The comparative effectiveness of correlated listening-reading and reading-only comprehension lessons was studied using high school retarded readers with varying sensory modality learning preferences. Over a one-semester period, comparable lessons were taught to two groups matched for IQ, age, reading grade level, and freedom from sensory defects. The difference between the instructional treatments was one of sensory mode of lesson presentation and application— one group was taught using both aural and visual methods and the other, using a visual approach only. The groups used the same materials, were taught the same comprehension skills, and the same teacher taught both groups. Results from a standardized reading test showed that when sensory learning modality preference was not a variable, a correlated listening-reading instructional approach was more effective than a reading-only approach. Specifically, the listening-reading approach was found particularly effective for auditory learners and for students with no sensory modality preference. One conclusion was that of students which is undifferentiated by learning modality preference, an aural-visual teaching approach to reading is more effective than a strictly visual approach. References are included. (AL)
EVALUATION OF CORRELATED LISTENING-READING COMPREHENSION LESSONS

Sequence: Research Reports
Session: Wednesday, April 21, 1971
2:15-3:15 P.M.
The purpose of this study was to compare the effectiveness of a correlated listening-reading sequence of comprehension lessons with a reading-only sequence of comprehension lessons when used with adolescent retarded readers of varying sensory modality learning preferences. Based on the findings of a previous study by the same researcher, it was hypothesized that the adolescent retarded readers who were exposed to correlated listening-reading instruction in comprehension of verbal material would achieve greater growth in reading comprehension than those who were exposed to reading comprehension instruction only. It was further hypothesized that sensory modality learning preference of the adolescent retarded readers would be a factor in the relative effectiveness of the two modes of instruction. Specifically, it was hypothesized that the correlated listening-reading approach would be more effective with audile learners and with pupils displaying neither audile nor visile learning preference than it would be with visile learners, while the reading-only approach would be more effective with visile learners than with audile or non-preference learners.

The rationale for the experimental teaching approach (i.e., the correlated listening-reading approach) was based, first of all, on the concept of reading as thinking. (2), (3), (5), (7) According to this concept, that which will serve to improve thinking should also serve to improve reading comprehension. Since the oral-aural aspects of listening activities lend themselves to facile and wide discussion entailing thinking processes that are also germane to reading, it seems reasonable to assume that the thinking patterns taught and practiced in listening situations should apply to and transfer over to reading activities as well. It is the writer's opinion that because the listening situation lends itself to thoroughgoing discussion and analysis of the thinking
that is going on in responding to the material listened to, and can include both direction for thinking and immediate feedback of the products of thinking by the instructor leading the discussion, instruction in listening makes a logical starting point for the development of the same comprehension skills needed in reading.

The experimental listening-reading approach was based also on evidence regarding sensory modality learning preferences of pupils. Specifically, data disclosed in the literature as well as revealed in previous research conducted by this writer had indicated that, in any group of unselected students, there probably are differences among the individuals in the sensory modality (visual, aural, or neither) preferred or used more effectively in the intake and processing of information. Some may do better with material that is listened to; others may learn better with material that they read; still others may function equally well with either type of presentation of material. Because of this, the teacher who relies on only one mode of lesson presentation may be serving the needs of only some, not all, of his pupils.

Moreover, teaching should make use of the individual's strength and proceed from there so that transfer of training and reinforcement can take place more effectively in the weaker or less preferred modality. Retarded readers, particularly, may lack proficiency in the visual mode of acquiring knowledge and skills, a deficit which may be an important contributing factor to their continued lack of progress under reading instruction programs that are unchanging in their strictly visual approach. With such pupils, it could be of benefit to use the aural avenue to introduce, clarify, and give practice in the skills of comprehension of verbal matter, before requiring them to cope with the reading of similar material. The experimental teaching approach which
used correlated listening instruction as an adjunct to remedial reading instruction was an implementation of this idea.

**Procedures:** Suburban high school students were screened and tested in order to separate out those who met the criteria of the study in regard to age, non-language I.Q., reading grade level, amount of reading retardation, and freedom from sensory defects. Eligible students then were classified according to sensory modality learning preferences (visual, auditory, or no modality preference) on the basis of discrepancy scores between the Reading and Listening Tests of the Sequential Tests of Educational Progress.

