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# An Investigation of the Relationships among Several Language Variables and Three Categories of Reading Achievement

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AN INVESTIGATION OF THE RELATIONSHIPS AMONG

SEVERAL LANGUAGE VARIABLES AND THREE

CATEGORIES OF READING ACHIEVEMENT

THESIS

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An Investigation

Abstract

The purpose of this study was to investigate the
relationships among several language variables and
three categories of reading achievement. The sample,
thirty second grade students, was given the Test of
Language Development and The Metropolitan Achievement
Test - Primary II to assess various subskills of lan-
guage development and reading achievement. The sub-
test scores of these measuring devices were computer
analyzed to determine correlation coefficients among
the variables. Significant relationships were found
between children's Picture Vocabulary competence and
Comprehension, and between children's Grammatic Under-
standing and Comprehension. Several variables showed
negative correlations and almost no relationship
existed between some of the variables. This study
could be replicated at grade levels other than second;
with children of varying reading levels; with respect
to factors such as intelligence or sex; or by investi-
gating other language or reading competencies than the
ones studied in this research project. A limitation
of this study is the small sample. The instruments

An Investigation

used to measure language and reading ability must be
accepted if the conclusions are to be regarded as
valid. This investigation found a variety of relation-
ships among language and reading variables.

Chapter I

Purpose

The purpose of this study was to investigate the
relationships among several language variables and
three categories of reading achievement of second
grade students.  The aspects of the children's
language ability which were assessed are picture
vocabulary, oral vocabulary, grammatic understanding,
sentence imitation, grammatic completion, word
discrimination, and word articulation.  Word know-
ledge, word analysis, and comprehension are the
categories of reading achievement which were
measured.  The relationships among the language and
reading variables were studied.

Need for the Study

Language is the symbolic system used to convey
thought from one person to another.  Written
language takes on a second set of symbols to
represent the oral language, thereby allowing
thoughts to be conveyed across time and
space.  Knowledge of the language provides
one with the rules of syntax allowing
recognition of the relationships of words
within a sentence or passage.  Meaning is
obtained by analyzing the syntax. (Bouchard,
1974, p. 3)

Prior to the revolution in linguistic theory produced by structural and transformational-generative grammars (Bloomfield, 1933; N. Chomsky, 1957) language, linguistic theory, and their method of inquiry played little role in reading theory, research or instruction. Oral language ability was considered irrelevant for explaining individual differences in reading achievement. However, recent research indicates that oral language development, including grammatical interpretation, continues at least throughout the elementary grades (Menyuk, 1963; C. Chomsky, 1970; Strickland, 1962; Loban, 1963; Ruddell, 1966, 1970). Productive application of linguistics to the field of reading made it necessary to formulate and revise theories to incorporate the interrelationships among the stimulus characteristics of writing systems and the response components of phonological, morphological, syntactical, lexical and affective systems. These systems are organized by the reader in order to process and transform the surface characteristics of oral or printed stimuli into a structural form and level which results in a semantic interpretation (Singer, 1969; Ruddell, 1970; Goodman, 1965, 1972).

Throughout the literature studies and research references show inter-correlations between global scores on one of the various language development measures and scores on reading achievement tests. Strickland (1962) found significant relationships throughout the grades between a child's structure of oral language and his/her reading ability. Significant relationships were reported by Loban (1963) between children's reading comprehension achievement and their use of movables and subordination in oral language. An utterance containing movables can be rearranged, e.g. 'They were glad when I finished' can be expressed as 'When I finished they were glad'. Children must comprehend grammatical contrasts before they can produce these contrasts. A high correlation between third grade students' ability to understand the structure of sentences and their reading achievement was found by Gibbons (1941).

A Reading and Language program was designed and carried out in 1975-1976 in a New York City public school for children in grades kindergarten through fifth by Cusano (1976). The children made significant gains in both reading achievement (.01 level of

significance) as measured by the Stanford Achievement

Test and achievement in language ability (.01 level

of significance) as determined by the Stanford

Achievement Test of Auditory Comprehension. A review

of the literature continually displays this organismic

trend in research design.

That the richness of a child's language is

related to reading success; that words children use

in their own speech are easier to read in print than

words they do not use; that deficient readers are

deficient in oral language; and that speech defects

are related to reading problems are indicated in a

summary of Hildreth's study (1964). However,

Anastasiow demonstrates that "oral language is

important only in that it may reflect cognitive and

perceptual mastery of language but it is an insuffi-

cient and inaccurate predictor for many children of

their capacity to learn how to read" (Anastasiow,

1971, p. 35).

On the basis of an empirical study, Bougere

(1969) has reservations about the relationship of

language competence and reading achievement. She

obtained language measures by analyzing first graders'

oral responses to cartoon and picture stimuli. The
correlations between these experimental measures of
language competence and reading achievement were non-
significant. Pike (1976) found by using varying syn-
tactic and semantic content in sentences, that not
all children are equally able to make use of semantic
and syntactic knowledge in processing oral language
and that this knowledge is related to their reading
competence.

The relationship between children's reading
achievement on a cloze test and their ability to
identify sentences which had the same meaning but
different structure was studied by Simons (1971). He
found a correlation of .73 and concluded that compre-
hension is related to understanding of sentence deep
structure. A significant relationship was found
between syntax attainment and reading achievement
(r=.70) when second graders were given oral syntax
tests and a written syntax test and the Metropolitan
Achievement Test (Harris, 1975).

As demonstrated, the literature is heavy with
research on inter-relationships between single factors
of language development and a comprehensive reading

competence score. Data have been contradictory and research has offered limited information on the relationship between language competence and reading achievement. Is it possible that various degrees of correlation and non-correlation would be identified if more than one aspect of language competence and more than one aspect of reading achievement were compared? The necessity of answering this question is the reason for conducting this investigation.

## Design of the Study

By identifying several components of language development in the general area of semantics, syntax, and phonology, and by identifying several categories of reading achievement, i.e. comprehension, word identification, and word analysis, and assessing a sample of children's competence in each of these areas, the relationships among these variables may be investigated. The Test of Language Development, Empiric Press, 1977, is an instrument which gives a measure of each component of language competence which this study will examine. The subtests which measure a child's semantic development are Picture Vocabulary and Oral

Vocabulary. The subtests which provide a measure of
a child's syntactic competence are Grammatic Under-
standing, Sentence Imitation, and Grammatic Comple-
tion. Phonological skills are measured by Word
Discrimination and Word Articulation.

The Metropolitan Achievement Test - Primary II,
Harcourt Brace Jovanovich, Inc., 1974, measures the
categories this study identifies in reading achieve-
ment with subtests of almost identical titles. These
subtests are Word Knowledge, Word Analysis, and
Reading (Comprehension).

