

POTENTIAL USES OF THE OPTOPHONE ^a

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By discussing the uses to which I have put an optophone, I plan to show how this method of reading ink-print may become an efficient tool for many blind people.

I work for the Veterans Administration teaching braille to blind and visually impaired veterans at Hines Hospital in Illinois. Formerly, I was a home teacher for the State of Illinois.

I took the 200-lesson course of training for use of the optophone. Both the course and the optophone I used were developed for the Veterans Administration at Battelle Institute in Columbus, Ohio. As yet, I have not taught the skill.

The course was completed about a year ago and since then, I have used the optophone for many little things.

I always read alone, but I had help in selecting the materials of the course, taking tests, etc.

After completing the course, a four-step procedure was evolved for developing new uses. The procedure could be terminated in success or failure at any point. Step one is to try to read or identify an item. Step two is to have someone describe the material, and I would ask him pertinent questions about it. Then, if step three were needed, I would reexamine the item using the optophone. In some cases step four was helpful. I would make a braille description of the format of the reading matter so that I could efficiently read a similar item in the future. In the case of some items like bank statements, I could simply remember the layout.

I do not claim maximum efficiency for this procedure, and it should be modified for some learners of differing abilities and backgrounds.

I found six categories of efficient uses for the optophone. A few months ago there were four, and the sub-groups are increasing each week. A pleasant surprise awaits me around every other corner. The joy of reading something for the first time more than offsets the imminent little failures along the way.

^a This paper was presented at The Sixth Technical Conference on Reading Machines for the Blind sponsored by the Veterans Administration, PSAS, Washington, D.C., January 27-28, 1966. A review of the Conference appears elsewhere in this issue.

It remains to define an efficient use. An efficient use is one which, after reasonable training, permits greater independence and also reduces the handicap of blindness to the individuals under consideration. I am here concerned with the things a busy person would want to read himself with a machine like the optophone.

1. Of great importance is the ability to read one's typing and to check the operation of a pen or pencil. I did this long before completing the course. It was made easier because of the foreknowledge one has of what is being read and because the likely typing errors are unlikely to be missed with the optophone. I spot-check correspondence and read all addresses and checks I write. I occasionally find an error I had no idea was present. I can read with the paper still in the machine if necessary, make corrections with all-white carbon, find my place or read what was last written. I sometimes write several checks and envelopes and then check them all. At first, it was more efficient to check an item immediately after writing it.

Formerly, our typewriter would quit working properly in the midst of a stack of Christmas cards. Now, even the slightest question as to a key struck or an item inserted into its proper envelope can be cleared up on the spot. I use raised-line checks and type them all. There is no longer the need to carry around letters and checks just to have the typing checked. My typing is improving because I can concentrate more on accuracy and because those strikeouts sound terrible.

There are those who, through carelessness or desperation, do not have their typing checked. They sometimes send blank or unsigned checks through the mail. This calls for an attitude development.

A blind typist using the optophone would not need sighted help in making corrections and could even replace the paper into the typewriter when necessary. When a blind person has much detailed work to do, sighted family members can become discouraged. As a college student, I would often wonder, "Let's see, whom should I pester with this problem?"

2. The second category is identification of currency. I identify \$1, \$5, \$10, and \$20 bills. This can be done with one hundred percent accuracy with either the Battelle instrument or the new Visotoner developed by Mauch Laboratories. The Visotoner is better for this purpose because one can scan an area almost one-half inch tall and because it is so compact and portable. Identifying money is often more necessary away from home.

Perhaps a businessman such as a vending stand operator might keep the device on a bracket within easy reach. I believe it would add to the confidence of his customers in a blind businessman if they knew that he could identify money himself when necessary. Of course, one should still use a good system of filing currency. Incidentally, blind parents would like to have their own independent means of identifying currency.

3. The third category is reading correspondence, memos, bulletins, newsletters, etc. Handwriting cannot be read with the optophone so far as we

know. It is a great pleasure and very handy to read a typed note from a friend or to read a letter from Mr. Freiberger about reading machines. In order to avail myself of that privilege, I will gladly read a carbon or Thermo-fax copy.

Even those correspondents who do not type may want to locate a typewriter and tap out a private note.

4. The fourth category is reading many bills, checks and bank statements, familiar forms, etc. I learn the layout of my common bills and braille notes about them if necessary. For example, I read and copied the entire form of my machine-printed Earnings and Leave Statement. That was very hard to do, but now I can locate the information I want from subsequent statements in a minute.

Reading bank statements has become very routine. I can either read all the figures from the statement or else read all the checks and only a few figures from the statement. An abacus helps with the necessary calculation.

For many of my bills the cycle is now complete. I read the bill, record it in braille, write the check, read it over and mail it. Then when I receive my cancelled checks and statement, I read and take notes on it.

Here again attitudes toward responsibility and independence play a role. Some blind people pay their bills in person without having them checked. I know a blind person who paid his neighbor's electric bill. Some blind people simply discard all unsealed mail and anything that feels like an ad. If that were the policy at our house, some neighbors would be unhappy because some of their mail is mistakenly left in our mailbox.

