DOCUMENT RESUME

ED 090 545 CS 201 188

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TITLE Interrelationships Among the Language Arts.
INSTITUTION National Conference on Research in English.; National Council of Teachers of English, Champaign, Ill.
PUB DATE 54
NOTE 46p.

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Elementary Education; Instructional Materials; *Language Arts; *Language Development; *Language Instruction; *Language Research; Language Skills; *Literature Reviews; Teaching Methods

ABSTRACT

The purpose of this monograph is to collect in one convenient location all of the available research that directly or indirectly touches upon the question of the interrelationships among the language arts, i.e., oral language, written language, reading, and listening. Chapters include "Interrelationships between Written Expression and the Other Language Arts," which analyzes readiness, the stages of development, and functional approaches to writing in the elementary grades; "Interrelationships between Reading and Other Language Arts Areas," which discusses reading readiness, beginning reading, and clues that remedial work is needed; "Interrelationships between Speech and Other Language Arts Areas," which cites evidence showing that writing and speaking are similar forms of communication and that pupils treat them as such; and "Interrelationships between Listening and Other Language Arts Areas," which examines the relationship between listening ability and reading ability, citing evidence that they are highly related, and summarizing the implications. (RB)

National Council of
Teachers of English

Interrelationships Among The Language Arts

Prepared by a Committee of the National
Conference on Research in English

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A Research Bulletin of the
NATIONAL CONFERENCE ON RESEARCH IN ENGLISH

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THE NATIONAL COUNCIL OF TEACHERS OF ENGLISH
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Introduction

A. Sterl Artley[1]

In the days of not-too-long-ago children were taught to spell and write, to speak and read as though each area was completely isolated one from the other. Listening, the fourth wheel of the communications vehicle, because it was thought to be a passive and "natural" act, was not considered of sufficient importance even to be included as a learning area. Consequently, children were taught in separate periods to spell as though there were a content of spelling quite divorced from writing, from spoken vocabulary, and from reading. They were taught to write, unmindful that ideas about which they wrote had to come from somewhere, directly from experience, vicariously through reading or listening. They were taught oral composition as though correct usage and the organization of spoken ideas were distinctly different from those same skills in writing. And as the climax, grammar was taught as though it were a complete end in itself, as though a knowledge of active and passive voice, the predicate nominative and subjunctive mood could somehow improve the effectiveness of speaking and writing. Like pickets in a fence, each language arts area stood by itself.

Definite influences at work over the past two decades have served to draw the communication areas into closer unity. These influences have been subtle, and have been the result of a gradual evolution in both philosophy and practice. Research and the evolution of professional thought in psychology and philosophy, in semantics, and in child growth and development have lent support to the contention that there is an inherent unity among the communications areas. They are not separate pickets in a fence. They are closely related by content and by use, purpose, and development. Each reinforces the other.

The concept of the relatedness of the language arts is by no means a mere academic one. It has far reaching and very concrete implications for curriculum designers and teachers of reading, spelling, and language. If the language arts are tied together through a common base of skills, use, purpose and development, then it stands to reason that there should be a greater integration in their teaching. If in their growth and development, each area receives support from and lends support to each other area, then courses of study should be organized, and reaching techniques and procedures devised so that they will capitalize upon this inherent going-togetherness and thereby facilitate the maximum growth of all language areas. As Townsend writes in her chapter, the language arts program should be modified "in the direction of a language program rather than a skills program" in a given content area.

It is the purpose of this bulletin to bring together in as complete and convenient form as possible all of the available research that directly or indirectly touches upon the question of the interrelationships among the language arts. Four well-known specialists, each in her own interest area—Miss Mildred Dawson in the field of spoken language, Miss Gertrude Hildreth in written expression, Miss Agatha Townsend in reading, and Miss Althea Beery in listening—have given of their time and understanding to this significant task. Each author has attempted to do two things; to summarize the existing research in her particular area, and to show the practical implications of this research to curricular organization and to classroom teaching.

It is the hope of the committee that this bulletin may contribute to changes in thought and practice, and that it may be a ready reference for those who are working in the field.

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Interrelationships between Written Expression and the Other Language Arts

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Every person in his life as a citizen and in his personal relations needs to be competent in written expression, for without this skill he will be handicapped in social communication. The ability to express ideas in writing is also a basic skill for learning. Every child needs to become competent in writing, because his school progress will depend in large part upon his control of written expression. One objective of elementary education is to teach children to express their thoughts and feelings clearly in writing, and to improve each year in the ability to use this skill for purposes that require written expression.

The following sections summarize significant research studies in written language with their implications for classroom teaching. These studies relate to the following topics: language interrelationships, the role of functional learning in acquiring mastery of written language, readiness for written expression, beginnings of written work in the primary grades, handwriting and written expression, needs for written expression above the primary grades, the importance of letter writing in daily life, acquiring improved techniques and good form in writing, creative expression, spelling as a tool for writing. Needed research is indicated at the end of this report.

Interrelationships Among Various Phases of the Language Arts

A number of authorities have pointed out the interrelationships that exist among the language arts: oral and written communication, reading, spelling, and handwriting (5, 28, 45, 48, 59). Writing is ordinarily the last of the common forms of language communication to develop, the skill that is learned later than oral comprehension, speech, or even reading.

Writing depends upon oral language and comprehension, it is associated with skill in reading, and it is related to steady growth in control of the tools of spelling and handwriting. Children learn to write in part from reading correctly written context which illustrates sentence form, syntax, punctuation, diction, and correct spelling (5).

Russell found high intercorrelations among the language skills (48). He advocated considering the teaching of spelling as a phase of general language achievement. Townsend also found substantial correlations between spelling ability and reading, vocabulary and academic aptitude (59).

In view of the relatedness that exists among these different phases of language expression, more integration should be achieved in language instruction in school experiences. Written English, oral expression, reading, spelling, and handwriting can all be taught more meaningfully and economically through capitalizing on the interrelationships that exist among these skills. For bilingual children and slow learners the urgency is particularly great to bind all these skills together in a unified whole through common vocabulary and context.

Developmental Sequences in Written Expression

Studies of child development have disclosed new evidence concerning the se-

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quential stages through which children pass in achieving mastery of written expression. This skill like oral language is achieved through developmental learning. Learning to express ideas in writing is rooted in the total pattern of each child's growth. There is a considerable period of time in early child life that is preparatory to learning to write. Following this readiness period, there is a succession of stages through which all children pass in gaining facility in writing the mother tongue (38, 63, 54, 55).

The suggestion from these findings is that teachers need to understand the significance of developmental stages in linguistic expression so that they can relate classroom instruction year by year to the child's maturing capacities for learning to write. Otherwise instruction and child development may be at cross purposes. If this suggestion were followed, fewer teachers would stress precision and formalities in written expression ahead of freedom of expression and interest in writing something for others to read.

A Functional Approach in Written Expression

The newer approach in teaching pupils to write in contrast to traditional methods is a functional one—language is considered a tool for use in life activities rather than a separate school subject. Needs and opportunities for writing pervade the entire curriculum. Pupils learn to write as needs for written expression arise, and they continue to develop skill in written expression while using it to solve problems requiring writing. The result is that learning is more meaningful; at the same time, more naturalness of expression is achieved.

The accent in good teaching is placed on learning through experience in contrast to formal drill on isolated exercises; teaching written expression not as a separate school subject but as a tool to be used for school and life activities. Instead of teaching written language as an isolated subject it is tied in with all the other phases of language expression, and these in turn are related to the child's total school program and his life experiences as a whole. The teacher capitalizes on all the natural opportunities child life affords for real writing because skill in writing improves when there is something that needs to be written. The best writing is done in schools where the best thinking and problem solving goes on. Children are motivated to write better when the object is to publish the material in the school magazine, to mail a letter to a real person, to participate in an assembly program by reading a script, etc. (50, 51, 52, 53).

Strickland has described the many situations which lead to written expression (54). Learning to write depends upon a rich experiental background, according to modern authorities. Richer living at school provides a better background for learning to express ideas in writing (53,54).

Readiness for Written Expression

The readiness concept so long appreciated in reading applies equally well to written expression. As in the case of reading, instruction in written language at school may have little value unless the children show readiness for it in terms of mental and linguistic maturity. Some children are ready to profit from beginning experiences and from systematic practice in context writing ahead of others.

Readiness for written expression assumes good oral language, correct speech habits, ability to relate ideas, as well as interest in communicating ideas. Knowing that words stand for ideas and meanings is the first step in readiness. Teachers are advised not to do work in written language with their pupils until oral language is sufficiently mature as shown by the child's ability to talk in correctly phrased sentences (14, 30, 54).

The child who is ready for written expression shows readiness in terms of psychomotor and physical skills such as eye-hand control, muscular coordination, speech development; mental powers which imply that the child has ideas to express and capacity to learn through practice; environmental background that has afforded opportunities to observe others make use of writing and that provides the child with occasions which stimulate him to write for himself.

Telling and retelling stories gives the beginner practice in sentence structure and acquaintance with the sequence of ideas for writing. Children also obtain good experience with correct sentence form in their reading lessons.

Beginnings of Written Language

In the primary grades the chief use of language is oral but this does not preclude the beginning of written expression which grows out of the need to write or some purpose the child has for communicating with attempts at writing the things he knows and understands.

According to Dawson (14), young children may have the following purposes in writing:

1. To communicate news or messages to people away
2. To make records of plans and events
3. To express thoughts and emotions creatively

After oral language habits are well-established the children are ready to begin writing through a combination of oral and written work.

The modern practice is to teach language through experience units which provide real occasions for writing brief notes, simple descriptions, or reports. The theme may be "The Postman" with a post office in the classroom. First there is group composition, with the teacher doing the actual writing as the children observe the writing being done. This is the child's first participation in the making of written records. In this beginning stage the teacher assumes responsibility for correct language form and spelling, even for the handwriting task in recording ideas. Composing the experience story is an intermediate step in learning to write (10, 11, 14, 32, 35, 37, 39, 54). The sight of the teacher writing, understanding the reason for it as well as the value of it, motivates the children to want to write also. Observing the teacher writing gives the child a correct pattern to imitate. He sees what it means to write something that can be read by others. The child's next step is copying the group composition, and finally, writing independently.

Young children derive great satisfaction from writing their own stories, first copying from the board, reading them over, illustrating them and taking them home. They get simple writing practice in labeling their drawings.

The Maury School bulletin shows the close relation that is maintained in primary teaching between reading and writing (39).

