

## FACTORS AFFECTING READING MACHINE INSTRUCTION IN REHABILITATION CENTERS \*

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After watching the progress of Battelle Institute and Mauch Laboratories, my superior, Dr. W. T. Liberson, Chief of Physical Medicine and Rehabilitation Service at Veterans Administration Hospital, Hines, Illinois, and I were pleased when it became possible for us to have one of the Battelle machines at Hines. Dr. Liberson's own interest in the application of electronic technology to the amelioration of physical disability was a factor in making this venture possible.

On May 13-17, 1963, Mrs. Genevieve N. Miller, Assistant Chief of the Central Rehabilitation Section for Visually Impaired and Blinded Veterans, went to Battelle Institute in Columbus, Ohio, for training which would fit her to instruct in the use of the machine. Mrs. Miller began the training of Harvey Lauer, Braille Therapist, in April 1964. They proceeded through the two hundred lessons of the Battelle series as their working time would allow, until Mr. Lauer completed his instruction in December 1964. In addition, Mr. Lauer put much of his own time and energy into the program and is to be highly commended. Mr. Lauer is here to present his own experiences to the group, and I will comment no further.

The reading machine is not a substitute for braille reading and writing. The reading machine is an additional communication tool and offers great freedom in perceiving the ideas contained in the printed or typed word. Braille gives much greater flexibility in retrieving ideas that have been set down for the writer's use.

There are four ways in which a blind person can obtain information from the printed word—braille, recordings, a sighted reader, or the optophone. All except the optophone require the action of a second party. The optophone, however, will not be able to completely displace any one of the three, for each has its invaluable aspects for the blind person.

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There are factors which govern the adoption of new programs in the comprehensive rehabilitation program of the center at Hines. These apply also to reading machines. There are the factors of validity and relevance which must be considered first. After these come the factors which govern inclusion.

When a new program involves any device, it becomes important that the device has technical validity, and does what it is designed to do, reliably. Portability, size, reparability, and other factors important to engineers come into play and seem to be adequately met by the Battelle device.

There is a validity of instruction which is not as clear as I shall define it. Instructional validity has to do with human beings being able to learn to use the device with a reasonable amount of time and effort. The instruction series for the optophone seems to have been well validated. On the basis of the experience with Mr. Lauer, we would hypothesize that the actual time the instructor spends with the student might be reduced without serious harm to learning efficiency.

Relevance of both device and instructional program to the management of sight loss is important. The deepest motivation springs from participation in activities which promise the most success in managing the greatest areas of life affected by loss of sight. This is the way in which we would define relevancy. The device and the techniques, which are to be learned for its use, are always weighed in this manner. Indications are that the optophone has relevancy for some blind persons but is not universal in its applicability in solving the problems of blindness.

The factors governing inclusion of a device which has validity and relevance into an established program of proven worth are very complex. Inclusion may be made by displacement of a previously established program element, or by addition to the established schedule of the program. In order to displace a program element, the program to be included must answer the same difficulties of blindness in a better way than the element being displaced. That is, a mobility program can displace a mobility program or a counseling program can displace a counseling program if they have a higher relevancy. The optophone is an additional area of function and does not duplicate any of the established types of program and, therefore, could not displace them.

New programs can be included by addition to the established programs when there is a high level of relevancy and if the new program is for an area of function not touched by existing programs. Such additions do have an effect on participants as well as other phases of the program. The time, energy, and attention of participants can only be spread so far before some part of the program in which they are participating begins to be slighted. Motivating blind persons to expend energy at a high level is a part of the staff function in this center, but there are reasonable limits.

Although there are negative factors, inclusion of the optophone program into the center should be by addition, rather than displacement.

If there were a very limited number of individuals with whom we would deal, an optophone program could be worked out with only a limited increase of the patients' stay in the section. This would have to be done by adding evening and weekend classes on the optophone and by some modification of the training regimen developed by Battelle Institute.

I do know of a center where substitution or displacement of a sort is a part of their programming, which might include the optophone program by displacement. Perhaps both should be tried.

The kinds of knowledge and skill which are found in a blind rehabilitation center would provide an apparently promising environment in which student, instructor, and machine might be gotten together. A center might set up a specialized program for men who wished to be admitted specifically for training with the optophone, in much the same way that dog guide schools admit for only one area of study. Such an insular program, if significantly extended, would need additional space, equipment, and staff; but, it would more nearly meet the instruction time criteria developed by Battelle Institute. These criteria are much longer than the time span usually occupied by the rehabilitation process.

Instruction on the machine might also be tried on a home visit basis, wherein the teacher instructs the prospective user in his home. The machine would stay in the home and the student might use it for practice at his convenience.

There is a factor which seems implicit in the development of the optophone. That is, that machines will be issued to blinded veterans who are satisfactorily trained in their use. This is a strong motivational factor. Blind persons who learn to use the machines must have some assurance that the optophone will be available to them after they have satisfactorily completed their training. It is hoped that blinded persons may seek out a skill with the optophone as a matter of intelligent self-interest, wherein after they learn to use the machine it will be available to them.

There are other human factors which are not clearly understood yet. These seem to be principally those of readiness. We will not understand these until we have spent some time earnestly training blind persons to use the optophone. Not all blind persons have a strong sense of urgency about learning to read a new way, but those who do, and especially those who have a practical use for such skill, should be able to do so.