These tests will be administered to a random
sample of second grade children to assess various
aspects of the children's language ability and reading
competence. The data collected from the scores of
these tests will be analyzed so relationships among
the variables of language development and reading
achievement can be studied.

## Definition of Terms

Language Development - expansion of the symbolic
system used to convey thought from one person to
another.

Phonology – the sound system of the language. It is the means by which the language user may make his/her message verbal (Newcomer and Hammill, 1977, Test of Language Development).

Syntax – the term which designates sentence formation, that is, the correct sequencing of words and inflections in sentences (Newcomer and Hammill, 1977, Test of Language Development).

Morphology – refers to the study of the smallest meaningful units of language, and is often included as a part of syntax (Newcomer and Hammill, 1977, Test of Language Development).

Semantics – the linguistic term which designates meaning. Knowledge of semantics involves the manner in which meaning is associated with morphological or phonological forms, as well as the rules which determine the manner in which meaning is conveyed within a sentence (Newcomer and Hammill, 1977, Test of Language Development).

Reading Achievement – a standardized measure of the mastery of the sub-skills of reading.

Word knowledge – given a picture, a child identifies the word associated with the picture; given

a word, a child identifies a synonym, antonym, or
classification for the word, demonstrating the
ability to recognize and understand the meaning of
words.

Word analysis - given words of similar configura-
tion or sound pattern, a child must identify a dictated
word, demonstrating the ability to recognize sound-
letter relationship and skill in decoding.

Comprehension - demonstration of ability to under-
stand the literal and inferential meaning, when re-
quired to select a sentence which best describes a
given picture and select the best answer to questions
about short paragraphs read silently.

## Limitations of the Study

The limitations can be related directly to the
small number of children in the sample, thirty, and
the fact that this may not be a representative group
of second grade students. The sample is comprised of
white, middle class children and the conclusions
drawn from this study may not be extended to other
groups without further research. Another area to
be considered as a limiting factor, is the means

of measurement of skills in both language development
and reading achievement. In order to accept the con-
clusions of this investigation, the testing devices
must be acceptable, also.

## Summary

There is a need to investigate the relationships
among several language variables and categories of
reading achievement, since correlations between
language competence and reading performance have
previously been contradictory and confusing. The
research reported throughout the literature deals with
global scores in both language and reading competence.
This investigation will go beyond the over-all view-
point and study relationships among variables in both
areas.

Chapter II

Review of the Literature

The relationship among several language variables and three categories of reading achievement were investigated in this study. In the past a great deal of research has considered language development and reading achievement. First, language development has been studied to determine how language competence has been assessed and what factors influence the development of a child's language. Second, research has examined how reading achievement has been measured and what factors influence children's reading achievement.

## Language Development

Language development is the expansion of the symbolic system used to convey thought from one person to another.

## Assessment of Language Development

Branston (1976) reviewed the literature on language development and found that its study has been approached from diverse schools of thought. Psycholinguists subscribing to transformational grammar

(Chomsky, 1957) arrived at the conclusion that because

language is so complex and the environment is so dis-

orderly, the ability to acquire language must be

innate (Chomsky, 1968; McNeill, 1971). On the other

hand, behaviorists portray language as the result

of a history of positive reinforcement in addition to

the conditioning of appropriate discriminative stimu-

lus control (Guess, 1969; Baer & Guess, 1973; Staats,

1974). Between these theories, there emerged from

the study of semantic theory and case grammar (Katz &

Fodor, 1963; Katz & Postal, 1964; Fillmore, 1968) a

semantic view of language acquisition which considered

as primary the meaning and communicative intent of

child utterances.

Bloom (1970) began the application of semantic

analysis. She incorporated into her recordings of

child utterances, descriptions of the context in which

these utterances were used. Schlesinger (1971) and

Brown (1973) advanced the study of semantic intent

in child language. Brown applied the use of case

grammar to the analysis of early language, while

Schlesinger proposed an entirely semantic base for

early utterances. Work by Slobin (1973) and Bowerman

(1973) indicated that language reflects certain

universals of development across language cultures.

Nelson (1973, 1974) and Clark (1973, 1974), focusing

on conceptual and perceptual features of words, have

further detailed the early concepts that underlie

children's first words. These early concepts are

thought to be based upon perceptual information from

the environment and influenced by dynamic, action-

oriented, perceptual events. Branston (1976) con-

cluded that the semantic-cognitive approach to

language development could provide the perspective

from which the content and sequence for language

programs could be developed.

Traditionally, assessment has entailed the use

of standardized tests or criterion-referenced tests

for determining appropriate educational placement,

prescribing programming approaches, or measuring the

effects of various intervention strategies. Develop-

mental scales have been used with children at very

early levels of development. More recently,

proponents of psychological ecology have been advo-

cating the use of behavior observation in a naturalis-

tic setting as a more powerful and complete means of

assessment (Baldwin & Baldwin, 1973; Miller, 1974).
These studies infer that observing children in natural
settings affords a clearer picture of typical behaviors
and response modes.

The process of language sampling is one form of
naturalistic observation which focuses on language
behavior. Several techniques for recording and
analyzing samples are available (Miller, 1974).
Most of these are primarily concerned with syntactic
and grammatical aspects of language, although sampling
procedures have been developed which analyze semantic
aspects of language (MacDonald & Nickols, 1974).

The procedure for collecting child utterances
are rather standard. A home-like room wired with a
microphone, is the site for most samples. The child
whose language is being assessed and an adult, such
as a parent or teacher, are asked to play in the room
for about half an hour. Specified toys are available
depending on the child's level of development.
Materials have been approved as models for research
purposes. A transcription is made of the conversation
with accompanying situational and language context.

One of three methods of analysis is usually applied
to the transcript. The one which is held to be the
most advanced is Developmental Sentence Scoring
developed by Lee (1974). Fifty consecutive sentences
reflecting both subject and predicate are selected
from the corpus. Each sentence is scored according
to developmental level for eight categories of
grammatical form. If the sentence is grammatically
correct, an additional point is awarded. The average
score for all fifty sentences is compared with the
scores of two hundred standard English speaking
children to determine the presence and degree of
language delay or deviance. The analysis of sentences
indicates specific language needs.

If it is impossible to obtain fifty sentences,
two other methods of analysis are available. Lee
(1974) has developed a procedure called Developmental
Sentence Types which requires one hundred utterances
but not necessarily complete sentences. This method
does not provide a score but will demonstrate progress
by a comparison of repeated samplings. To aid in
assessment of semantic categories, a procedure was
developed for use at the Kennedy Center Experimental

School that allows the charting of semantic functions

and relations (Bricker & Bricker, 1973). Each

utterance from the language sample corpus is analyzed

according to semantic intent and number of words.