Stages in the Development of Written Language

Several authorities have outlined the stages through which children progress in learning to write (14, 54). These are:

1. Free oral expression relating to school life and home life events.
2. The teacher records these expressions on chart or board in script text. The children read the sentences.
3. The children learn to spell some of the words. They are called on to help write the text.
4. Children copy the text from the board into their notebooks.
5. The children show more independence in writing for themselves, but still need considerable help from the

teacher who gives help and guidance as needed while the children are writing.

6. The children's writing is now largely independent. They use reference sources to help with spelling and word meanings.

The wise teacher knows how to pace instruction for each of these successive stages. There is no point in hastening through any one of them ahead of each new step in readiness. With good teaching, pupil is soon ready to abandon copying for independent writing, but he still needs much help and guidance. A good illustration of teacher guidance in a free writing experiment has been described by Gunderson (26). By the end of the second grade all the children in a typical class should have gained some degree of ability to write independently, though they will not all have attained the same standard of quality (14). A mature eight-year-old may be asked to report on a topic such as "Milk." He selects a simple pamphlet on this topic, takes notes, and then gives a report to the class. He may be interested in doing some creative writing (36).

New language workbooks that have been published during the past fifteen years combine the primary child's work in speaking, reading, writing and spelling. Among the publishers of these materials are Scott, Foreman & Company, Chicago; Educational Publishers, Minneapolis; Lyons and Carnahan, New York.

Picture stories which aid oral communication also provide a basis for written work.

Beginnings in Matters of Form

Dictated context, written down by the teacher in early stages of written expression is used for lessons in sentence formation, punctuation, and spelling. Even second graders gain reasonable knowledge of capitalization and punctuation as the teacher points out these features in sentences. The pupils soon recognize that no sentences are well-dressed without them.

Teachers of primary grade children are advised not to overstress matters of form. In working to improve written form with young children work at only one thing at a time, e.g. capital letter for beginning each sentence or the period, then both together. By the end of Grade 2 the child should know the use of the period and question mark, and should have formed the habit of capitalizing "I" (11, 14).

Writing and Reading in the Primary Grades

Manuscript writing used by the teacher for preparation of script text, charts, and writing at the board provides an integrating link among the language skills of reading, writing, spelling, and handwriting (32). When the writing is all done in print script style both by teachers and pupils, it ties in with reading lessons.

Handwriting and the Beginning of Written Expression

It stands to reason that skill in handwriting and spelling is needed to gain independence in writing. These skills are gained from the first experiences in copying the teacher's recording of group compositions. The use of manuscript writing in the lower grades facilitates earlier attainment of ability in written expression because it is so easy to learn. With the simpler manuscript writing styles, written composition can be begun earlier and carried on more successfully because sentences written in manuscript are easier to copy and the manuscript forms are easier to hold in mind when the child tries to compose independently.

Manuscript writing can be an aid or not in composition depending upon how it is taught. If stress is on copying functional

writing and whole, meaningful words, there is more relation between handwriting and composition than when writing begins with circles, lines, or separate letter forms (31, 32, 42).

Spelling and Written Composition

Within recent years list spelling, that is, the learning of isolated words in blocks or column has given way to integrated spelling —learning the commonest words that are actually needed in writing something and learning to spell through actual practice in recording ideas on paper. This change is due to the growing recognition that the words children learn in isolation are not spelled correctly when they are needed in writing, and the words they often need in writing have not been learned in the drill on words in isolated lists. Superior results were reported when spelling was linked with writing developed in social studies units (61). Current practice favors building up class lists of needed words and individual pupil lists.

Children are encouraged to try out spelling for themselves, then to try to appraise their own effort. They look up doubtful words in a simple list to check accuracy of the spelling (9, 29, 31, 41, 49, 58).

More attention is being given to frequency counts of words used in writing as a basis for constructing spelling lists. The ultimate purpose of these studies is to construct spelling word lists that have a closer relation to children's needs in writing in contrast to conventional lists that give undue weight to rarely used words of adult formal writing (19, 20, 22, 27, 40, 47).

The two reports made by Betts of word counts in commercial spellers and standard graded spelling lists prove that there is no substantial agreement among spellers as to the words to be included in the total elementary school spelling vocabulary or in the grade placement of these words (6, 7).

A small proportion of words in our total language vocabulary do a large part of the work of communicating ideas. The vast proportion of words in the dictionary seldom get a workout. Fitzgerald has described the use of a core vocabulary and a basic life spelling vocabulary (19). Hildreth has reported the construction of an elementary school spelling vocabulary based on Rinsland's word frequency study (29, 32).

Improvement of Written Expression in the Upper Grades

In order to advance in written expression in the middle and upper grades, authorities recommend, as in the primary years, that the children have something real to write about (53). All writing should be related to children's purposing. Improvement comes about through practice of functional writing in both primary and higher grades. Dora V. Smith pointed out the dangers of language work as exercise-doing isolated from the child's real purposes for writing. She urged that special care be taken to insure a rich program of well-motivated enterprises in which language is needed as a tool, so that there can be continual development of meaning and a challenge to social purposing (51, 52, 53). Theme writing is being eliminated in favor of a wider range of writing for functional purposes.

As the upper grades are reached, formal and informal writing begin to digress more widely than before. However, brief and direct expression is in vogue; consequently, children are taught to express themselves in natural, easily intelligible, readable style in contrast to the former stilted expressions that have been perpetuated in formal theme writing in English classes. "Shirt sleeve" English is a form of written expression that is closer to our spoken language.

The Place of Letter Writing in Modern Teaching

All authorities agree that since letter writ-

ing is the commonest form of written expression most people use, it should receive major attention in classroom instruction (12, 15, 32, 42, 54, 56).

In letter writing the children learn points of etiquette in social and business correspondence, what to say, how to say what one wishes to say, what writing materials to use, standards to be met. By the end of the 4th grade the child should know correct form in letter writing (11).

Creative and Imaginative Expression in Writing

The claims of practical writing must take precedence in school instruction over creative efforts in written expression. Now that there is a closer tie up among all phases of life both in and out of school with instruction in written expression, practicing writing as a form of self-expression assumes a larger place in childhood experience and in school instruction. Creative expression in any art form reveals the child's personality, his originality, his individuality. One purpose in encouraging free expression in writing is to give children outlets for feeling, spontaneous creativity with ideas expressed in words in a medium available to everyone. The child's stored up ideas become the chief source of creative writing effort.

Creative expression in writing can be done in every phase of school learning, in every area of study--science, social studies, literature, dramatics, even health and safety. The best writing is coming from the schools where the most free writing is done, where children are encouraged to put their original ideas on paper (1, 13, 16, 17, 32, 36, 54, 57, 64).

Attention to Correct Form in Written Expression above the Primary Grades

Correct form is essential in writing, otherwise the material is hard to read and interpret. The situation is different from oral usage in which the sound of the voice and the speaker's facial expression help to convey the intended meaning. For this reason higher standards must be maintained in written than in oral expression.

The technical skills of written composition which include correct usage in sentence structure, diction, clarity of ideas, punctuation, capitalization, diction, spelling, functional grammar, manuscript form, all need to be made automatic so that the writer's full attention can be given to the meaning back of what he is trying to express. Fluency and accuracy go together. The child who knows good form goes ahead writing with more confidence.

By the end of the 4th grade the pupils should be accustomed to putting a period after abbreviations and should be familiar with capitalization of words frequently used that require a capital.

Since our language is in a fluid state, not static but ever changing, standards of correct usage are always subject to modification. There can be no absolute, inflexible standards that endure for all time. Teachers must allow for this fact in evaluating children's work.

Research studies favor the learning of correct form in functional written expression, grammar, punctuation, rather than through rote memorization of rules (42). Upper grade composition work integrates diction, vocabulary, and grammatical usage in the course of purposeful writing.

The pupils may review their compositions flashed on the board by means of an opaque projector. This becomes a socialized experience as the children read together to see good and poor features of the compositions.

Enriched vocabulary is a factor in improved writing. Increase in vocabulary comes from wide range experiences that require verbal expression. Teaching the use

of the dictionary is recommended to facilitate expression and to build word power (60).

Automatic fluency in handwriting facilitates putting down thoughts on paper, in the upper grades as in the earlier years. The writer is free to think of ideas he wishes to express instead of being distracted by mechanics of the writing process.

Modern Viewpoint Concerning the Teaching of Grammar

Modern authorities advocate teaching grammar and correct usage not by rule, but in association with functional speech and writing. In a comparison study, Smith reported finding no difference between schools teaching and those not teaching formal grammar (53). Greene, too, found that training in formal grammar did not transfer to any significant extent to writing or to recognizing correct English (25). These findings bear out the results of numerous studies that have been conducted for nearly half a century. The authorities recommend that teachers avoid teaching diagramming and grammatical rules.

Needed Research

The validation of the newer trends in teaching written expression awaits more extensive research in a number of areas. Some of the problems which merit further study are outlined in this section.

Relatively little research has been done on the best methods of developing the child's powers of communication in actual situations requiring written communication. More valid and reliable comparative studies are needed of separate and integrated teaching.

The relation between oral and written language throughout the elementary school years needs further study.

The extent of incidental learning in all phases of written expression when the child is engaged in purposeful writing relative to school and life activities should be investigated.

What are the best ways to stimulate children's efforts in creative writing?

Do all children need a regular daily drill period?

There is need of research on the following topics having a bearing on the spelling vocabulary:

The words children and adults use when they write. Computation of the overlap between children's and adults' word usage in informal types of writing. Study of word usage in adult informal and formal writing.

The average spelling vocabularies of children at representative age levels (e.g. 9, 12, 15).

The range in spelling skill to be found in typical school children at different age levels.

The values of proof reading and how best to develop children's skill in proof reading.

Other problems relate to:

Individualized instruction in written expression. How is this to be achieved?

Better methods of diagnosing weaknesses and helping children overcome them.

The best techniques for helping slow learners with written expression.

The place of textbooks and workbooks in written language instruction.

Methods for the appraisal of written English throughout the grades.

The validity and reliability of existing techniques for appraising outcomes in written expression.

The construction of new methods for evaluating outcomes in written work.

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Interrelationships between Reading and Other Language Arts Areas

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When the teacher starts pre-reading activities in the kindergarten or first grade, one of the first major changes occurs in the language development of the child. Prior to

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this time parents and the other people surrounding the young child have given more or less systematic attention to the development of his vocabulary for listening and of his word knowledge and usage habits for speech production. He has been under some pressure to make his oral speech understandable to others, though of course the ability to do so fully, both from the point of view of enunciation and language use, will vary a good deal from one child to another. But much of this training has been incidental. The purposeful introduction of experiences designed to prepare him for direct dealings with written symbolization is a large step.

