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IS LIP MOVEMENT REALLY SO BAD?

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Few issues concerned with the complex art of teaching reading have remained controversial for as long as the topic of lip movement during silent reading. Educators do not seem to be in agreement concerning this phenomenon which most teachers in the elementary school have observed. Some reading specialists support the theory that lip movement may be an aid to comprehension in the lower grades, but that it may be a deterrent to comprehension in the intermediate grades. Other specialists, who are equally gifted in the diagnosing and handling of reading problems, feel that lip movement is a desirable, developmental learning reinforcement activity and that its elimination should not be prematurely precipitated. What relationship is there, then, between lip movement and reading achievement? Do good readers have a higher incidence or a lower incidence of lip movement than do poor readers? Do boys use lip movement to a greater degree than do girls? Does the difficulty of the material make a difference in the amount of lip movement? Before attempting to answer the above questions, one should consider the findings of research in this area.

The topic of lip movement during silent reading probably did not appear in the psychological literature until some time during the nineteenth century. In the main, these early studies were somewhat introspective in nature; that is they were simply the conclusions drawn from the writers' experiences and theories. Some of these early investigators conducted interviews in which several persons were asked whether they spoke to themselves while thinking and reading. Most of the subjects responded affirmatively. The investigators concluded, therefore, that some kind of lip movement is necessary in silent reading and in thinking.

Around the turn of the century investigators became somewhat more skillful in the gathering of objective evidence. These studies, considered crude according to present-day standards, nevertheless indicated that lip movement is an aid in obtaining meaning from the printed page. However, these findings have not been acceptable to all teachers of reading. There have been those who feel that lip movement is an acquired habit, fed and fostered by teachers in phonics and in oral reading.

Thus, changes in the methods of teaching reading have appeared. The emphasis has been shifted from oral reading to silent reading as a means of diminishing the problem of lip movement. It is felt by many teachers that lip movement impedes reading speed and should, therefore, be eliminated. There arises, then, the problem of determining the proper grade level at which the emphasis on silent reading should begin. If silent reading is to be emphasized at grade four, might it not be better to emphasize it at grade three, or two, or one? These theories were manifest in the introduction in the mid-thirties of the non-oral method of teaching reading, which eliminates oral reading in grades one and two. The new method, however, did not solve the problem of lip movement. It was found that the children who were taught by the new non-oral method had more lip movement during silent reading than should be expected, since the suppression of lip movement was one of the main factors of the new method.

Various explanations have been offered for the failure of the non-oral method to eliminate lip movement. Some writers feel that the teachers who first employed the new method were not sufficiently trained. Others note the failure of the new method to employ the pupil's mastery of oral language as an aid in reading instruction. Still others deny the idea that silent and oral reading are separate processes and object to the disregard of the possible benefits to be derived from oral reading in grades one and two.

In spite of the objections to the non-oral method of teaching reading, few studies of any consequence followed. During the forties there was considerable interest in the non-oral method, but little research was conducted. Perhaps the difficulties involved in measuring lip movement contributed to the lack of significant research in the area. At any rate, it was not until the late fifties and early sixties that adequately controlled studies of lip movement were made.

In order to provide answers to the questions posed earlier, and in an attempt to determine whether or not inhibitory measures should be taken to suppress lip movement accompanying pupils' silent reading, the writer conducted an investigation of the reading habits of average fourth graders, including those with high reading achievement and those with low reading achievement.

In the experimental design used by the investigator to test the hypotheses, the dependent variable was the electric activity recorded from skin-lip electrodes during a routine of reading silently easy and difficult material. The independent variables were: the level of difficulty of the reading selections, the level of reading achievement, and the sex role. Easy material had a readability level about one year below the pupil's reading level; difficult material had a readability level

approximately the same as the pupil's reading level.

The level of reading achievement was determined by the pupil's score on the reading comprehension subtest of the *Iowa Tests of Basic Skills* for grades three to five. Pupils of average intelligence (IQ's of 90 to 110) were given this reading test. Good readers had a reading level at least one year above grade placement. Poor readers had a reading level at least one year below grade placement.

IQ scores for the subjects were in the 90 to 110 range, as determined by the *California Short-Form Test of Mental Maturity* for grades four to eight. This group test appeared to be adequate, since its use was confined to establishing IQ limits.