Through this analysis, it is possible to assess

vocabulary content, variety and frequency of semantic

relations used, and use of appropriate word order.

In this process of assessment the child's current

language can be inventoried and compared with reports

of normally developing semantic and functional

categories. Teaching can then be directed toward

lexicon, meanings, and function which are absent from

the child's language. The use of language sampling

to assess expressive language of children provides

an alternative to traditional methods of language

assessment.

A traditional way to discover a child's language

ability is by asking him to repeat certain sentences.

If a child eliminates or changes any portion of any

sentence, one might assume that he has not developed

to that level (Knapp, 1973). Generally, children's

imitations show complexity similar to that of their

free speech. Several groups of sentences have been

compiled to assess children's ability to imitate

various syntactic forms. Included among these are

Menyuk's Sentences, which require imitation of

different transformational forms, such as possessive,

contraction, or reflexive (Menyuk, 1963). Gleitman,

Shipley, and Smith's sentences (1969) develop

gradually from those that because of their form are

easy to imitate to those difficult to imitate.

Anastasiow's sentences (1969) are designed to elicit

reconstructions from standard to black English. The

correct sentence and its acceptable dialectical

equivalent are both given. The changes made by a

black child to conform to his dialect should not be

perceived as errors.

Comprehension of syntactic forms is measured by

a procedure developed by Bellugi-Klima (1971). The

child is asked to demonstrate the action described

in a sentence, using dolls and other various toys,

e.g. 'Show me the boy's Daddy'.

The cloze procedure is utilized by Dale (1972)

in an attempt to elicit a correct plural or past

tense form from a child using pictures. This

instrument can be used with children from three to

eight years old. This is an example of the type of
pattern employed: 'This is a wug. Here is another
wug. There are two of them. There are two _____.'
(wait for response).

Marion Potts developed a method to meet the need
of measuring language production to complete her study
of differences in language acquisition in various
socioeconomic groups. Her technique was a production
test administered in a sentence-completion format.
It sampled a variety of morphemic and syntactic
patterns, and avoided what Potts feels are the
problems of imitation and free speech analysis. She
indicates that the modelling aspect of imitation may
result in a biased estimate of productive control,
and free speech may circumvent the structures of
interest.

Rosen and Horne (1971) compiled a list of
standardized language development measures available.
The instruments were all designed for use with pre-
school and lower elementary grade children and were
all able to be administered by teachers or untrained
personnel. The instruments were found through a
search of Research in Education and the Current Index

to Journals in Education. These were the language

measures listed: Assessment of Children's Language

Comprehension, Cooperative Primary Tests: Word

Analysis Test, Dade County Test of Language Develop-

ment, Dailey Language Facility Test, Dominion

Individual Diagnostic Word Analysis Skills - Primary,

Houston Test of Language Development, Illinois Test

of Psycholinguistic Abilities, Parson's Language

Sample, Picture Story Language Test, Preschool

Language Scale, Riley Articulation and Language Test,

Tests of Basic Experiences: Language Subtest, and

Verbal Language Development Scale. These tests are

all annotated to provide information about the purpose

of the test; the groups for which it is intended;

test subdivisions or tested skills, behaviors, or

competencies; administration; scoring; interpretation;

and standardization.

Newcomer and Hammill (1977) observed that there

were several avenues through which to assess a child's

language development and pointed out disadvantages

and problems in each method. When a child is given

an assortment of tests to obtain a comprehensive

overview of his language skills, it must be kept in

mind that each test is uniquely standardized and
normed, the scores must be interpreted independently,
and the scores cannot be used to compare strengths
and weaknesses. A variability in scores of several
tests may be due to differences in reliability and
validity for each test. Fatigue is a major factor
to consider on both the part of the child and the
examiner, when interpreting the results of large
number of tests given in a relatively short period
of time.

Tests are administered which are purported to
measure various psychological functions presumed to
underlie language development. The problem in this
case is that it has not been demonstrated convincingly
that a practical relationship exists between tests
of psychological constructs and tests of spoken
language.

When an analysis is done of children's free
speech there is a problem of questionable reliability.
It is difficult to select a representative language
sample as a child's language varies to a great degree,
and scoring the sample presents another problem.
The language sample technique is extremely time

consuming and cumbersome to use and cannot be used effectively to identify quantitatively the child's specific language deficits.

With these disadvantages and problems in mind, Newcomer and Hammill (1977) devised a comprehensive measure of child language competence, The Test of Language Development. This language test is made up of seven subtests: Picture Vocabulary - the child points to one of three pictures when given an oral stimulus; Oral Vocabulary - the child gives his definition orally to a one word stimulus; Grammatic Understanding - the child points to one of three pictures when given sentences, verbally, which contain various syntactic forms; Sentence Imitation - the child repeats thirty sentences of varying grammatical structures; Grammatic Completion - this samples various morphemic and syntactic forms by having the child complete a sentence given by the examiner; Word Discrimination - tests a child's ability to discriminate between similar phonemes by identifying twenty pairs of word as the same or different; Word Articulation - the child pronounces a word when given a pictoral and sentence completion stimuli.

Within the framework of one test, a comprehensive
picture of the child's language ability, his strengths
and his weaknesses can be seen. Fatigue is generally
not a factor because the whole battery of subtests
takes only thirty minutes to administer. The subtests
are each normed with a comparable language test and
then normed as a total test with over one thousand
children from various regional areas in the United
States, with various socioeconomic backgrounds, and
with various racial backgrounds.

No research studies could be located which used
the Test of Language Development as part of an
investigation. With the qualities which the instru-
ment possesses, it is possible that it will be used
in future studies to explore children's language
ability and compare various aspects of language
development with any number of factors; e.g. environ-
mental, physical, sexual, scholastic and others.

Factors Which Influence Language Development

Four areas will be explored in considering
factors which have an effect on a child's language
competence and its development. These areas are:

equipment the child possesses, home influences, school

influences, and community influences.

## Equipment the Child Possesses

The first area to be investigated when con-

sidering influences on a child's language development

is the equipment the child possesses for language

growth. The child must be able to see, hear, feel,

move, understand, make associations, coordinate

activities and adjust to the environment if he is to

grow at a normal rate in language ability. Some

factors necessary for the emergence of a language

process are the physical, such as health, nutrition,

glandular secretions that determine growth, muscular

coordinations that can be trained, sensory and motor

equipment that receives and responds to stimuli; and

the psychological, such as intelligence and personal

adjustment (Meader & Muskins, 1950).