The fact that the pupil learns to recognize and interpret visual symbols before he learns to reproduce them in writing also brings about a great cleavage in his verbal development. Because transmitting the skills of reading and writing is such an extremely important objective in elementary schooling, and because both skills involve difficulties specific to the field, it is not surprising that much teaching becomes somewhat compartmentalized. To many people it would seem apparent that drill on the many tasks involved in reading and writing is more efficient if it is directed to specific ends, such as learning the spelling of a list of "demons" or applying phonetic analysis to new words encountered.

Preoccupation with individual tasks, however, frequently results in ignoring the whole area of which the task is only a part. Alert teachers have always tried to keep in mind the whole concept of "reading" when teaching one method of acquiring vocabulary, or the whole idea of "writing" as a form of communication while teaching spelling. But measurement of the results of instruction has usually revealed considerable differences in the functional effectiveness of pupils in such fields as reading, spelling, usage, and spoken or written expression. This occurs even though all these represent aspects of what, in dealing with the individual as a whole person, we regard as his general language facility. As often happens, it is when we ask ourselves why such variations exist that we realize it is desirable to go back and take a look at the kind of teaching which has contributed to the unevenness of the results.

Some theoretical background is necessary if teachers and others setting up language programs are to change methods so long in vogue. If people are to teach differently, they must first of all *think* differently about their subject matter and the pupils they instructing. For the last ten years or so, journal articles and a few more extensive publications have begun to provide the required theoretical basis for the modification of this part of elementary school training in the direction of a language program rather than a skills program. Buckingham (11) published in 1940 an article suggesting that many pupils who seem deficient in reading are actually deficient in language ability, and that attention should be given to reading and the whole task of learning the symbolism of communication. In the following year, the *Elementary English Review* published Anderson's "Principles of Growth and Maturity in Language" (3).

The Chicago reading conference reported by Gray (29) in 1944 provided the occasion for a total of forty-four papers relating reading to all other forms of communication. Topics ranged from a consideration of personality factors in reading deficiency to the place of the language arts clinic. These papers represented, naturally, the thoughts of many workers in the field, and much of the synthesis of the many points had to be performed by the reader. Subsequently, articles appeared which sought to describe the language arts as a

functional whole and to express the relationships which exist among the different parts which are present in usual organization of school work. Hildreth (37), in an article which has been influential in the direction of much later study, reviewed data on the interdependence of reading and language. She discussed trends toward unification in curriculum and teaching, and included a valuable chart showing the interrelationships of learning by way of reading, listening, speaking, and writing. The stress was on pupil learning, rather than on the name under which the learning was classified. Research supporting theories of interrelationships was summarized by Artley (5) in 1950. One among several more recent reports is an article by Betts (7) giving particular attention to the place of reading development in the measurement and development of language as a most comprehensive part of pupil growth.

The purpose of this part of the current report is to follow up the review of research in reading as one of the language factors and to seek for suggestions to the teacher on the planning of a reading program which will take account of the findings. Help is already available for classes from the kindergarten to the college level. But special emphasis will naturally be given to aids for starting the combined program in the right direction and avoiding difficulties in the elementary grades which might hinder full realization of the program in all years of the school.

Reading readiness and beginning reading

As the first part of this discussion has suggested, initial school instruction may well break in on the general language development of the pupil because special preparation for reading has a more specific purpose than previous training has had. The specialized aims of the activities, however, should not make the program narrow. As Traxler and Seder (77) pointed out in reviewing research done more than ten years ago, there is evidence that readiness for reading depends on a wide variety of factors. Kopel (45) has summarized these as including intelligence, performance in informal pre-reading, health and physical development, emotional and social growth, language usage, and, as a major factor, general breadth of experience. The child with a narrow background of actual and vicarious experience has little stimulation for language growth; he has little to communicate. His vocabulary level is consistent with his needs, and since his needs for language are simple, he has yet to be faced with the reason for learning more and more words.

It is logical and necessary, then, that preparatory activities for the immature pupil should be rich and varied, for the sake of assuring general language growth. But they must also take into account special aspects of reading as a visual exercise. Correct eye movements, such as the basic pattern of going from left to right, are covered in a report by Johnson (42) of a Chicago readiness program. According to Murphy and Junkins (53), the ability to make visual discriminations of word elements directly affects learning rate in first grade reading. While visual elements seem to be most directly related to reading readiness, another factor mentioned by the same authors as vital for reading bears on other language arts. Notably, they identify auditory discrimination as an important requirement. Further study of the possible interrelations of hearing acuity with both speech production and reading performance has been reported by Rossignol (60). This research covers the second half of Grade 1 and both the first and second semesters of Grade 2, and suggests that hearing acuity often does

not reach its maximum until after reading instruction has begun. As it was also found that hearing acuity has more bearing on ability to reproduce sounds in unfamiliar words than on ability to reproduce familiar words, the study has important implications for the classroom. On the whole, the teacher will find more suggestions for interrelating work in reading with work in vocabulary building, writing, and spelling, than for relating such work to activity in speech production and listening.

Among the earlier studies dealing with word recognition, phonetic analysis, and writing, is a study by Wilson and Flemming (80). This reveals a close correlation between the acquisition of these skills and progress in kindergarten and primary-grade reading. Examples of experimentation in the mechanics of writing as related to reading achievement are studies by Long and Mayer (48) and by Houston (40). The former study deals with printing versus cursive writing, the latter with manuscript writing. The findings suggest that handwritten forms which are more like printed text than are cursive letter forms aid in the ability of pupils to read what they have written and what is presented in books, as well.

There seems to be a real need for further research on the close relationship between reading and writing which is vital for a language arts program. In actual practice, individual and group writing of stories, poems, and reports of class activities is often tied closely to the vocabulary and content of reading books. Materials produced by the children become, in turn, reading materials. But much of the reporting of such classroom projects is purely descriptive in nature, and it would be highly desirable if more carefully controlled studies could be undertaken. There is, as yet, relatively little research which relates such factors as growth in language usage, reading, and the creative aspects of writing.

As an area of writing, the relation of spelling to reading has received considerable attention in literature on the intermediate grades. There is at least one study on spelling readiness, reported by Russell (63). The results of his research relate work in phonics to progress in beginning spelling.

Reading and English

As soon as the reading skills of pupils pass the lowest levels, reading takes its place as the chief method of securing information beyond that coming from the direct experience and observation of the child. Reading is called into use in virtually every subject of the elementary school, and the acquisition of special skills or techniques for reading and studying in each area occupies much of the time of both teacher and pupil. But reading in connection with the other language arts takes on special significance. In this relationship the emphasis is on reading as one form of communication; true, it is one of the receiving forms, but as Clarence T. Gray (26) has pointed out, one of the aims of instruction is to help the pupil read creatively. The relation of reading ability to personal development, says this author, extends to the total adjustment of the pupil.

English teaching in which the relations of reading to interests, with use of pupil-composed materials as reading sources has been described by both Collyer (14) and Hovious (41). Appreciations as well as skills are also included in a report by Riefling (58). It is interesting to note that these discussions, like that of Thurston (72), describe work with slow-moving classes at the beginning of the high school. Watts (79) also treated combined reading and

English programs in her survey of the language needs of pupils in vocational courses in high school. Her study is in line with the stress on developmental reading in the secondary school. Since such teaching usually devolves on the English department, the situation is not unlike that of the elementary school, and helpful suggestions for the upper grades can be gleaned from these reports. Betts (8) in a report on the intermediate grades also covers interest factors in addition to such elements as word perception and visual and auditory acuity.

A few papers may serve to illustrate findings concerning the measurable relationship of reading achievement to some of the more traditional sections of English as subject-matter. Gibbons (21) used diagnostic tests of reading with third grade pupils and related the results to status in language skills. She mentions the ability of pupils to understand the structure of sentences—such as the use of the prepositions and conjunctions—as closely associated with reading level, so that lack of knowledge proves to be a handicap in reading. Townsend (74) in a study of pupils in independent elementary schools compared reading and English scores on achievement tests when the effect of intelligence is held constant. Her findings agreed with those of Traxler (76) who studied private secondary school pupils, in showing fairly close correlation between reading and English scores. Since Traxler's study covered scores in English expression as measured by the Cooperative English Test B: Effectiveness of Expression, the author felt it might be well to investigate the relation of reading test results through scores in mechanics of English. In a study undertaken for the purposes of the current report, she found a correlation of .64 for the results of tests given to 213 tenth grade independent school boys. Since the four private schools whose groups were studied are all relatively selective in admissions policy, so far as both intelligence and verbal ability are concerned, it is especially interesting so find that level of facility in a composite measure of usage, punctuation and capitalization, and spelling, is so closely associated with reading level. These reports seem to give further evidence of the importance of considering both reading and other language skills in teaching at all grade levels. It is not only in beginning reading that such interrelations are significant.

Spelling, as noted above, has received some attention as an element associated with reading instruction at the primary levels. Articles carrying these researches forward into higher grades are also available for reference. Hildreth (39) presented information regarding the words in the pupil's writing vocabulary and frequency counts of the words used in both writing and reading. A study of Grades 3, 4, and 5 reported by Russell (65) stressed the need for a coordinated attack on problems of reading and spelling. Among other steps, his recommendations include spelling instruction which develops concepts of word meaning. Townsend's (73) correlations of spelling scores with academic aptitude and reading in Grades 3 through 12 show fairly close relation of spelling with both comprehension and word meaning skills. Some of the findings for the higher grades are correlations of greater size than those reported by other students of the problem. A good many years ago, however, Gilbert (22) pointed out that some effects of reading on spelling may be felt without conscious purpose on the part of teacher and pupil. He observed that pupils tend to improve their spelling through reading even when their attention is not directed toward spelling, though he did not suggest that spelling instruction be abandoned because of this!

Reading—looking, listening, and speaking

With the coming of television as an invention touching the lives of many pupils, the communications skills certainly must include "viewing" along with reading and listening as receptive activities. In most reading research, however, the study of visual factors has emphasized such aspects of the topic as line length and type size, paper, and illumination. As such studies are generally specifically aimed at silent reading activities, they do not come within the scope of this article. However, attention should be given to a limited number of reports dealing with visual functioning as this relates to both reading and other language activities.

Russell (64) warned that the relation of visual difficulties to reading may not be a oneway proposition. He suggested that certain reading difficulties may *cause* visual defects, and pointed out implications of his findings for growth in spelling as well as reading. Phelan (56) studied visual perception along with variables including cognition and rote and logical memory, as related to both reading and spelling. She established some important distinctions between vision and perception. Memory span for visual and auditory activities was measured by Rizzo (59) who studied a group of wide grade range. While levels in these activities favored good readers consistently, the relationship was closer for younger than for older children, a finding which suggests that memory span in both areas should be taken into account in the lower grades. These studies seem to have special pertinence for the classroom teacher, since the diagnosis is not limited to remedial cases.