Next, a stratified sample of students representing equal numbers of audile, visile, and no modality preference learners were randomly assigned, within sensory modality learning preference categories, to remedial reading instructional programs using different approaches in terms of sense modality emphasis of instruction. Analysis by use of t tests revealed that the groups were comparable as to age, reading grade level, and amount of reading retardation.

Each treatment group met for remedial reading instruction three times weekly, for one semester, for 45-minute periods per session. The experimental group was exposed to a comprehensive program of correlated listening comprehension and reading comprehension lessons. On Mondays and Wednesdays, group lessons in a specific listening comprehension skill were presented. On Fridays, a follow-up lesson in reading, for applying and reinforcing the same comprehension skill to printed materials exclusively, was presented. Pupils worked independently on applying the skill to selected, appropriate, written material in workbooks or textbooks, or to written material that had been prepared duplicated by the investigator.
The control group was exposed to a program of reading comprehension lessons only, lessons designed to develop the same skills of comprehension involving literal understanding, interpretation, and critical evaluation (and their inherent sub-skills) as were covered in the combined aural-visual instruction of the experimental group. On Mondays, the teacher introduced the specific comprehension skill to be taught and clarified its value to the students. Group chalkboard and overhead projector work were done, involving application of the skill to written material thereon. The material used was adopted from material presented orally in the experimental group’s parallel listening lessons. Only sensory mode of lesson presentation and application differed. On Wednesdays, pupils worked as a group with printed material for purposes of reviewing and reinforcing the comprehension skill developed in the preceding lesson. The material used was the same as that used by the experimental group in the parallel listening comprehension lessons. Again, only sensory mode of lesson presentation and application differed. On Fridays, pupils worked independently on applying the skill to written material that was the same as was used on Fridays by the experimental group.

In brief, then, on Mondays and Wednesdays, when the experimental group was taught verbal comprehension skills by an aural approach, the control group was taught the same comprehension skills, using the same content, but by a visual approach. On Fridays, both the experimental and the control groups were taught by the visual approach, with lessons being identical both as to skill applied and materials used. To avoid the possibility of teacher variability affecting the results of the experiment, both groups were taught by the same remedial reading teacher.

At the end of the semester, all pupils who participated in the
investigation were given the California Reading Test, Advanced Level, Form X as a posttest (Form W had been used for the pretest), in order to determine the amount of gain in reading comprehension. These gain scores were analyzed to test the hypotheses of the experiment. A 2 x 3 factorial analysis of variance was computed, using the statistical paradigm below.

STATISTICAL PARADIGM FOR ANALYSIS OF DATA

<table>
<thead>
<tr>
<th>Sensory Modality Learning Preference (B)</th>
<th>Treatments (A)</th>
<th>Combined Aural-Visual (experimental-A₁)</th>
<th>Predominantly Visual (control -A₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditory (B₁)</td>
<td>A₁B₁</td>
<td>A₂B₁</td>
<td></td>
</tr>
<tr>
<td>Visual (B₂)</td>
<td>A₁B₂</td>
<td>A₂B₂</td>
<td></td>
</tr>
<tr>
<td>No Preference (B₃)</td>
<td>A₁B₃</td>
<td>A₂B₃</td>
<td></td>
</tr>
</tbody>
</table>

Results:
To test hypothesis one, the treatment main effect ratio was computed, with the .05 level of significance, in the direction of the experimental group, used as the criterion for confirming the hypothesis. To test hypothesis two, the interaction F ratio was computed and considered for significance at the .05 level. Since the interaction F ratio was found to be significant beyond the prerequisite .05 level, the test for individual mean comparisons was used to test the significance of the differences between the specific cell means. Again, the .05 level was used for significance.

Hypotheses one and two were upheld. Therefore, it was concluded that, when sensory modality learning preference is not considered as a variable, a correlated listening-reading instructional approach is
more effective than a reading-only instructional approach. The teaching procedure which correlated lessons in specific listening comprehension skills with follow-up lessons in the specific parallel reading comprehension skills resulted in significantly greater growth in the reading comprehension of adolescent retarded readers than did the teaching procedure which utilized the conventional, predominantly visual approach and used reading lessons only. In addition, it was concluded that there is a significant inter-active effect between pupils' sensory modality learning preferences and the sense modality emphasis of the teaching approach used with such pupils.