Language development appears to be a function of

cognitive processing operations in productive inter-

action with a linguistic environment and this

developmental interaction continues as the brain

matures (Athey, 1971; Lenneberg, 1967; Slobin, 1966).

The child must be able to make associations, to build
neural pathways, to receive impressions and to re-
spond with activity. He must have sufficient
intellectual capacity to learn language habits and
retain them. He does not learn all the associations
immediately, but begins to acquire them during
infancy and continues this intellectual process
throughout his life. The relationship between in-
telligence and the development of linguistic ability
has frequently been pointed out and emphasized by
research (Carmichael, 1946; Merry & Berry, 1950;
Van Riper, 1947; Watts, 1947; West, Kennedy, & Carr,
1947).

The ability to hear is of great importance to
the learning of language. The child must be able to
receive and comprehend the auditory stimuli that
bombard him, or he will not respond with the vocali-
zation and articulatory movements that will develop
into oral language. A deaf baby will gurgle and cry,
as deafness does not inevitably mean muteness, but
he will not continue to use vocal sounds in response
to others unless he receives special training (Gesell
& Amatruda, 1947; Van Riper, 1947; Van Riper, 1950).

A child must master the physical movements of articulation and phonation, if language is to be learned. As in most other areas of development, language and speech abilities progress in a continuing manner, though periods may overlap, and the rate of progress may vary (Mayer, 1974). An efficient mechanism for producing speech sounds is needed by children. In the language learning process, a child needs speed, accuracy, steadiness, and strength of voluntary movement (Merry & Berry, 1950).

Even at an early age, a child has language abilities, chiefly in listening and speaking. He lives in a predominately oral world for five or six years but as he grows older, he acquires more and more facility in using the equipment he has for all the language skills (Wells, 1953). Throughout life, one depends on intellectual abilities, association skills, muscular coordination, vision, hearing, kinesthetic sense, physical structure and environmental experiences as a means of facilitating the use of language.

Home Influences

The home is the place where a child has his first language lessons and the varying degrees of language skills children display when they reach school-age, are to a considerable degree the products of the kinds of experiences the children have had in their homes during the pre-school years. It has been shown that babies who are brought up in a family group, situation vocalize more and in a more advanced manner than babies raised in an institutional environment (Brodbeck & Irwin, 1946; Goldfarb, 1943a, 1943b; Freud & Burlingham, 1944; Goldfarb, 1945; Roudinesco & Appell, 1950). The evidence shows that the lack of individual attention and mothering that the child raised in an institutional environment experiences results in a general retardation in motor, language, and social behavior and that the most serious retardation occurs in the language area.

Another group of studies indicates that the amount of contact the child has with his mother who is his first language teacher is related to the rate at which he progresses in language growth. The child gives his first responses and echoing vocalizations

to his mother's smile and voice (Stengel, 1947).

Mothers interpret the culture to children through the

medium of language and impress upon children the

socializing experiences of living by the rules of

formal communication. The more opportunity a child

has to hear a friendly voice and to imitate a correct

model, the more rapid is his language growth (McCarthy,

1953). The only child, who has the undivided attention

of the mother over a longer period of time than other

children, is the most precocious child in learning to

speak and use the language (Davis, 1937). However,

twins and others of multiple births, are often re-

tarded in language development (Blatz, Fletcher, &

Mason, 1937; Davis, 1937; Day, 1932). Girls who

usually spend more time with their mothers than boys,

often are more advanced in language than boys (McCarthy,

1930).

Further indications of qualitative differences,

in the home atmosphere of children who are advanced

or retarded in language development comes from a

study by Milner (1951). This investigator found that

children who were in the lowest third of their class

in first grade language scores did not eat breakfast

with their parents. No adult talked to them in two-

way conversations. Some of the children heard only

orders or instructions, and there was no active

participation in conversation by these children either

before school, at supper, or during the usual house-

hold routines when most children have considerable

opportunity for conversation and linguistic stimula-

tion in the family circle. It was also revealed that

this group of children did not receive any outward

show of affection from significant adults in their

homes and that they received direct physical punish-

ment as a disciplinary measure. In contrast, the

children whose language scores were in the upper third

of their class, received a considerable amount of

affection and evidence of acceptance by their parents.

This group of children was disciplined with con-

trolling, preventing, and prohibitory techniques

rather than with physical punishment.

Bilingualism presents an additional problem for

children adjusting to a school situation. The in-

ability to communicate with a new language system

can cause insecurity at any age level. If interest

is shown in the child's language and respect is

given the culture and native tongue of a child, his

attitude about himself and others will be positively

affected.   One's language habits have deep emotional

roots (Buxbaum, 1949; Feldman, 1948).   The ease with

which one overcomes a foreign accent, or the tena-

ciousness with which he retains it may be an un-

conscious symbolic reaction to people and events in

early childhood with which such speech patterns have

become associated.

Children differ in the range of experiences they

have been exposed to by the home situation (Drever,

1915-16).   Those who live in, or have visited the

country, have probably acquired words like 'tractor',

'pasture' and 'acre' in their vocabularies.   Those

whose families have broadened their experiences by

taking them to visit the seashore, a zoo, or a dairy,

and who take time to explain words and activities

to the children will have much more extensive

vocabularies on which to build their language arts,

than children who come from barren homes, who have

never been on a vacation, been to a farm, or had a

ride on a train.

Some homes have provided the child with many
playmates near his own age and some children have
older brothers and sisters to play with. On the other
hand, he may have only younger children to play with
or perhaps he has been isolated from children of his
general age group. All of these children might come
to school ready for different types of activities
and experiences. The range of language needs of
children is wide because of the ways the home environ-
ment makes children different as they approach school
and further language development situations (McCarthy,
1953).

School Influences

A child's growth in language during his school
years is influenced by many factors. The teacher is
an important aspect of the language curriculum. The
teacher's voice, vocabulary, enunciation, pronuncia-
tion, choice of words, and sentence structure all
influence children in a variety of ways. Children
also react to the personality of the teacher and the
climate for learning which is developed in the
classroom (Strickland, 1953). Children sense the

teacher's attitudes, values, and ideals even though they may not be expressed in words.

Teachers use language to bring about many re-actions in children. Language may be used to stimu-late thinking or to discourage it. The teacher's use of language can help children to reason independently or to accept statements without question. A child's self-respect and sense of worth might be affected by a teacher's intolerance or impatience.