The last reference cited introduces the area of auditory skills and their relation to reading. An important study of Larsen and Feder (47) sought to determine the common and differential factors in reading and hearing comprehension. They concluded that there is a reliable tendency for scores in reading comprehension to be higher than those for listening comprehension with material of comparable difficulty. However, less superiority of reading over listening is found for those of low scholastic aptitude. Some students cited inability to concentrate on oral presentations as a factor in their comprehension. Burton (13) also found differences between reading and listening comprehension which favored reading. Her study was limited to the use of vocabulary materials. There is undoubtedly an urgent need for further studies of this type which will compare the two sorts of activities on carefully defined factors. Such studies are an absolute requirement if one is to attempt a scientific judgment on the effectiveness of such teaching devices as audio-visual aids. Another study, with a limited scope making possible a well controlled situation, was reported by Dearborn, Johnston, and Carmichael (15). The authors presented correlations between words emphasized in the context of oral reading and results on a written comprehension test based on the same material.

A further attack on the problems of educational measurement in this area was made by Ewers (18) who discussed the methods used in an exploratory study attempting to relate reading disabilities to auditory difficulties. Spache (70) has produced a very interesting report of the construction and validation of an auditory comprehension test. The tests are expected to indicate both present status and potential reading skill, since the author feels that where auditory comprehension is relatively high there should be an opportunity to improve silent reading abilities. Reference should also be made to the auditory comprehension test (Section II, Part 2) of the Diagnostic Read-

ing Tests. The availability of such tests should facilitate research and better measurement than we now have of precise relationships between reading and listening.

Much of the material relating abilities in reading to those in speaking are drawn from research on remedial cases. These will be reviewed in the next section of this summary. However, two studies are broad enough in scope to warrant inclusion in this part of the review which deals primarily with developmental programs. Bond (10), in studying the auditory and speech characteristics of poor readers, also studied the status of good readers in the second and third grades. He found significant differences between good and poor readers in auditory acuity, auditory discrimination, and auditory perception. In a study limited to speech defects, Moss (52) reported on the relation of speech difficulties to oral reading. She pointed out that the correlations between degree of speech difficulty and reading difficulty were relatively slight. In her study, many reading defects were traced to faulty habits rather than to physical handicaps.

Those wishing to follow up the reference made above to audio-visual aids may want to consult published studies which have specific relation to the language program. Anderson and Dearborn (2), and H. A. Gray (27) has discussed the use of sound films in beginning language skills work. These studies illustrate methods of using sound films to combine the pupil's spoken vocabulary with his learning of written language, and also deal with the enrichment of experience and with motivations in learning. Adams (1) suggests audio-visual aids for use in the teaching of skills and appreciations in all areas of writing, speaking, and listening. The sources of such aids are listed.

Certainly, anyone seeking to build a rich language program should be encouraged to use material of all kinds and to emphasize those drawing on several, rather than just one of the language arts. However, a renewed plea must be made for an extremely careful study of the real effectiveness of such aids as films, recordings, and television broadcasts. Perhaps a sobering note should be introduced, not to temper enthusiasm, but to make sure that the language arts teacher knows as precisely as possible what kinds of effects can be anticipated and what limitations, if any, exist on the usefulness of such media. Rulon and others (61, 62) have reported a carefully controlled statistical study comparing phonographic recordings with printed material. The two articles cited are particularly useful since they treat both knowledge gained through the use of the materials in a teaching unit and also compare the methods for motivation to further study. Without implying that phonographic recordings have no valid uses, the authors conclude that they are not necessarily superior to printed material in giving information to students. Moreover, this experiment revealed no differences between this presentation and printed material in motivating the pupil to further work. One may argue about the applicability of the findings to other situations, and it is important that other experiments continue. However, this study may stand as a model for the careful, scientific control of the many factors characteristic of reading and listening situations.

Reading and language for older groups

While the focus of attention for this report is naturally on teaching in the elementary grades, one should not overlook the fact that further justification for combined language programs will be found if it can be shown that the relationships among the language and expression forms are important for all age levels. The assumption that

this is the case seems to be borne out by a number of studies dealing with college and adult reading. In addition to furnishing a useful amplification of the theoretical basis for interrelated language work, some of these studies also provide clues to methods which may be applied with younger pupils, as well.

In an experimental study reported by Eurich (17), vocabulary drills, discussions, and the study of English composition were employed for the improvement of the reading abilities of college students. The study also indicated that improvement attributable to training persists after the end of the training. Mathews, Larsen, and Butler (50) also made an experimental investigation of reading training and its relation to performance in a college composition class. Statistical evidence for the relationship of scores in reading and scores on essay-writing tests was furnished by Peixotto (55). The entering college freshman girls studied had closely related reading and verbal aptitude results, while both measures were also related to composition abilities. The use of a reading test as a placement test for college English was also supported in research by Held (33).

In another investigation at the college level, Arnold (4) examined the methods of study in the field of history. Both reading and such writing techniques as outlining and précis writing were included as variables in the study. The author secured evidence that the most effective methods of study might differ considerably from one individual to another, and that account should be taken of these personal variations in suggesting study methods to classes.

Three other studies with older students deal with reading and listening comprehension. Krawiec (46) compared the efficiency of learning and the retention of material presented visually and on phonograph disks. In this carefully controlled experiment, the visual mode of presentation proved to be somewhat superior for immediate recall of both nonsense syllables and nouns. Neither method was consistently superior for the retention of the materials so learned. Goldstein (25), using films and phonograph records, measured reading and listening comprehension at controlled rates for adults. His findings also indicate that reading and listening abilities are highly correlated. In the third study, with college students, Hall and Cushing (30) compared three methods of presentation—film, lecture, and reading. Again, the results do not suggest that any one of the methods is significantly more or less effective. However, the authors observed that the results of the various methods differed in kind, thus providing some further confirmation of the desirability of using all possible approaches to take advantage of this fact.

Clues for remedial work

Undoubtedly, much progress in the field of the language arts can be traced to the keen interest in remedial reading and language which has characterized the period of the last twenty years. Even though today we seem to be in a time when emphasis is swinging toward developmental reading programs and toward a very healthy urgency to develop the reading skills of all pupils to the highest possible level, no language arts teacher can afford to ignore the contribution made by research in remedial reading. Our concern here need not be so much with agreeing or disagreeing with this or that school of thought regarding the origin of specific reading or language disabilities. It is important, however, that we test out the findings of remedial studies with ordinary class groups and take advantage of whatever techniques stand up under the rigor of that appraisal.

It is clear that the very character of the

usual reading difficulty practically forces the attention of the teacher to the performance of the pupil in other communications skills. One of the earlier books in this area, which has influenced at least a score of well known remedial reading projects, is *Reading, Writing, and Speech Problems in Children*, published by Orton (54) in 1937. This book, and further studies along the same line stress the importance of such factors as laterality—that is, handedness, eyedness, and so on—and its possible or probable relations to difficulties in learning to speak, read, and write. Fagan (19) has contributed to the literature a case study describing a pupil with mixed dominance and his difficulties in reading, spelling, and other language activities. Gillingham (23), and Gillingham and Stillman (24) have reported on similar cases, with much stress on the restraining program resulting from the application of Orton's theories. Selzer (68) treated lateral dominance and its relation to visual fusion, and again discussed the application of difficulties in these areas to language.

Probably speech defects, in their relation to reading difficulties, have received more attention than anomalies in vision and hearing. Hildreth (38) has contributed a valuable review of the results of objective studies and expert opinion concerning the relation of speech difficulty to reading disability, and she has outlined diagnostic and remedial procedures for use with pupils having such defects. Eames (16) also reviewed investigations; his conclusion that in many cases speaking and reading troubles are likely to arise from a common cause seems to be consistent with the trend of opinion in most recent studies. Gaines (20) wrote in the same field and made a significant plea for careful reporting of individual investigations, and stressed the need for defining and standardizing some of the terminology used with speech and reading difficulties.

Studies of the relation of reading to listening have revealed that the school program should give attention to two types of pupils in this regard. Schmidt (66, 67) has discussed the pupil who learns more readily from auditory presentation than from purely visual presentation of material. Her reports may be considered typical of those citing marked gains for children showing auditory preferences when their subject matter was presented to take account of those abilities. In such instances, the teacher can capitalize on a preference for listening. On the other hand, Koehler (44) has written on pupils who are poor in auditory memory and discrimination for spoken language sounds. Many of the remedial techniques which he suggests may be applied to the average classroom.

Reports suggesting materials and procedures for a combined attack on remedial reading and language difficulties have emphasized the preparation of appropriate materials for such classes and the organization of the remedial program in the school. Reports of both types should be helpful for the teacher or supervisor concerned with developmental reading, as well. Spache (69) has developed a useful guide to vocabulary lists for both reading and spelling remediation. Hansburg (31) reports on the experimental use of the print shop in the improvement of spelling, reading, and visual perception. Two very useful reports have been issued by Baker (6) and Thompson (71). These deal with administrative as well as teaching and curriculum practice in setting up combined programs. Both cover corrective and remedial work in arithmetic, spelling, reading, and handwriting, with the result that their descriptions include helpful suggestions for similar combined programs with pupils who are not

retarded.

A recent study of the status of remedial teaching in schools throughout the country has been reported by Traxler (75). The summary reflects the extent to which remedial and corrective programs are becoming liberalized in attitude and approach to the whole language problem of the pupils. However, the questionnaire survey which he reports showed need for even more schools to stress preventive and group corrective work in all aspects of language.

Study of the specially handicapped

In the references to studies undertaken with remedial cases, this summary has covered a number of quite technical books and articles. If apologies seem due for this procedure, it should be remembered that the *measurement* of progress in language programs requires carefully controlled situations. Narratives of classroom activities, however vivid, sometimes leave one with a vague sense of dissatisfaction because very promising results frequently must be credited to imponderable factors like the enthusiasm of the teacher and the interest of the pupils. It is to remind the reader that some of the superficially more austere technical reports have their contribution to make, as well, that reference is made now to a small group of studies regarding special handicaps. What some of these studies may lose in applicability because of the narrowness of their approach, they may gain in the soundness and dependability of their findings. The teacher in the regular classroom cannot evaluate them fully until an attempt is made to apply the results to pupils whose difficulties are within the normal range.

