathematics units, both for high school level students. Current and future efforts will be in more advanced teacher and administrator training courses and pupil curriculum materials in all major subject matter areas. Both past and projected courses contain some units specifically dealing with the social impact of the computer.

PHILOSOPHY OF PROJECT

There are several points which have served as guiding philosophy through the planning and development on this project.

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The first point is somewhat trite but nonetheless true. Quoting from a previous paper:

> "There is no question that computers are here to stay. Few facets of life are unaffected. Banking and credit, utilities, transportation, law enforcement, business and industry -- all rely heavily on the support of computers. Their effect on peoples' lives is of sufficient scope that computer technology is regarded as a major social phenomenon. We are truly in the computer age.
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> "This type of status afforded the computer beckons the schools to examine their responsibility to teach about the computer, as well as examining the potential of the computer as a teaching tool and as a management tool.
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> "To ignore the presence of the computer is not a viable alternative for the educator today. It is of a higher order than other fads or gimmicks in teaching or management technique. Computers are as much a way of life as television, high-speed transportation or air pollution. A more appropriate alternative for the educator is to acquire the skills and knowledge necessary to help control the direction of computer use in schools and in society."

While this logic is probably generally accepted by those in the profession, it does not go unchallenged. One argument is that to teach about computers is to promote their use, which is of questionable benefit. Another group, in the wake of the ecology movement, has concluded that all things technological are by definition evil. We have taken the view that technology does present many problems, but that knowledge of the technology and the problems is essential to deal with them adequately. Computers can be a menace, but an informed citizenry can cope with this better than an uninformed one. On the ecology argument, we believe that indeed technology has been largely responsible for the mess we now find ourselves in; we also believe, however, that intelligent uses of computer and other advanced technology offer the best hope for solutions to many ecological problems.

One of the better ways to teach about computers is to teach with computers. It is, first, good teaching strategy to have students experience a phenomenon rather than read or hear about it. For this reason, we have urged "hands on" experience throughout all of our curriculum and training materials. Integration of the computer into the curriculum throughout the various academic areas has the added advantage of representing accurately the way in which the computer is indeed integrated into all aspects of the world in which students will live.

We have developed materials in science, mathematics, social studies, English, and business education in the teacher training course, as well as pupil curriculum materials in mathematics and business education. Another entire course in computer careers also utilizes a large amount of "hands on" computer experiences as a vehicle to teach about computers.

Curriculum development and teacher training cannot be separated. Our program has from the beginning attacked the problem as a large package -- administrator training and awareness, teacher training, and curriculum material. In that respect, here is a quote from our rationale statement in our program plans.

> "The schools must take on the responsibility for educating individuals wno will be able to live fulfilling lives in a technological society. Central to that preparation must be an understanding of computer and other technologies; of their capabilities and limitations; of their promise and danger. In this regard computer technology cannot be separated from other modern technologies.
>
> "Presently, the level of public understanding of these technologies and their implications is far from that which is necessary in order for society to deal intelligently and responsibly with the philosophical, moral, and practical issues precipitated by the technologies. This lack of understanding engenders an irrational fear of computer and other technologies and effectively begins to erect an impenetrable barrier to the ultimate use of the technology to man's own good.
>
> "The current situation, however, with respect to education in computer technology is largely that it is not being carried out. Most teachers themselves do not have a substantial base of understanding about the technologies of the twentieth century, and in particular about computer technology, and it is unrealistic to expect that responsible, quality education about technology and its influence on society can proceed until teachers themselves have sufficient background and knowledge, and until they have access to quality, relevant curricular materials."

The Computer Technology Program of the Northwest Regional Educational Laboratory has attempted and is continuing to attempt to meet these needs through development and testing of teacher training courses, administrator training courses, and computer curriculum materials for students.

Further information on the program can be obtained from

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300 Lindsay Building
710 S.W. Second Avenue
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Information on those courses already completed and published, i.e.,

Course I Administrators and Teachers
"Computers in Education: A Survey"
Course II Teachers
"Computer-Oriented Curriculum"
Course III Administrators
"Computer Applications for Administrators"

can be obtained from the publisher, Tecnica Education Corporation, 3301 Vincent Drive, Pleasant Hill, California 94523.