Language is used by teachers to control behavior, but the effectiveness of language control varies with several factors. Olson (1938) calls attention to the fact that in nursery school, approximately ninety percent of the controls are through language, but as children grow older, less effort is spent on language designed to produce socially acceptable behavior. A study of language controls used by teachers was conducted by Johnson (1938). These generalizations were drawn: Suggestions and en-couraging remarks impelled children to accept or to continue simple tasks, while children who were given no guidance or approval frequently abandoned the tasks; specific requests were more effective than

general ones; pleasant requests were more effective
than scolding; hopeful remarks were more valuable
than depriving ones; and simple requests were more
effective than threats. According to Olson (1938),
language is circular in character. Integrative
language on the part of the teacher produces integra-
tive behavior on the part of the child, while in-
effective, or devisive language, may produce resist-
ance or aggression.

Young children are particularly influenced by the
teacher's language. They imitate quite unconsciously
and when they tell a story or repeat a poem they have
heard a teacher read they are likely to use the
teacher's manner, speech patterns, rhythm and dramatic
interpretation (Gesell & Gesell, 1946). Opportunities
to share and report orally under the teacher's guidance
help children learn to express themselves with in-
creasing ease and clarity (Dawson, 1951; Strickland,
1951). These experiences also give children an
opportunity to listen and to react to the contributions
of others. These abilities grow more rapidly in the
group situation provided at school than in neighborhood

play or at home with people of varying ages and

relationships.

In the past, the atmosphere in the classroom was

often one of isolation for the student, communication

among children being discouraged. Strickland (1951)

found that the classroom has changed during this

century to more of a workshop atmosphere, where

creativity and cooperation are channeled to experience

and learning. A study of the relationship of school

atmosphere to children's reactions in frustrating

situations was revealing. Mensch and Mason (1951)

discovered that in the traditional school studied

children's reactions were over-conforming, while in

the more progressive school they were under-conforming.

These investigators concluded that their data support

other studies which indicate that more permissive

environments provide conditions under which children

are more likely to initiate development of their own

capacities.

One of the special tasks of the schools is the

introduction of children into the understanding and

use of written language. Modern schools center their

first efforts on building interest in poetry, stories,

books, and helping children enjoy them (Almy, 1949).
The school's influence on children through books,
reading, and literature has four major facets,
according to Almy. These facets are: the provision
of adequate quantity and variety of books and other
materials and sufficient time to use them; help
with developing reading skills; guidance in the
selection and use of reading materials; and any
therapy which may be needed.

In conclusion, it seems that the influence which
the school exerts on the language development of each
of its pupils is only one of many influences. Some
of these strengthen the school's influence, while
others undermine it. The language behavior of each
child is too complex for any single institution to be
held entirely responsible for it.

Community Influences

Research studies of the effect of community influ-
ences on language growth are few. Available studies
show, however, that pre-teen children desire gangs,
clubs, and other groups, free, or partially free of
adult domination. Crosby (1953) states that this

desire for freedom is sometimes shown in the use of

language which is offensive to adults or may violate

home or community standards. Zachry and Lighty (1940)

cite the values of group life activities for children

of elementary age in terms of establishing inde-

pendence from parental control. The pre-adolescent

groups' language is usually characterized by a love

of slang which is frequently indigenous to the local

community. This may be a continuation of the interest

shown by the young child who is experiencing his

initial use of language and may provide a clue, as

suggested by Strang (1949), for the introduction of

the learning of foreign languages in the elementary

schools.

The socioeconomic status of a community is felt

by some researchers to be an important factor in

children's language growth. Strickland (1951) cites

a study of vocabulary of several thousand children

which showed that at ten years of age, children of

a high socioeconomic group scored on an average

fifty percent higher than children from poorer

communities. The difference between the two groups

diminished with increase in age, until at age fourteen
there was little difference in vocabulary scores.

Language growth in young children can develop
through vital experience in community living. The
community experience can be content for developing
language. The church is an influence within the
community with which the child may come into contact.
Plagemann (1951) reported an experience of a father
who became a Sunday School teacher and used skillful
language processes, including discussion, dramatizing,
and script writing, to help children change their
attitudes and behavior.

Libraries contend with media such as television
and radio as influencing factors on children's
language development. Crosby et al. (1943) studied
six hundred primary children's recreational pursuits
in a community where close working relations existed
between public schools and public libraries. The
study revealed that playing with friends and listening
to the radio were the favorite out-of-school activities
of the participating children. Thirty-eight percent
of the children used the public library regularly and

eighty-three percent read for pleasure daily.

Camping experiences, scouting groups, and
recreation programs are among the organized activities
which can aid children's language growth. These
programs should provide, in addition to the outdoor
living and physical exercise aspects, related
activities such as dramatics, story-telling, creative
writing, and discussion (Hammett & Musselman, 1951).

Many years ago, Walt Whitman in "Leaves of Grass"
described the interaction between the child and his
community with the words of a poet. These lines show
us a potent picture of the impact of community life
on the language of the growing child:

>There was a child went forth every day,
>And the first object he look'd upon, that
>    object he became,
>And that object became part of him for
>    the day or a certain part of the day,
>Or for many years of stretching cycles of
>    years.
>
>The early lilacs became part of this child
>And grass and white and red morning-glories,
>    and white and red clover, and the song
>    of the phoebe-bird.
>
>And the fish suspending themselves so
>    curiously below there, and the
>    beautiful curious liquid,
>And the water-plants with their graceful

flat heads, all became part of him.

And the schoolmistress that pass'd on her
way to the school,
And the friendly boys that pass'd, and the
quarrelsome boys,
His own parents, he that father'd him and she
that had conceiv'd him in her womb and
birth'd him,
They give this child more of themselves
than that,
They gave him afterward every day, they
became part of him.

The family usages, the language, the company,
the furniture, the yearning and swelling
heart,
Affection that will not be gainsay'd
The sense of what is real, the thought if
after all it should prove unreal,
The doubts of daytime and the doubts of
nighttime.
The curious whether and how, whether that
which appears so is so, or is it all
flashes and specks?

These became part of that child who went
forth every day,
And who now goes, and will always go
forth every day.

## Reading Achievement

Reading achievement is a standardized measure of
the mastery of the sub-skills of reading.

## Assessment of Reading Achievement

Since this study defines reading achievement as
a standardized measure of skills, standardized

testing is the area of assessment researched. In

1914 there were around 139,000 soldiers in the United

States Army (Finder, 1975). With the onset of World

War I, the Army grew rapidly to around two million.

Therefore, the Army was faced with an immense task

of sorting. Decisions had to be made promptly about

which people should be selected for certain types of

jobs, so psychologists were put to work on the

problem. One result was the Army Alpha Test. When

this test was administered to a random group, the

Army was told who was high, middling, and low on

this particular instrument which was claimed to

measure mental alertness. When the war ended, some

of the psychologists who developed this type of test

took jobs in colleges and universities. They taught

the techniques of test construction they had developed

in the Army and adapted these to civilian education

uses. A result is that today such normed or stand-

arized tests are widely used to assess achievement in

many areas. Reading is one of these areas. The pur-

pose of standardized tests is to determine how one stu-

dent compares with another on a scale from high to low.