In discussing hearing or listening as it is related to reading, reference should be made to a study published in 1942 by Kennedy (43) which reviews the effect of different types of hearing disability on reading. The author suggests that there are differences in the reading skills developed by pupils with high frequency loss and those with other sorts of hearing disability, even when all the pupils studied were severely handicapped. Pugh (57) also studied the silent reading abilities of children who were severely handicapped acoustically. She found severe retardation in sentence meaning and vocabulary growth, but more nearly average performance in paragraph meaning and study skills. By far the most impressive study of hearing difficulties in relation to reading is that issued in 1947 by Henry (34, 35, 36). She studied the relation of audiograms to total reading achievement, to different factors of reading performance, and to age, sex, economic background, and specific diseases of the ear.

A study based on analytical data regarding speech defects has been published by Moore (51). This author compares the effects of different types of speech difficulty with progress in both reading and arithmetic. The study branches over into listening as related to language development since it treats, in one part, the speech of the hard-of-hearing.

A concluding note should be made of two references in the training of the blind. Lowenfeld's (49) report on a comparison of Braille and talking-book reading has implications for the teaching of normal groups. The study covers the intermediate and higher grades. A recent pamphlet containing a very provocative set of reports is edited by Hayes (32). It outlines the proceedings of the first regional conference concerning the mental measurements of the blind. In reading these descriptions of the difficulties and handicaps of measuring achievement, personal development, and ability of blind pupils, even the layman should gain a real insight into the care with which all educational measurement should be undertaken and the scientific controls

with which it should be prosecuted.

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Interrelationships between Speech and Other Language Arts Areas

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Studies bearing directly on interrelationships

While there have been relatively few studies which were originally intended to determine or measure the interrelationships between speaking and the other language arts, a number of investigations did reveal such interrelationships, even though incidentally or obliquely. Some of these concerned relationships between specific areas of the language arts as between listening and speech, or between oral and written expression. Other investigations yield evidence of the contributions which speaking

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may make to one or another of the language arts, or vice versa. Still others defined common elements which basically determine certain interrelationships among listening, speaking, writing, and reading. The remaining studies included speech in rather ambiguous fashion since language usage in general was involved, speaking thus being included though not specifically identified.

Relationships between speaking and listening.—In 1936, after studying young children's acquisition of good speech habits, McDowell (41) stated that proficiency in speech is better taught by contagion—or listening to the everyday speech of competent associates—than by drill techniques. Betts (8) makes several statements relative to the influence of listening upon a child's manner of speaking. Listening, as the first stage of language development, forms the base for learning to speak and then develops continuously to buttress further growth in speaking.

The group of listening skills which constitute auditory discrimination is also a factor in learning to speak. In 1948, Hahn (27) reported on her analysis of first grade children's speech in audience situations. She recommended that a teacher use a conversational tone in her oral reading so as to improve the pupil's voice usage and articulation, and that the teacher train the children to listen for a speaker's ideas in order that they learn how each speaker develops his ideas.

Rossignol (50), in 1948, reported on an extensive study of the relationship between hearing study acuity and speech production for children in the early primary grades. She writes, "Apparently the pronunciation of familiar words in the child's speaking repertory is unrelated to hearing acuity, but the pronunciation of new words, as evidenced in the nonsense syllables tests, does vary with hearing acuity. The classroom teacher therefore should take special care in presenting materials containing new and unfamiliar words. The children must have a clear auditory stimulus in learning new words" (p. 37).

Some of the effects of radio listening on the speaking of children were studied and reported by Novokovsky (45) in 1948. In her words: "One of the clearest lessons research has to tell us is that the words children use depend on the stimuli they meet. If experience prompts the use, children may, and frequently *do*, use words heard on the air" (p. 103). Novokovsky recommends that there be both a preliminary and a follow-up discussion of new words that children hear on radio programs. In addition, her report lists many speech activities that grew out of radio listening to Philadelphia broadcasts; for example, introductions, telephoning, interviews, individual reports and storytelling, to mention a few.

Relationships between oral and written communication.—Of the four reports reviewed here, only one was a major study directly concerned with the relationships between speaking and writing. The others, miscellaneous in nature, were either narrow in scope, only incidentally concerned with such relationships, or generalized authoritative statements.

Pooley (47), in surveying the language arts curricula of elementary schools in Wisconsin, ascertained that one-fourth of the language lessons in both rural and city schools consisted of oral discussion leading to written lessons. Thus may instructional practices promote interrelationships between speech and writing. That there may be value in oral discussion preparatory to writing is shown by Strang's statement (57) that many opportunities for oral communication about things of *vital interest* are favorable to effective writing. In comparing oral and written communications of ninth

grade children, Lemon and Buswell (39) found low correlations between errors in the speaking and writing of pupils.

In 1930, Bushnell (13) made a careful and extensive analysis of oral and written English. After equating groups of tenth-grade pupils, he secured 100 pairs of compositions consisting of stenographic notes on each pupil's oral composition and a written composition written two weeks later on the same topic. He found written themes to be 6.8 points higher than oral on a scale for thought content, with 93 per cent of the former themes being equal to or exceeding the median of the latter. In sentence structure, written themes exceeded the oral ones by 6.2 points; or 92 percent equaled or exceeded the median of oral themes. In terms of correlations between oral and written compositions, the correlation in thought content was .42; in sentence structure, .35; and in both, .43.

Bushnell drew the following conclusions from his data: Written themes are consistently superior in thought content and sentence structure and less subject to nearly all kinds of errors. For any one pupil, oral communication is more fluid, unorganized, and incoherent. Since some pupils do about equally well in both speaking and writing, it appears that the apparent disparity need not exist.

In interpreting results, Bushnell wrote: "There is strong evidence from the data presented here that writing and speaking are not, at this level of maturity, separate, distinct types, with their own peculiar merits and qualities, but that there is merely a continuous gradation from a precise, logical, integrated manner of expression to one of the opposite extreme, and that a pupil's writing is almost certain to be further up this scale than is her speaking . . . By far the most evident and important difference between the written and oral themes appears to be that of preciseness-looseness. With respect both to certain errors and language usages, and to vocabulary, better speech approaches poorer writing" (pp. 65-66).

Bushnell believed that it might be reasonably inferred that "written English should be used somehow as a guide or model for oral English." While his study was reported more than 20 years ago, his findings may still apply in instances where older pupils need to give an organized and formal report. However, it is well to recall that Strang almost reverses the situation in that she states that written expression becomes increasingly effective as children talk abundantly about matters of vital concern. Normally, oral communication should be fluid and informal, not stereotyped.

Speaking vocabulary and the language arts.—Only as vocabulary size and identity of words are revealed in speaking are most of the following studies pertinent here. As early as 1925, Goodenough (25) in comparing the results of the Stanford-Binet vocabulary test and the reading section of the Standard Achievement tests found a correlation of .79 between the ability to understand and to explain meanings of words and reading. According to Seashore (58) studies and experimentation prior to 1948 had shown that the size of vocabulary is the best single index for predicting achievement in nearly all language skills, inclusive of those used in speaking.

In 1947, Townsend (61) investigated the relationship of vocabulary size and spelling. She found a tendency for vocabulary-spelling correlations to increase from sixth grade through twelfth, the correlations running as high as .674. Townsend believed that the correlations would have run higher if her measures had been completely reliable. She concluded that "All the evidence at hand shows that there is a definite ten-

dency for good spellers to have superior vocabularies . . . and for retardation to be associated with low vocabulary." (p. 468) Research is still needed to ascertain whether remedial work in vocabulary will tend to increase spelling ability and vice versa, also to determine what types of teaching will most effectively produce gains in both areas.

Mutual contributions of speaking and the other language arts.—In one of the earlier studies bearing on the relation of speech to reading progress, Wilson and collaborators (65) found that "varying abilities to see, hear, and speak . . . do not seem to be closely or critically related to progress in reading as revealed by either the statistical analysis or the case studies" (p. 443). In 1948, ten years later, Rossignol (50) derived contradictory findings after an extensive, carefully controlled study of the relations among hearing acuity, speech production, and reading performance of first and second-grade children. She found that reading performance does vary significantly with speech production, both for familiar words and for those newly introduced. In learning to read, the child progresses in accordance with both his established speech habits and his skill in articulating new words. Teachers, therefore, are advised to correct poor speech habits and to take great care when presenting materials which involve the use of unfamiliar words.

Several articles by Hildreth (28, 29, 31) confirm and extend Rossignol's findings. Hildreth cites the mounting evidence of the intimate relationships between linguistic ability and reading achievement. These are two-way relationships in which speech serves as the foundation for learning to read printed word symbols and in which reading facilitates improvement in oral expression. For instance, a child's ability to understand and use language orally is known to be a factor in reading readiness. It is also known that the words that a child uses in his conversation constitute the words most easily learned in print. Throughout the process of learning to read, previously learned language associations are an aid. The child's ability to express himself in language, oral or written, indicates his potential for progressing in reading and sets a limit to such progress. Maturity in language facilitates rapid growth in reading. On the other hand, whatever problems a child has in language are likely to appear in his reading.

Hildreth further makes clear that reading makes a contribution toward continued growth in language. For instance, linguistic awareness of new terms, correct sentence structure, and correct forms is fostered. Ideas and vocabulary are greatly enriched. Oral reading constitutes an excellent basis for discussion.

In attempting to make an organismic approach to spelling, Straub (58) found that the related language arts must be used to build up a context of meaning for the words to be learned. Listening to correctly pronounced words, using them meaningfully in oral and written language, and utilizing reading skills involved in word recognition are aspects of the language arts that should be associated with learning to spell words.

Relationships between language usage and other language arts.—Speaking is but ambiguously involved in the studies considered here, since they identified relationships between language usage (oral and written, it is assumed) and the remaining language arts.

In 1950, Artley (4) made an extensive survey of studies concerned with interrelationships among the language arts. Included were several major doctoral investigations designed to ferret out such interrelationships. One of these by Virgil Hughes (35) found a positive relationship

between reading achievement and language usage, the correlation—after being corrected for attenuation—being .67. Hughes also determined the correlation between language and spelling to be .45. Another dissertation by Thomas Blewett (10) established a positive relationship between hearing comprehension (listening) and language usage, a correlation probably lower than that between reading comprehension and language usage.

Artley's survey further revealed findings such as these: Reading achievement is conditioned by the extent to which general language ability has been achieved. The growth curve for reading skills is closely parallel to those for other language arts areas. The degree of parallelism is uncertain, however. Dow and Papp (16), to illustrate, found no significant relationship between reading ability, language ability, and speaking ability, while Aukerman (5) found differences in reading ability to be related to good and poor achievement in eleventh grade English, even when intelligence and other pertinent factors were held constant. Betts (8) states that, with very few exceptions, reasonable facility in the use of language leads to successful achievement in reading activities. De Boer (15) maintains that when a teacher strengthens the child's command of language, she is directly engaged in reading instruction. Young (66) critically reviewed more than a score of studies relating to reading in the social studies. These investigations showed that social studies materials are more meaningful if social studies vocabulary is taught directly and if proficiency in general language usage is sought rather than reading proficiency as such.