Specifically, the correlated listening-reading approach was more effective in improving the reading comprehension of auditory learners and pupils with no sensory modality learning preference than it was in improving the reading comprehension of visual learners, while the predominantly visual approach was more effective in this regard for visual learners than it was for auditory learners and pupils with no sensory modality learning preference.

Although no hypothesis was made regarding differences in amount of reading growth on the basis of sensory modality learning preference per se, analysis of the data revealed that there were no significant differences among pupils with auditory learning preference, visual learning preference, or no sensory modality learning preference when method of instruction was not taken into account. The mean gain in reading comprehension did not differ significantly from one modality group to another. From this it may be inferred that sensory modality learning preference in itself was not a factor in the reading growth of the adolescent retarded readers in the study sample. Rather, as the statistical analysis of the results have revealed, it was the inter-
action of a particular modality preference with a particular teaching procedure that made a significant difference in the amount of gain in reading comprehension.

A subsidiary, but very vital, observation should be made at this point, namely, that in a typical classroom situation (remedial or regular) pupils are not screened and differentiated according to sensory modality learning preferences. Rather, the teacher usually must cope with her pupils' needs minus this important knowledge about them. Therefore, if the teacher, when working with such an unselected and undifferentiated group of students (i.e., unselected and undifferentiated in respect to their sensory modality learning preferences) utilizes only one mode of lesson presentation, that teacher may very well be serving the needs of only some, not all, of the pupils.

Implications: On the basis of the results of the study, it appears that the oral communication process involved in verbal listening activities has a facilitating effect upon the written communication process involved in reading activities. This finding is in agreement with the findings of other investigators such as Pimsleur and Bonkowski (6) who, in a sensory experiment noted that aural presentations had a facilitating effect upon visual presentations. In view of this, reading specialists and supervisors responsible for remedial programs should attempt to incorporate a combined, correlated aural-visual (listening-reading) instructional approach into the high school remedial reading program, in an effort to provide a more fruitful teaching procedure.

As Miller (4), Westover (8), and this investigator discovered, there are differences among pupils in the sensory modality preferred and used more effectively in the intake and processing of verbal information. In this study, specifically, as well as in a related
previous one, this investigator found that the majority of the adolescent retarded readers in the study samples were the ones with auditory learning preference or no sensory modality learning preference. Students with visual learning preference were in the distinct minority. This suggests that adolescent retarded readers may, as a group, lack definite proficiency or superiority in the visual mode of acquiring knowledge and skills, a deficit that may be an important contributing factor to their continued lack of progress under reading instruction programs that are unchanging in their visual approach.

Whether this relative visual learning ineffectiveness is a cause or a result of reading retardation is a moot question. What is of concern to a high school reading specialist is the fact that there may be differentiation of sensory modality learning preferences among the student with whom he must work and therefore for whom he must provide productive learning experiences.

If possible, it would be best to test one's pupils for determination of individual sensory modality learning preference before beginning a program of remedial reading instruction with them. In this way, the teacher could map out a program that would meet his pupils' learning needs on a differentiated basis in terms of a combined aural-visual or a predominantly visual approach. Pupils then could be taught by the sensory emphasis approach most productive for them.

If the sensory modality learning preferences of the pupils are not known (as very often will be the case in the usual school situation where it is not common to screen for such a variable), the remedial reading teacher should utilize both the aural and the visual modes, in a combined, integrated, correlated, structured manner, in order to servicing his pupils' learning needs. The experimental approach on which this study is based appears to be of value in this regard.
To avoid penalizing the visual learners, additional practice in applying newly-learned reading comprehension skills to written material should be provided. This could take the form of specifically designed and carefully checked homework assignments.

A statement by Dechant seems a fitting conclusion to this paper since it sums up a viewpoint congruent with the findings of this study, Dechant has declared: (1)

In addition to an understanding of the pupil's maturational, experiential, intellectual, neural, physical, social, emotional, motivational, language, and sensory characteristics, knowing the pupil means knowing his preferred mode of learning. Identification of the child's mode of learning may well be the end goal of classroom diagnosis....it would seem reasonable to utilize instructional materials which are congruent with each learner's particular strengths in perception, imagery, and recall.
REFERENCES


(note: These are sources to which specific reference has been made in the body of the paper. The bibliography which was consulted in the course of the actual research is ten pages. It is available upon request.)