Available reading achievement tests, consisting
of batteries of sub-tests, are designed to measure
component skills necessary in reading (Calfee &
Venezky, 1968). The list of standardized reading
achievement tests is extensive and all have as a
purpose assessment of various sub-skills of reading
or reading readiness.

The one examined more closely in this investiga-
tion is the Metropolitan Achievement Test - Primary
II. A standardized achievement test is different from
teacher-made tests in that it provides for comparable
evaluation in different subject areas, comparable
evaluation from year to year, and has valuable
supplementary information such as national norms and
item data (Durost, et al., 1971). The standardization
samples were selected to represent the national
population in terms of geographic region, city, size,
socioeconomic level, and public versus non-public
schools. The Primary II battery contains these sub-
tests in the area of reading: Word Knowledge - forty
items measure the extent of pupils' reading vocabulary.
Seventeen items are in the word-picture association

format. Twenty-three items require pupils to identify a synonym, antonym, or classification for a given word; Word Analysis - thirty-five items measure pupils' knowledge of sound-letter relationships or skill in decoding. Pupils must identify a dictated word from several printed words which have similar configurations or sound patterns; Reading - forty-four items measure pupils' comprehension of written material. Thirteen items require pupils to select one of three sentences which best describes a given picture. Thirty-one items require pupils to read a paragraph and answer questions about that paragraph.

This type of test helps educators evaluate pupil progress over the years and identifies particular strengths and weaknesses among the pupil population. More specifically, the tests, including supplementary interpretive materials are designed to help teachers plan for instruction based on pupils' needs and differences and to evaluate the effects of previous instruction; and to help administrators assess school-wide progress toward educational goals and to plan for and evaluate curricular changes. By using the sub-test results, various aspects of reading

achievement might be compared with many factors, such

as other areas of scholastic achievement, environ-

mental, physical, sexual, and other elements one

wishes to investigate.

## Factors Which Influence Reading Achievement

Reading achievement is one of the most widely

researched topics in education. After a comprehensive

analysis, Chall (1967) summarized the research con-

ducted up to 1965 and advanced the following ideas

for consideration (pp. 83-85):

1. The first step in learning to read in one's
native language is essentially learning a
printed code (phonics) for the speech we
possess.

2. Early stress on code learning, ... not
only produces better word recognition and
spelling, but also makes it easier for
the child eventually to read with
understanding...

3. Analysis neither proved nor disproved
that their (the linguists') methods (or
those of the alphabet reformers) were
better than the other code-emphasis
methods, e.g. systematic phonics.

4. There was no evidence that either a code
or meaning emphasis fosters greater love of
reading or is more interesting to children.

5. There is some experimental evidence
that children of below-average and average

intelligence and children of lower socio-
economic background do better with an
early code emphasis.

6. A stronger code emphasis would help
prevent reading failure, although never
eliminate it entirely.

When looking at the specific factors which affect

reading achievement, the authors of an extensive

study of the Newton, Massachusetts, public schools

(Austin, et al., 1961) noted the importance of

factors within the child, such as mental ability,

physical attributes, the effect of home environment,

and factors within the child's school experience.

The following conclusions were drawn relating to

school-based factors (p. 155):

1. Children who attended nursery school
before entering first grade had significantly
higher reading achievement ... than those
who did not.

2. It made no difference at what age the
child entered first grade.

3. Moves between schools, whether within the
city or from outside, appeared to have no
effect on the child's reading performance ...

4. There was no apparent relationship
between the pupil's attendance record and
his reading success ...

5.  Reading success in relation to mental
ability varied significantly from school
to school.

6.  Reading success varied significantly
from teacher to teacher, even after the
effect of school variation per se were
eliminated ... The skill of the teacher
is probably more important than the
amount of teaching experience she has had
... Some evidence pointed to the possi-
bility that the teacher's knowledge of
English orthographic principles (sometimes
called 'phonics') had some relation to her
teaching success.

Weber (1971) provided another summary of the

school-based factors associated with reading achieve-

ment of third graders.  He studied four inner-city

schools in the United States where third grade

reading achievement was at or above the national grade

level norm.  Weber's descriptions of these schools

indicated that the following factors are associated

with successful reading programs in inner-city

schools:  strong leadership, high expectations, good

atmosphere, strong emphasis on reading, additional

reading personnel, use of phonics, individualization,

and careful evaluation of pupil progress.  Among the

characteristics which he classified as non-essential

were:  small class size, achievement grouping, quality

of teaching, the ethnic background of the principals

and teachers, the existence of pre-school education,

and elaborate physical facilities.

Data connecting sixth grade reading compre-

hension scores with a variety of factors was provided

through a study by the Board of Education for the

Borough of North York (1972). Information collected

from student questionnaires indicated that readihg

comprehension test scores are positively related to

pupil self-ratings, possession of a library card,

the amount of time spent reading for enjoyment at

home, the amount of reading done on an average night

for homework assignments, the variety of subjects

in which books are read for enjoyment, and homes in

which English is the only language spoken. Ruddell

(1968) found that when instruction in syntax and

morphemes was added to a primarily phonological

approach children's reading ability improved as

compared with reading achievements obtained through

basal readers alone.

There are a number of studies which attempt to

isolate the school-based factors having an effect on

reading achievement, but few of these studies deal
with students beyond fourth grade and the results
are often contradictory (Dilling & Farrell, 1973).
What these studies provide, however, is a number of
hypotheses which could be tested in other areas at
other grade levels.

Another area into which numerous researchers
have delved, is the sexual factor in reading
achievement. The sex factor was one consideration
of a Florida study by Spache and others (1966) to
determine the effect of an intensified and extended
reading readiness program upon first grade reading
achievement. Findings disclosed that sex differences
favored girls. Tanyzer and Albert (1966) investigated
the effect of three different basal systems on the
reading achievement of first grade children according
to sex and different levels of intelligence. They
found that in each of the three basal systems, girls
achieved higher mean scores. Many other studies
(Wyatt, 1966; Schneyer, 1966; Hanson, 1967; Hammond,
1967; Stroud & Lindquist, 1942; Aven & Chrisp, 1967)
which ranged from investigations of first graders
to college students, found girls achieving

significantly higher scores on various reading achievement tests. It is apparent that boys may need special attention in this area of the learning process.