Davis (14) found a small but significant correlation between pupils' speech ages in first and second grade and their reading. She reported maturity of speech to be at least a contributing factor in reading reactions.

The preponderance of evidence seems to indicate that there is a significant and positive relationship between proficiency in language usage and other language arts areas. As Betts says, oral language is one of the facets of the language arts, which include listening, reading, and written communication. There are common elements among these various areas.

Common elements among the language arts.—Serviss (55) says that "Language in use embraces all fields in which the child utilizes it for comprehending meaning (reading) and for transmitting and interpreting his ideas to others." (p.32) This idea is amplified by Russell (52) who says: "Spelling ability is one of a constellation of language arts abilities. These tend to reinforce one another from the first grade at least through the sixth grade level of spelling ability so that the language arts program should be planned in ways to obtain maximum contribution of any one factor to related abilities." (p. 35)

A major factor common to the various language arts is vocabulary—words and their meanings. In the words of Lorge (40), "The words people use in speech or in writing, or read in books, or hear in speech do not stand for a single meaning or a simple referrent . . . Meaning is a function of the ideational and emotional experiences of the interpreter and user of verbal symbols," (p. 552) Betts (8) states that "Vocabulary, as a part of language structure, is a crucial factor in speaking, reading, and writing." (p. 309) He then goes on to show that meanings have their roots in experience, and demonstrates in another article (9) that new vocabulary should be gained through the experience-to-language approach or, in other words, take on meaning through first-hand sensory experiences.

Hildreth (32) reinforces Betts' statements. She shows how an activity program affords language opportunities for increasing vocabulary, improving speech, and enriching expressional opportunities in general. Reading is correspondingly enriched. Unifying experiences in all the language arts through using the same meaningful content related to actual experiences are likely to strengthen every phase of language development.

Further common elements among the language arts are brough out by Hildreth (29) as she shows children to have the same problems in learning to speak as in learning to read: (1) knowledge of words and their use in sytactical English; (2) grammatical sequences in language; (3) idioms; (4) and shifts of meaning in sentences or paragraphs if the words are altered slightly.

It is apparent that much of the interrelationship among the language arts is due to such common elements as vocabulary and the concepts the words express, the structure of our language, the fact that meaningful experiences strengthen each facet of the language arts, and the carryover of problems from one aspect of the language arts to another.

Studies bearing indirectly on interrelationships

Frequently investigations launched for one purpose yield findings not foreseen nor directly sought. On the following pages will be reviewed reports of studies which include findings on the interrelationships among the language arts even though the investigators were not seeking to ascertain such relationships.

General relationships of speaking to other language arts.—In attempting to work out a speaking-listening index, Ewing (17) determined how many of the control themes and main ideas and audience could write down after listening to a series of five-minute talks. The speakers and the listeners then compared their respective lists of ideas. After discussing weaknesses in the talks such as vagueness and lack of logical arrangement of ideas, a second series of talks was given to listeners who again listed themes and main ideas. The second speaking-listening index was twice as great and showed the effects upon an audience's listening when talks are better planned and delivered.

Glasgow (24) compared the results of indistinct and distinct enunciation on listeners' comprehension of both prose and poetry. For 206 sophomore girls, the use of indistinct enunciation reduced comprehension of prose by 57.1 per cent and of poetry by 41.6 per cent. Watts (33), in commenting on the fact that children tend to use the kind and quality of language heard within the family circle, says: "Children adopt the language of grown-ups in so far only as it chimes in harmoniously with their own needs." (p. 246)

Gates (20), in an attempt to improve diagnostic tests in reading, determined the intercorrelations of attainment in school subjects. Among the correlations yielded by a series of 28 tests were .13 between oral vocabulary and spelling; .22 between oral vocabulary and word recognition. Oral vocabulary correlated .10 with oral reading; .07 with silent reading. In 1948, Artley (3) reported on a survey of investigations revealing principles underlying effective spelling instruction. Among the abilities and background contributing to spelling skill were correct pronunciation, careful enunciation, and a knowledge of common meanings and semantic variations of the words—knowledge revealed through speaking in many situations.

After noting that older children tend to use large and imposing words in written work though oral language still employs

simpler vocabulary, Watts (63) explained the tendency thus: "Living as they do in a world where the biggest and the largest words seem to be at the command of salesmen and advertisers, children are apt to get the impression that their own written language ought to be a somewhat grander affair than their everyday speech, so that when they take up their pens they ought to discard simple words like *go, get, give, take,* . . . and employ such words in their place as *proceed, procure, present, accept,* . . . "We encourage little children to write, not with their attention centered on the need for formal correctness but as they would speak to an intelligent listener." (p. 246; 249) Hildreth (28) maintains that, in writing, children are not so apt to use words learned in formal spelling instruction as they are to use words of their everyday conversation (pp. 484-85).

Relation of spoken language to reading readiness.—In discussing the implications of language in beginning reading, Adams (1) shows that children are often asked to "read with expression" before they have developed the ability to express their own ideas. While still in the single-idea stage of learning to speak, they are supposed to follow consecutive lines of thought in reading selections. She makes clear that children must have developed considerable ability in oral expression before they can be expected to comprehend or to reproduce through reading the ideas of other persons.

Kopel (37), in making a critical review of the values of specific measures of reading readiness, found language usage to be an important criterion for educational guidance related to such readiness. In an earlier study published in 1936, Gates and Bond (22) made a study of factors determining success or failure in beginning reading which was taught by mass-instruction techniques where books were introduced early in first grade. The pupils' ability in oral expression was tested by their proficiency in completing an unfinished story. These investigators found there to be a fairly high correlation between the general quality of the oral language and the pupils' success in learning to read; but there was little relationship shown between the length of compositions or the number of ideas and success in beginning reading. This early study did little to show relationships between language usage and reading readiness in a situation where reading readiness is promoted before reading in books is begun.

Gates, Bond, and Russell (21) three years later worked on methods for determining readiness to learn to read. In respect to speech defects, they found that the minor defects found in the children who had been carefully examined for such defects had little effect on learning to read. The correlation of freedom from defects with reading readiness was .10. However, it was believed that serious speech defects might deter learning to read.

In 1943, Betts (7) made a comprehensive review of factors in reading readiness. He stated that the development of reading ability is primarily a problem in language. Children must have acquired a considerable fund of information and reasonable facility in the use of language: clear enunciation, correct pronunciation, a wide vocabulary, mastery of basic sentence structure, and the like. He showed that children who evidence delayed language development constitute a major instructional problem for teachers. For instance, hearing impairment may retard speech development because of incorrect perception of sounds and subsequent mispronunciation, and thus indirectly retard the development of reading readiness. Too, poor auditory discrimination (inability to hear likenesses and differences among words) may contribute

to faulty speech habits, such as saying *nick* for *neck*, or in running words together as in *gonna* for *going to*. Accurate discrimination of sounds builds an awareness of speech sounds that are essential to phonetic insight.

Hudson (34) was concerned with reading readiness at the intermediate grade level. He condemned the common practice of assigning reading from textbooks without preliminary discussion that will form a basis for interpretation by clarifying purposes and using the pupil's current background of experiences. Before children are asked to read unfamiliar informational materials, new concepts should be cleared up and the children's mind set should be attuned with the author's. Thus should oral discussion be related to lessons from informational books. Here readiness is a very specific matter.

Relation of oral vocabulary to other language arts.—In a comprehensive report on vocabulary problems in the elementary school, Seegers (54) showed that the oral vocabulary of children is greater than is their writing vocabulary. According to Strickland (59), the development of primary reading skills involves the learning of symbols which represent words already in the child's vocabulary. If too much time is consumed in mastering such words, there may well be a language-learning plateau because of the "curricular aridity" associated with reading lessons featuring familiar concepts. On the other hand, reading materials may be too far removed from actual experiences for middle and upper-grade children so that they learn to verbalize ideas which they do not actually comprehend.

Phipps' (46) experimental study on developing ability to read historical materials by building up history vocabulary produced a subsidiary finding concerned with the relation of speaking and reading. He found that the results in general seemed to support the hypothesis that, when ability to comprehend aurally and to express ideas orally is well developed, ability to read is improved.

Interrelationships among the langauge arts for bilingual children.—In her 1933 study of social, economic, and personal characteristics to reading ability, Ladd (38) observed that good readers tend to come from English-speaking homes and poor readers from foreign-speaking ones. Five years later Bennett (6) found 52 per cent of reading disability cases to come from foreign-language speaking homes. Hildreth (31), in 1949, remarked that case studies have proven retardation in language to be a common accompaniment if not direct cause of reading failures. In most cases, some language difficulties are involved; bilingualism, therefore, tends to mean trouble in learning to read.

In 1945, Tireman (60) reported on a study of the fourth-grade vocabulary of native Spanish-speaking children. He found that 46 per cent of 100 words selected from Stone's primary list were not understood by fourth-grade children in their second semester. Even upper-grade pupils were making an excessive number of errors in reading. A year later Rojas (49) wrote an account of an investigation to determine the suitability of vocabulary in readers for bilingual children. She reported that such children need a maximum of practice on the essential features of English. For instance, if they are to learn to read well, they must know the structural patterns of language, such as the order of adjectives, and must learn to recognize sounds used in English words. If the sound system of their vernacular is transferred to English, meaning is confused.

Language arts interrelationships and disability cases.—With one exception, the stud-

ies reported here concern reading disabilities; the remaining one deals with spelling disability. All involve interrelationships rather incidentally since disability as such was being investigated.

Spache (56) investigated spelling disability correlates with major attention to factors probably causal in spelling failures. He found a correlation of .60 between spelling and vocabulary knowledge and concluded that this knowledge is a more significant determinant of spelling success than is intelligence, particularly in the first five grades. Meager vocabulary, therefore, is apparently a contributing factor in spelling disability.

In 1941, Gaines (19) reviewed the research related to interrelationships between speech and reading disability. Upon the evidence then available, he concluded that there was as yet too little research, that the results of studies were so conflicting or—in some instances—so unreliable that it was hard to decide what the interrelations really are. Bond (11), after investigating the auditory and speech characteristics of poor readers, found no significant differences in the incidence of defective speech in good and in poor readers. However, stuttering did seem to be related to difficulty in reading, thus confirming Murray's (44) careful study reported three years earlier in 1932 which found that stutterers were apparently about one grade below normal in comprehension and two grades below in rate. Bond also reported that his study seemed to show implications that the phonetic type of reading instruction might elicit or accentuate the tendency to stutter.