5. A fifth use is to identify mail, packaged goods, canned goods, etc. Identification is usually more urgent than reading. I know blind people who will buttonhole everyone who comes to their door to get things read or identified. Return addresses are often easy to read with the optophone. One can read bits of ads and discard them at will. I braille the envelopes of items I have identified. Experience shows us that it is often expedient to censor items which a particular reader would not like to read. This may include religious and political material.

There are several hidden advantages to identifying things oneself. a. The time of a sighted reader may be better used for reading more lengthy materials. b. Items do not need to be moved or carried around too much, so they are easier to keep track of. c. It reduces the urgency of getting mail read and makes for a more flexible schedule.

Recently I have been gratified to find it easy to read canned goods and labels on cartons. I began to read recipes and directions also. Braille and orderliness reduce the amount you need to read. For example, with careful buying and study of features on cans, one needs to read less than one-third of the cans with the machine. Then all of the cans can be labeled (in braille) if desired.

The new Visotoner works much better for this work because much larger print can be read with it. Those big letters on TV dinner cartons and cereal boxes stand right out for the Visotoner. It is also easier to change adjustment for the size of type read, and it is easier to "roll around a can" with the Visotoner. I took the Visotoner into a supermarket and read some labels with it, and I feel that it may become practical to use it in some situations like this. The area of identification is quite new to me. I am looking for suggestions; much more may be possible in this area.

Much of what I have said shows how the optophone complements other skills, namely, braille, typing, and language skills. Orderliness aids in making its use efficient. The same can be said for the use of sighted readers.

6. I use the optophone for all I have mentioned thus far, but there is a sixth category I plan to work on—reference books. Braille is too bulky to permit most people to own a good dictionary or do reference work. The ability to use such texts in a library would be even more important. I have read the print in some of these books but have not tried to look things up as yet. Children's reference books may be a help here. Again the Visotoner, because of its shape, portability, and easy-to-use controls should be a great help. It also has a good feature for reading italicized print. The photocell array can be rotated so that the "slanted" print sounds almost like ordinary print to the ear.

I have also had a brief chance to use the Colineator which is the tracking board developed by Mauch Laboratories of Dayton, Ohio. It is marvelous and very versatile. It should help with reading books. I even enjoyed using it by using the Battelle probe against the bar of the Colineator.

There are other uses for optophones which are as yet inefficient. Nevertheless, some people may want to read magazine articles, case records, and even whole books with the instrument. My plan is to read magazine articles in order to build speed. A new motor-driven pacing aid has been built. We want to see if steady motion of the probe will aid in developing speed. This seems to have been the case for some other learners. Perhaps magazine articles will be very practical.

I made some mistakes which slowed my progress along the way. First, although I enjoyed reading articles and stories, I stopped reading them too soon, so my reading speed did not have a chance to increase. I tell my braille students to read magazines for practice after completing the course, but I did not practice what I preached. The second mistake was that when I first began to use the machine at home, I did not keep it handy enough. The machine should be available to use momentarily. The biggest problem has been the small amount of time I could devote to this work. A small problem has been some difficulty with the equipment.

Many questions are commonly asked of me. How fast do I read? I read from 5 to 25 words per minute depending on contrast, type font, context, and whether or not a tracking board is used.

Some say, "Who wants to read so slowly?" I feel that a number of people would like to do just that. Thousands of people use braille at very slow speeds. They use it for notes, addresses, and labels. Most learners of braille need to read a great deal after learning the skill in order to develop speed. This fact and my experience leads me to believe blind people may want to read some print slowly.

People also ask if it was difficult to learn. It was difficult, but some braille students work harder learning braille than I have had to do in learning the optophone. People also want to know if I have extra ability. I suppose so, but it required extra ability under the circumstances of working alone and experimentally much of the time.

I believe that with a little better optophone and improved teaching methods, this skill will be brought within the reach of many more blind people. I also believe that, like braille, this skill may best be taught by a person who uses the skill. In the case of a new skill like this, it may be even more important. A teacher must listen to the output of the machine part of the time and help the student trouble shoot. In fact, the teachers may need to learn to teach trouble shooting, scanning, and skimming if this is possible. By careful and experienced tutoring, we may be able to reduce the need for tape recordings.

We need to direct students to uses for the skill such as checking their typing at the appropriate time. I have kept samples of various kinds of print encountered in everyday use for this purpose.

We have found in teaching braille that if we introduce new uses for braille at the propitious time, motivation to "struggle on" is greatly enhanced. On the other hand, we can discourage a learner by giving him ill-timed tasks no matter how well the skill is taught.

I also feel that motivation will play a cardinal role in learning this skill, and it would be helpful if students could be promised the use of the machine if they mastered and used the skill. I hope that many a blind typist, professional worker, businessman, and housewife will find this skill of benefit. Home teachers with whom I have spoken were especially enthusiastic when they heard how I used the machine.

Much of what I have said here may apply to other "limited access" reading machines. Though the optophone affords limited access to print, it has made me feel less limited.

I cannot begin to thank everyone who helped me. They include staff members at Hines Hospital and many of you gentlemen here at the Conference.

In summary, I love to use the optophone. The pace is slow, the mileage is improving, but the payload is terrific. I would like very much to teach the skill.