The skill, effort, and the concern required to help children expand upon, or in some cases, overcome other influences on their reading achievement present a great challenge. The teachers' reward is the gift of literacy to their students - the 'bequest of wings' bestowed upon their pupils. As expressed by Emily Dickinson ...

He ate and drank the precious words,
His spirit grew robust;
He knew no more than he was poor,
Nor that his frame was dust.

He danced along the dingy Days,
And this bequest of wings
Was but a book. What liberty
A loosened spirit brings.

(cited in Johnson, 1961, p. 302)

## Summary

As shown in this review, both language development and reading achievement are topics which are extensively researched in the literature. Assessment of

each is carried out by many various methods. Many

diverse opinions exist concerning the best modes of

measurement. Many factors affect both language

development and reading achievement. Most research

suggests that the home, the school, the community and

the factors within the child, such as physical and

psychological aspects, influence a child's total

competence in language and reading. The studies'

conclusions vary, in that each emphasizes an area

unique to the interests and concerns of the individual

doing the research. It must be kept in mind that

every aspect of the child's environment affects him

and the results are evident in the assessment of a

child's language development and measurement of his

reading achievement.

Chapter III

The Research Design

## Purpose

This research study was concerned with the degree of relationship among several language variables and several categories of reading achievement. The study answered the following questions:

1. What is the relationship between Picture Vocabulary competence and Word Knowledge?

2. What is the relationship between Picture Vocabulary competence and Word Analysis?

3. What is the relationship between Picture Vocabulary competence and Comprehension?

4. What is the relationship between Oral Vocabulary competence and Word Knowledge?

5. What is the relationship between Oral Vocabulary competence and Word Analysis?

6. What is the relationship between Oral Vocabulary competence and Comprehension?

7. What is the relationship between Grammatic Understanding competence and Word Knowledge?

8. What is the relationship between Grammatic Understanding competence and Word Analysis?

9. What is the relationship between Grammatic Understanding competence and Comprehension?

10. What is the relationship between Sentence Imitation competence and Word Knowledge?

11. What is the relationship between Sentence Imitation competence and Word Analysis?

12. What is the relationship between Sentence Imitation competence and Comprehension?

13. What is the relationship between Grammatic Completion competence and Word Knowledge?

14. What is the relationship between Grammatic Completion competence and Word Analysis?

15. What is the relationship between Grammatic Completion competence and Comprehension?

16. What is the relationship between Word Discrimination competence and Word Knowledge?

17. What is the relationship between Word Discrimination competence and Word Analysis?

18. What is the relationship between Word Discrimination competence and Comprehension?

19. What is the relationship between Word Articulation competence and Word Knowledge?

20. What is the relationship between Word Articulation competence and Word Analysis?

21. What is the relationship between Word Articulation competence and Comprehension?

## Methodology

### Subjects

The sample consisted of thirty second grade students, seven or eight years old, twenty males and ten females, who attend a middle class suburban elementary school in Western New York State. The students were selected at random from three multi-aged grouped classrooms.

### Instruments

The Test of Language Development, Empiric Press, 1977, is an instrument which gives a measure of each component of language competence which this study examined. The subtests which measure a child's semantic development are Picture Vocabulary and Oral Vocabulary. The subtests which provide a measure of

a child's syntactic competence are Grammatic Under-standing, Sentence Imitation, and Grammatic Comple-tion. Phonological skills are measured by Word Discrimination and Word Articulation.

The Test of Language Development was developed by Phyllis Newcomer and Donald Hammill and is not a global but an itemized assessment of children's language competence. Receptive and expressive skills are both measured by this instrument. Receptive skills are assessed by Picture Vocabulary, normed with the Peabody Picture Vocabulary Test, Grammatic Understanding, normed with the North Western Syntax Screening Test, Grammatic Completion, normed with the I.T.P.A. subtest Closure, and Word Discrimination, normed with Wepman Test of Auditory Discrimination. Expressive skills are measured by Oral Vocabulary, normed with the W.I.S.C. subtest Oral vocabulary, Sentence Imitation, normed with the North Western Syntax Screening Test, expressive subtest, Grammatic Completion, normed with the I.T.P.A. subtest Closure, and Word Articulation, normed with the Templin-Darley Articulation Test. The total Test of Language Develop-

ment was normed with 1,014 children across the United
States, in urban and rural areas, with children of
diverse socioeconomic backgrounds, and various racial
groups. The test was devised to identify areas of
language deficit, and subtests may be administered
independently. The test involves no writing by the
child. Only verbal responses or pointing at correct
pictures are required.

The Metropolitan Achievement Test - Primary II,
Harcourt Brace Jovanovich, Inc., 1974, measures the
categories this study identified in reading achieve-
ment with the subtests Word Knowledge, Word Analysis,
and Reading (Comprehension).

## Procedure and Statistical Design

The Metropolitan Achievement Test - Primary II,
form G, was administered to the total sample to
assess various categories of the children's reading
achievement: Word Knowledge, Word Analysis, and
Comprehension (Reading). Within two weeks of the
administration of this group achievement test, The
Test of Language Development was given individually
to each student in the sample to assess various

aspects of each child's language ability: Picture Vocabulary, Grammatic Understanding, Oral Vocabulary, Sentence Imitation, Grammatic Completion, Word Discrimination, and Word Articulation. The data collected from the scores of these tests were computer analyzed to determine correlation coefficients among the variables.

## Summary

The degree of relationship among seven language variables and three categories of reading achievement was determined by obtaining from a sample of second graders scores which indicate varying degrees of competence in the language and reading subskills. The scores were obtained by administering The Test of Language Development and The Metropolitan Achievement Test - Primary II, to the sample. Correlation coefficients were determined among the variables.

Chapter IV

Analysis of Data

## Purpose

The relationships among several language vari-
ables and three categories of reading achievement
were investigated in this study. Seven language
variables were assessed by administering The Test of
Language Development to a sample of thirty second
grade students. The language competencies assessed
were Picture Vocabulary, Oral Vocabulary, Grammatic
Understanding, Sentence Imitation, Grammatic
Completion, Word Discrimination, and Word Articula-
tion. The sample was also given the Metropolitan
Achievement Test - Primary II to assess Word Know-
ledge, Word Analysis, and Comprehension. Correla-
tion coefficients were determined among the variables.