Several other investigators found evidence of a definite relationship between speech defects and reading disability. Monroe (42, 43), compared a large control group with 5000 problem children. Her data indicated that reading-defect cases have many more speech defects. She believed that defective speech might be considered a factor in reading disability, possibly as one cause of reading defects or perhaps as a result of a common cause. About the same time, in 1931, Anderson and Kelley (2) made an inquiry that showed speech defects to be more frequent among reading disability groups than among normal eading groups, especially among children of low IQ. In 1941, Vaughn (62) studied classroom behavior problems encountered in attempting to teach illiterate defective boys how to read. He found that the poorest readers in the group showed significantly more speech difficulties in the academic rooms than did the good readers.

In more general terms, Fernald (18) stated that rehabilitating language contributed to success with reading disability cases. Buckingham (12) stated that "reading deficiency is quite generally language deficiency." (p. 115) Whipple (64), in considering remedial programs in relation to basic programs of reading, said that one of many contributing causes to reading deficiency among 83 pupils who had been studied intensively was inferior language equipment.

In 1943, Kopel (36) concluded that difficulties in reading have multiple rather than single causation as a rule. Though the factors are sometimes discrete and independent, they are usually quite complex and likely to occur in closely interrelated constellations. He did not consider speech, therefore, to be a simple "nosological entity." While speech defects *may* contribute to poor reading, Kopel did not believe that the presence of such defects would necessarily predicate reading disability because of the human organism's remarkable powers of adjustment and compensation, especially whenever motivation is strong.

Gellerman (23), in 1949, tried to deter-

mine the causal factors in the reading difficulties of elementary school children. His analysis of case studies indicated that speech defects are a precipitant factor in reading difficulties. A precipitant was defined as any factor resulting in decreased reading performance. Robinson's (48) report in 1946 on why pupils fail in reading revealed that certain types of anomalies operates as causes more frequently than others. Speech seemed to do so less frequently than do social, visual, and emotional difficulties. Speech and functional auditory factors were factors in 18 per cent of 22 cases, dyslalia in 14 per cent. In regard to the relationship of speech defects to reading efficiency, Robinson agreed with Gaines (19) that it is impossible to draw final conclusions because researchers in this area do not themselves agree.

Summary: Interrelationships and Implications

Speaking, along with listening, reading, and written communication, is a facet of the general language arts constellation. That there should be interrelationships among these language arts seems inevitable. There are common elements of vocabulary, language structure, idea relationships, and verbal reasoning. Research has shown parallel growth curves among these language arts. Learning in one area reinforce the learnings in the others.

Relationships between speaking and listening.—A child speaks the language he hears, especially that of the family circle. Hearing impairment tends to retard language development. He will pick up those new words and concepts he hears to the extent that they harmonize with his interests and background. It is important that he hear such new words correctly and clearly. Poor enunciation, even with words that are familiar, tends to decrease the amount of [illegible]ation the listeners acquire from a talk. Well organized oral discourse produces more effective listening.

Relationships between oral and written discourse.—Oral communication tends to be more fluid, unorganized, and incoherent than is written. However, thoughtfully planned oral discourse can reduce the lack of organization and coherence that characterizes spontaneous speaking. Older children, therefore, should think through reports and explanations whenever their listeners expect to acquire a considerable amount of organized information. It has also been shown that talking over a topic previous to writing on it is favorable to effective writing.

Relationships between speaking and reading.—Facility in the various aspects of the speech skills is a prerequisite to learning to read and is, therefore, the foundation for reading. The beginning reader learns most easily those words which are familiar through firsthand experiences and already implanted in his everyday speech. Until a child has a wide speaking vocabulary, enunciates clearly, talks in sentences, and thinks and speaks sequentially, he can scarcely learn learn to read with comprehension and ease. Throughout the program of reading instruction, a child's language usage defines his potential for yearning to read and sets the limits of his proficiency as a reader. Bilingual children are handicapped unless and until they have mastered the speech patterns of the English language.

On the other hand, reading activities facilitate oral communication. Reading materials afford new terms to be added to the child's meaning and speaking vocabulary; a variety of sentence forms become familiar and tend to broaden the child's repertory of oral sentence constructions; correct word forms are impressed, especially as oral reading and discussion call for the use of these forms.

In disability cases, speech defects may contribute to poor reading, especially in serious types such as stuttering. Since investigators do not agree as the effects of speech impairment on the ability to read well, no definite conclusion in regard to this matter can be stated at this time. However, it does appear that poor readers do have more speech difficulties than do good readers, whether due to a common cause, or the effects of speech defects on the ability to read is not known definitely.

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Interrelationships between Listening and Other Language Arts Areas

ALTHEA BEERY[1]

Within recent years beginning attempts have been made to investigate problems centering around listening and its relationships to other phases of language development. These relationships have been summarized by other writers (5, 34, 45). In this article reference will be made to representative studies from research whenever their findings are known to the writer. In addition to such references, certain probable parallels and differences will be stated as points worthy of classroom exploration and validation by research.

General components of language

Common to listening, speaking, reading, and writing are certain fundamental elements of language. Among these are vocabulary, sentence patterns, organization of ideas, and adjustment to the function of language in any particular instance (the giver and receiver of language attempt to reach each other).

Since these elements of language are present in any instance of its use, it is not surprising that many identical or similar psychological processes will be involved whatever the form language takes. Positive relationships among the various language arts are to be expected; studies frequently show that lack of competence in one phase of language hinders growth in other areas.

Language involves not only physical action—the use of the eyes, ears, and voice—but also intellectual activity. In fact, the ability to use language, the unique possession of man, keeps pace with mental development. The close relationship between language and thought is borne out by research. Correlations of intelligence with listening, for example, range from r. of .27 (40) to r. of .56 (32).

This close relationship between the higher mental processes and all phases of language indicates that improvement in each should be sought primarily through helping the learner deal with ideas rather than through focusing too narrowly on mechanical techniques. Psychologists do not find any appreciable difference between modes of sensory presentation (74).

To be sure, language is a learned response (77, 78). Without nurture it does not flourish. A favorable environment, firsthand experiences, and appropriate guidance are all essential, especially during the years before school entrance and throughout the elementary school. No set of circumstances, however, will enable a child to speak or read more maturely than his developing mind can deal with abstractions or with the relationships between ideas.

Listening and spoken language

Listening precedes speaking with the infant, and the quality of speech which the child comes to use depends upon the speech he hears (47). The normal child picks up speech more or less unconsciously under the informal tutelage of family living. The fact that twins are retarded and only children accelerated in speech development (47) must be attributed in a substantial degree to the speech patterns they most frequently hear. The deaf child learns to speak only with special instruction.

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His sentences are shorter and lack the subordination of ideas of the hearing child (31).

Because of what he listens to, the speech of the child reflects the vocabulary, the usage level, and the sentence patterns of home and neighborhood. (81) During early years his ability to understand spoken language outstrips his ability to use it. The child of fifteen months may still be using one-word sentences, such as "milk," at the time he is able to understand and respond to the request, "Give Mother your dish." New words, new expressions, new sentence patterns take on meaning as the child listens to them repeatedly, now in this situation, later in another. The development of spoken language is reviewed in several sources (19: 79ff, 68, 73, 77, 78).

In a real sense listening and speaking are reverse sides of the same coin. One speaks to a listener; one listens to a speaker. Each type of oral language situation imposes responsibilities on the audience, some general and some particular. The oral situations which children meet during the elementary school have been analyzed empirically to discover the listening skills each requires (7). Improvement in listening skills results in improvement in speaking (1, 16, 37, 49).

Listening is especially valuable in the elimination of usage errors. In fact, Smith (68:85) states that *sound* is the most potent factor in improving usage. Listening to a playback of his speech enables a child to identify pronunciation difficulties or poor speech habits and serves as a motivation for improvement. Speech authorities stress the importance of teaching children to listen more attentively to sounds as an essential step in learning how to improve in articulation (78).

While the writer knows of no specific research on the point, listening to stories and [illegible]old or read has long been advocated as a means of increasing the child's vocabulary and familiarizing him with desirable language patterns. Teachers can cite many examples of phraseology picked up in this way and later reflected in the child's conversation. Moreover, listening to oral presentations is the best way to secure response to the emotional content of literature (1).

What children listen to must be appropriate. Park (57) found that the sound motion pictures from which children learned the least were those with long sentences and a heavy vocabulary burden.

Obviously, what a child can listen to intelligently, increases in complexity with his growing powers. The Flesch and other read-ability formulas have been applied to material presented orally (15, 17, 24). Most attempts to measure "listenability" have involved older children and adults. In general, at the lower levels, readibility measures underrate the child's ability to listen; from approximately seventh grade and above, they overestimate the child's ability to understand speech. For example, material that measures tenth grade in readability is about twelfth grade in "listenability" (15, 17).

Much of the research on the effect of speech on the listener has been carried on with high school pupils and adults, but it has implications for elementary teachers. Dietrich (23) found that conversational delivery produced a greater shift in attitude among college listeners than what he termed "dynamic" delivery. According to another study (28) the prestige of the speaker influenced to a significant degree the effectiveness of a persuasive speech.

In a study at the college level (40) it was found that good speakers produced a greater amount of recall than did poor speakers. Furthermore, speaking accompanied by visual aids produced better immediate re-

call and had a slight advantage in delayed recall. Variation in rate of delivery affects recall (26, 51). Students remembered more from a radio newscast when presented slowly, though their preference was for a faster rate (51).

Harrell (29) in a study of the radio news listening of adults found that the content of the newscast influenced memory. Content dealing with human interest topics, spectacular events, local events, public affairs, and name items in the news were remembered in the order named.

Presumably, both what children are willing to listen to and what they talk about are related to their interests. If so, Baker's study (6) of discussion topics in the elementary school will offer leads as to suitable material for children's listening. Thus, in all probability, the younger the child, the more immediately the material presented should be related to his personal experiences and concerns. Sterner (72) found that it was the content of the material, rather than the medium which influenced adolescent choices of books, radio, or movies.

Listening and reading

The bulk of the research concerning the relationship of listening ability to other language skills has centered around its effect on reading ability. Some of the relationships which have been studied are: the relative effectiveness of reading and listening as modes of learning: reading and listening vocabulary; reading and hearing comprehension and retention; and common and differential factors in reading ability and listening ability.