Fourth grade pupils were chosen for this study for the following reasons: (1) younger children could hardly be expected to have reached the maturational level necessary for the study; and (2) the fourth grade usually marks the beginning of an intensive program of functional and recreational reading activities.

The experiments were conducted in rooms designed for electroencephalography. The instruments were not in the same room as the subject. However, the subject could be kept under continuous observation through one-way glass. Verbal communication was made possible by the use of an intercommunication system.

When the subject had entered the room and had been told something of the nature of the experiment, he was allowed an opportunity to become somewhat accustomed to the testing situation. After the electrodes had been attached, the subject was provided with reading materials at both levels of difficulty, according to his level of reading achievement.

After the subject had completed this practice session, he was allowed to leave the testing room for approximately fifteen to twenty minutes. The second session, on which the major calculations were made, was then conducted. After the subject had again become relatively accustomed to the testing situation, he was presented the new reading materials. The two reading selections, at easy and difficult levels of readability, were randomized in order to eliminate a possible order effect. The subject simply drew a slip of paper on which the numeral 1 or the numeral 2 was written. The numeral 1 corresponded to easy material and the numeral 2 designated difficult material. The numeral which appeared on the slip of paper which the subject drew from a box determined the order in which the selections were read.

The following points constitute the findings of this study:

1. The level of reading achievement showed significant relationship

to the incidence of lip movement. The observed F-value for the level of reading achievement was significant at the .01 level of confidence.

- 2. The difficulty of reading material showed significant relationship to the incidence of lip movement in both good readers and poor readers. The observed *F*-value for the level of difficulty of material was significant at the .05 level of confidence but not at the .01 level.
- 3. The differences in the incidence of lip movement between girls and boys were not statistically significant.

The following limitations were recognized as exerting some effect on the study of its results:

- 1. Only schools for white pupils in middle status neighborhoods were included in this study. If schools representing other social levels had been used, the results might have been different. Pupils from other racial and ethnic groups and those from small towns and rural areas might have affected the results of the study had they been included. The amount of time required for the individual electromyographic tests made it unrealistic to include enough additional pupils to represent these groups for this study.
- 2. The number of fourth grade sections included in the study may be a limiting factor. Although fourteen sections in five elementary schools were included, one cannot be certain that the findings would be the same if more schools in other geographically distributed communities throughout the United States had been used.
- 3. Although teaching materials and curriculum organization were controlled, there was no adequate means of controlling the teacher variable. Varying amounts of time, if any, which teachers spent in attempting to control lip movement in their pupils during silent reading may have affected the results of the study.
- 4. The results of the study might have been different if the pupils had had a longer period of time to become accustomed to the testing situation. The electrodes, though not uncomfortable, may have brought about varying amounts of apprehension in the pupils.
- 5. The reading selections used in the study imposed some limitations. The degree of difficulty and the nature of the subject matter may have favored or handicapped certain pupils.

On the basis of the data presented in this study it is possible to state that lip movement probably occurs during all reading of elementary school pupils, since, in no case did the lip movement "scores" during relaxation exceed the lip movement "scores" during reading. It was further demonstrated that lip movement increased among both good readers and poor readers when the difficulty level of the reading material was raised. One may conclude, then, that the increase in lip movement may be the result of an attempt to read material which is in some way too difficult for the reader. Lip movement may, therefore, be considered a symptom of a reading difficulty, or lip movement may be an aid to the reader when confronted with difficult material.

It would seem that the advisability of direct attempts to eliminate lip movement is somewhat dubious. Lip movement *per se* cannot be viewed as detrimental to reading; rather, it appears to be a symptom of a reader's not being able to grasp the content of a reading selection without difficulties. Nothing in the present study, however, indicates definitely that lip movement actually constitutes an aid toward better reading comprehension.

The foregoing conclusions of this study have pointed up the need for additional research on the subject of lip movement during silent reading. When sufficient evidence regarding the nature and function of lip movement has been made available, problems concerning the methodology of reading instruction as it pertains to lip movement can be attacked purposefully.

There is a need also of the acknowledgment on the part of educational writers that their directives to teachers with respect to the elimination of lip movement are based on unsubstantiated theory and that these directives may represent only a peripheral attack on the fundamental problem of lip movement.