## Findings and Interpretations

The data were computer analyzed by the 'Inter-
active Data Analysis' system of programs chained to
the control program $IDA at State University College
at Brockport, New York. When correlation coefficients

were computed among the language and reading variables the following results were obtained: (see Table 1)

Table 1

Correlation Coefficients Determined Among

Language and Reading Variables

| | Reading Variables | | |
|---|---|---|---|
| Language Variables | Word Know. | Word Anal. | Comp. |
| Picture Vocabulary | .3528 | .2450 | .3740* |
| Oral Vocabulary | .1995 | .1422 | .1846 |
| Grammatic Understanding | .3483 | .2811 | .5380* |
| Sentence Imitation | .2875 | .2154 | .3303 |
| Grammatic Completion | .2641 | .3310 | .0839 |
| Word Discrimination | -.0571 | -.0992 | .0705 |
| Word Articulation | -.1116 | -.0934 | -.0118 |

* statistically significant correlation

1. The correlation coefficient between Picture Vocabulary competence and Word Knowledge is .3528.

2. The correlation coefficient between Picture Vocabulary competence and Word Analysis is .2450.

3. The correlation coefficient between Picture

Vocabulary competence and Comprehension is .3740.

4. The correlation coefficient between Oral Vocabulary competence and Word Knowledge is .1995.

5. The correlation coefficient between Oral Vocabulary competence and Word Analysis is .1422.

6. The correlation coefficient between Oral Vocabulary competence and Comprension is .1846.

7. The correlation coefficient between Grammatic Understanding competence and Word Knowledge is .3483.

8. The correlation coefficient between Grammatic Understanding competence and Word Analysis is .2811.

9. The correlation coefficient between Grammatic Understanding competence and Comprehension is .5380.

10. The correlation coefficient between Sentence Imitation competence and Word Knowledge is .2875.

11. The correlation coefficient between Sentence Imitation competence and Word Analysis is .2154.

12. The correlation coefficient between Sentence Imitation competence and Comprehension is .3303.

13. The correlation coefficient between Grammatic Completion competence and Word Knowledge is .2641.

14. The correlation coefficient between Grammatic Completion competence and Word Analysis is .3310.

15. The correlation coefficient between Grammatic Completion competence and Comprehension is .0839.

16. The correlation coefficient between Word Discrimination competence and Word Knowledge is -.0571.

17. The correlation coefficient between Word Discrimination competence and Word Analysis is -.0992.

18. The correlation coefficient between Word Discrimination competence and Comprehension is .0705.

19. The correlation coefficient between Word Articulation competence and Word Knowledge is -.1116.

20. The correlation coefficient between Word Articulation competence and Word Analysis is -.0934.

21. The correlation coefficient between Word Articulation competence and Comprehension is -.0118.

When the number of a sample is thirty, the correlation coefficient must be .3610 for a significant relationship to exist. When the findings of the statistical analysis of this study are compared to this figure, it is observed that a significant relationship exists between the students' competence in Picture Vocabulary and Reading Comprehension. There is also a significant relationship between the

language variable Grammatic Understanding and Reading

Comprehension.

A correlation coefficient of -.3610 is equal to

one of .3610. The only difference is the sign which

shows that a negative correlation exists between the

variables in the case with the negative coefficient.

There are several negative correlations reported

through the analysis of the data. These are between

Word Discrimination and Word Knowledge, Word Dis-

crimination and Word Analysis, Word Articulation and

Word Knowledge, Word Articulation and Word Analysis,

and Word Articulation and Comprehension. These

negative correlations are not significant, however,

as they would have to exceed -.3610 to show signifi-

cance at the .05 level.

The absence of relationship is designated by a

correlation coefficient of .00. Several correlation

coefficients determined in this study show almost no

relationship between some variables. When both

measures in the phonological area of language develop-

ment, Word Discrimination and Word Articulation, were

compared to Word Knowledge, Word Analysis, and

Comprehension, almost no relationship was present

among the variables.

## Summary

Correlation coefficients were determined among
seven language development variables and three aspects
of reading achievement competence. As the relation-
ships were investigated, only two were found to be
significant. These were between Picture Vocabulary
and Comprehension and between Grammatic Understanding
and Comprehension. There were several variables which
showed negative correlations. Almost no relationship
existed between some of the variables. This investi-
gation found a variety of relationships among
language and reading variables.

Chapter V

Conclusions and Implications

Summary

When correlation coefficients were determined
among seven language development variables and three
aspects of reading achievement, a variety of relation-
ships were ascertained. This investigation found
significant relationships between several variables,
negative correlations between other variables, and
almost no relationship between some variables. A
variety of relationships exists among variables of
language competence and reading achievement.

Conclusions

This study found a significant relationship
between children's competence in picture vocabulary
knowledge and their reading comprehension achievement.
A significant relationship was also determined between
children's grammatic understanding and their reading
comprehension achievement.

Several variables showed negative correlations.
The phonological aspect of language development was

the one showing negative correlation to several

reading achievement variables. Word discrimination

was found to have negative correlation to both word

knowledge and word analysis, and almost no relation-

ship to comprehension. Word articulation showed

negative correlation to all aspects of reading

achievement investigated; word knowledge, word

analysis, and reading comprehension.

Other variables had very little relationship

between them. There was almost no relationship

between grammatic completion competence and compre-

hension. Comprehension ability was also shown to

have very little relationship to word discrimination

competence.

Varying degrees of relationship were determined

among other variables of reading achievement and

language competence. A diversity of relationships

among language and reading variables was found in this

investigation.

## Implications for Classroom Practice

A factor to be considered as implications are

discussed is that the existence of a relationship

between two variables does not necessarily imply a
causal connection nor does it provide any informa-
tion about the direction of the causality, should it
exist.

Since a significant relationship was found
between children's competence in picture vocabulary
and their reading comprehension, the classroom teacher
should be aware that by improving children's
competence in either of these areas, the possibility
exists that the other would be affected. There also
exists a significant relationship between children's
grammatic understanding and their reading compre-
hension. In the classroom, activities to strengthen
either aspect might affect the children's competence
in the other area. Until causality and its direction
are determined, the classroom teacher would not know
which aspects of reading or language, when strength-
ened, would affect other variables.

## Implications for Future Research

Research might be conducted to determine exist-
ence of causality between related variables. If a
causal connection is found, directionality must then

be determined. These would be the next steps in
following up this investigation.

Another interesting and valuable extension of
this study would be to replicate the design with a
sample or samples of children of grade levels other
than second. Interesting comparisons could be made
by investigating the relationships among several
language variables and various categories of reading
achievement at different grade levels. Since lan-
guage competence follows a certain developmental
process, it would be of importance to know what
variables are related at various developmental stages.

It would be worthwhile to investigate the differ-
ence between the relationship among the variables of
reading and language competence when a sample of boys
and a sample of girls are compared.

The implications for future research are un-
limited. This investigation can be used as a basis for
many other studies. It shows varying relationships
among aspects of language development and reading
achievement and each of these relationships could be
examined in greater depth and from different angles.

It is the expectation of this investigator that this
will happen.

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