Listening as a mode of learning. Ability to read, speak, and write is related to listening in one important way: instruction in these areas is given for the most part orally. Consequently, the pupil who has learned to listen effectively has a decided advantage over the pupil lacking such skill. Wilt (79) found that children are expected to listen in school on the average of two and one-half hours daily. The teachers involved in her study were unaware, for the most part, of the listening needs of children; tended to do most of the talking; and gave little attention to helping children learn to listen better.

Of necessity, listening is the chief mode of learning in the early school years during which children are learning to read. Throughout the primary grades they find listening a far better way than reading to gain information. Although this advantage lessens during the later elementary grades, children can learn more through listening and remember it better than through reading until they reach the sixth or seventh grade (36, 63, 82). Morevover, listening is the mode of learning preferred by retarded readers (64). The lower the reading ability, the greater the advantage listening has (4, 26, 44).

Even though listening is more effective at the elementary level for learning than is reading, investigations show that children get a relatively low proportion of the facts in a single oral presentation. (82) It is apparent that improvement in ability to listen is essential, especially when the proportion of out-of-school time children spend in listening is considered (18, 55, 56, 60).

Although teachers have always depended heavily on direct oral presentation, Wilt's study (79) indicates that teachers are unaware of the amount of time children listen in school. She rightly points out that children should have more opportunity to learn by listening to each other (80).

Hearing and reading vocabulary. Comprehension of the spoken word is positively related to comprehension of the printed word. It is for this reason that, in the beginning years, vocabulary in readers is

limited largely to words in the oral vocabulary of children. Learning to recognize words is more easily accomplished when the words met in reading are in the listening and speaking vocabulary (33). That unfamiliarity with a comprehensive spoken English vocabulary is associated with difficulty in reading is borne out by several studies (42, 48, 65).

Working with college students, Anderson and Fairbanks (4) found a correlation of .80 between reading and hearing vocabulary. Not all of this should be attributed to listening, for they conclude that apparently "vocabulary ability is a general function which, on the average, operates independent of the mode of presentation of the material." Their investigation revealed that pupils who fall in the lowest 15 per cent in general reading ability scored higher in hearing vocabulary than in reading vocabulary.

Hildreth (34) reports a study of Goodenough (27) in which she found a correlation of .79 between ability to understand and explain words on the Stanford Binet vocabulary test, presented orally, and reading ability. It is hard to determine, however, the proportion of the word meanings which were acquired through listening; many of them may have been learned through reading. Krawiec (41) found visual superior to oral presentation in learning vocabulary at the college level.

Schonell (65: 173 ff) rates weakness in auditory discrimination of speech sounds as one of the most important and most frequently occurring causal factors in poor reading. He also found that in most cases of retarded readers with deficiency in speech, the difficulty was due to a lowered power of auditory discrimination rather than to organic conditions. Monroe (48) has found that poor readers fail to distinguish between such words as *pin* and *pen*. Bond (11) and others have found lack of auditory discrimination related to poor reading achievement; Reynolds (59), however, did not find auditory abilities related significantly to reading achievement. Since it is through listening that the child learns to discriminate between similar speech sounds, training in listening would seem to serve as a prerequisite to word recognition and spelling, at least of those words in which the letters match the speech sounds.

Recent studies of children's vocabulary have shown that earlier estimates were much to low (66). The extent to which the listening vocabulary outstrips the reading vocabulary during the early elementary grades is one measure of the advantage of listening for learning during these years.

Hearing and reading comprehension and retention. A number of studies have compared hearing comprehension with reading comprehension. As a result of his study of factors associated with reading readiness, Gates (25) found that the ability to listen to a story and supply a reasonable ending was the best single predictor of success in learning to read.

Hearing comprehension and reading comprehension are highly related. Correlations range from r. of approximately .60 (44, 67) to r. of .78, (26) .80 (82) and .82 (44). According to Young (82) intermediate children who do poorly in comprehending through reading do poorly in comprehending through listening. In his study no child was found to be in the highest quartile in one mode and in the lowest in the other.

Listening is related more highly to getting the main ideas than to remembering details (9, 69). There is some evidence that listening is more effective than reading in producing a change of attitude, though Lowdermilk found reading superior for this purpose, and the use of both together su-

perior to either alone (46).

With more difficult materials and increased reading ability, studies in high school and college show rather uniformly that reading has the advantage in immediate recall (14, 20, 44, 52, 61, 62). There is a tendency, however, to remember longer what is heard than what is read. In several studies, after a lapse of time, listening was equal to or superior to reading (14, 20, 41, 61, 62, 70). DeWick (21) in a study of the effectiveness of advertisements, found auditory superior to visual presentation in both immediate and later recall.

Factors involved in reading and listening. Comparisons of the reading process with listening have been made by several writers (7, 30). Anderson (2) and Artley (5) list needed research in the further analysis of the process of listening. Apparently listening and responding to an oral test can be used to measure learning as effectively as can reading (12).

Studies of the basic abilities involved in reading and listening give further proof of the interrelationships between them. In an analysis of factors basic to the reading process, Langsam (43) identified four significant ones: (a) a verbal factor involving interpretation of ideas; (b) a perpetual factor involving facility in perceiving detail; (c) a word factor involving fluency in dealing with words; and (d) a factor, which she called seeing relationships, concerned with logical organization and selection of pertinent ideas. Brown (15) secured from experts in the field consensus on five basic abilities as significant factors in listening. They comprise ability to: (a) synthesize the component parts of speech to discover the central idea or ideas; (b) distinguish between relevant and irrelevant materials; (c) make logical inferences about what is heard; (d) make full use of contextual skills; and (e) follow without loss a fairly complex thought unit. Brown found that the best test for discrimination between good and poor listeners is the ability to use contextual clues. Similar analysis of the components of the listening process have been made (15, 16, 54, 58).

Nichols (54) reports that in addition to intelligence and reading comprehension the factors influencing listening most significantly include recognition of correct English usage, size of the listener's vocabulary, ability to make inference, ability to sense the organization of spoken material, and interest in and emotional attitude toward the topic. According to students' reports, poor listeners listen for specific facts, good listeners for main ideas.

One of the difficulties in studying the relationships between reading and listening has been the lack of instruments to measure listening ability. Durrell's Test of Reading Capacity, published by the World Book Company, is a pioneer attempt at the elementary level. Betts (8) suggests an informal way of using graded reading materials for this purpose. Several attempts to build a diagnostic test for listening have been reported in the literature (9, 15, 69).

Advantages of relating listening and reading. It is obvious that listening and reading are intimately related, and that improvement in one will result in improvement of the other. Both are concerned with receiving ideas from others. Restricting elementary children to learning through reading will limit the information they receive, partly because the skill of reading is imperfectly developed and partly because children can get more from an oral presentation in which gesture, voice, emphasis, and facial expression aid in comprehension. Conversely, if children are to grow in ability to listen effectively to material of increasing difficulty, their understanding vocabulary must be developed beyond that commonly

used in daily living. Reading, accompanied by discussion, promotes such growth. Unless reading is preceded, accompanied, and followed by discussion for children to hear and participate in, vocabulary learned in reading does not become usable for children, especially those from homes in which a foreign language is spoken (75).

Listening and written language

There has been little exploration of the relationship between listening and written composition. Some of the elements important in children's writing are obviously affected by previous listening experiences. "Sentence sense," that persistent problem in all written work, depends not only on orderliness of thinking and general language maturity but also on the extent to which the child's ear is attuned to the customary ordering of words in English sentences.

To the extent that spelling errors occur because of wrong sound images of words, better listening will reduce spelling errors, at least of those words in which the letters match the sounds.

Since there is a positive relationship between skill in listening and skill in oral language, the establishment of a relationship between ability in oral and written expression presumably would reflect the indirect influence of listening on the writing of children. Teachers have found, in general, that children who express themselves well orally tend to excell in written English. The reader is referred to the articles by Miss Townsend and Miss Dawson in this series for studies of such relationships. It was noted previously that the lack of listening experiences on the part of deaf children resulted in more immature sentences (31).

It has long been a truism that vivid impression must precede effective expression. A recent course of study gives examples of sensory experiences, including records of interesting sounds and spoken language, to be used as preparation for more vivid writing (10). Similar practices are suggested in an article in a recent article by Treanor (76).

Schonell (65) found the following correlations of written composition with other aspects of language: with vocabulary .54; with sentence sense .52; with English usage .45; with reading comprehension .50; with spelling .48; with amount of reading .33. While Schonell did not investigate the relationship between listening and the ability of children to write compositions, several of these correlations probably reflect ability to listen. He found that 39 per cent of his subjects who were deficient in written expression, as compared with 12 per cent of his control group, came from poor home backgrounds. These children were frequently deprived of rich experiences out of which might come topics for writing. They did not hear interesting conversation at home and they had few close friends.

Listening to and commenting on the stories and letters which classmates have written encourage written expression because such practices furnish an audience, a needed incentive for writing. Reading one's own writing aloud is sometimes advocated as a means of discovering incomplete sentences, lack of subject-verb agreement, lack of clarity, and awkward phrasing. Listening plays its part as the teacher corrects the child's work with him in a face-to-face situation. The teacher's interest is in what the child has written; their mutual concern is to express clearly the ideas the child had in mind (73).

The improvement of listening

Guidance in listening has not been given the place in school that its importance in the development of language power and the extensiveness of its use in daily living warrant (3, 19). It cannot be assumed that chil-

dren naturally learn how to listen. In fact, studies show that without instruction there is little improvement in listening from junior high school through college (13).

There is evidence that pupils can be taught to listen more effectively (13, 24, 39, 48). In one situation high school students computed their listening scores for a series of lessons; on a second similar series they made notable improvement (10). Experiments at the college level have led to measurable improvement of listening (32, 39).

Several writers have analyzed the various types of listening and have given suggestions for appropriate guidance for the development of each (22, 35, 50, 53, 71). Descriptions of classroom practices are beginning to appear in the literature. Jacobs (38) has described a radio unit carried on with eighth-grade pupils which is suggestive.

Space does not permit the inclusion here of any extensive analysis of the process of listening, nor of the development of standards for successive levels of listening. The sequence in language growth from listening to speaking to reading and finally to writing seems clear. Although listening is first in the cycle, it does not lose its importance as other facets of language development emerge. They, in turn, contribute to listening ability in a kind of circular interaction in which each profits from the others and strengthens them.

Finally, it should be remembered that growth in language power cannot run ahead of the rate at which the child matures. Ability to understand, speak, read, and write involved sentences is dependent on a mind that can see the relationship between ideas. Experiences and social interaction are equally necessary to build concepts and give purpose to language. The interrelationships among the language arts point to the need for a school program that teaches them in harmony with each other and with the larger purposes which language serves in the development of the individual and his relationships with others.

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