

8-1985

Field Dependence/Independence and the Effect of a Multi-Level Reading Guide on the Content Area Comprehension of Eighth Grade Social Studies Students

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FIELD DEPENDENCE/INDEPENDENCE AND THE EFFECT OF A MULTI-LEVEL
READING GUIDE ON THE CONTENT AREA COMPREHENSION OF
EIGHTH GRADE SOCIAL STUDIES STUDENTS

THESIS

Submitted to the Graduate Committee of the
Department of Education and Human Development
State University College at Brockport
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Education

by

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August, 1985

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Table of Contents

	Page
List of Tables	iii
Chapter	
I. Statement of the Problem	1
Purpose	1
Questions to be Answered	1
Need for the Study	1
Definitions	3
Limitations of the Study	4
Summary	4
II. Review of the Literature	5
Purpose	5
Field Dependence/Independence and Reading	5
Field Dependence/Independence and IQ	11
Summary	13
III. Design of the Study	14
Purpose	14
Hypotheses	14
Methodology	14
Summary	18
IV. Statistical Analysis	19
Purpose	19
Hypotheses	19
Principal Findings	19
Additional Findings	22
Summary	23
V. Conclusions and Implications	24
Purpose	24
Conclusions	24
Implications for Further Research	25
Implications for the Classroom	26
Summary	26
References	26

List of Tables

Table	Page
1. Differences in Mean Scores on Pretests and Posttests Following Instruction Using Multi-Level Reading Guides . .	21

Abstract

This study investigated the relationship between field dependence/independence and IQ, field dependence/independence and reading achievement, and field dependence/independence and the effect of a multi-level reading guide on reading comprehension.

A sample population of forty-nine eighth grade students was given the Group Embedded Figures Test (GEFT), a measure of field dependence/independence. Scores from the Otis-Lennon Intelligence Test and the Stanford Achievement Test which had been administered prior to the study were obtained from the students' records. The students had been identified as below average in social studies and were members of four classes, all taught by the same teacher. Two classes were assigned to the treatment group, which completed multi-level reading guides while reading their text. The other two classes in the control group read the text without the guides. Pretest and posttest scores on the targeted social studies unit were then compared.

No statistically significant correlations were found between IQ and field dependence/independence and reading achievement. In addition, in the treatment group there was no significant difference in the mean gain score of the field dependents between the pretest and posttest and the mean gain score of the field independents.

This analysis leads to the conclusion that for this testing population of eighth graders, IQ is not a determining factor of field dependence/independence, and field dependence/independence is not a determining factor of reading achievement; nor does added structure in content area reading benefit field dependent students more than field independent students.

Chapter I

Statement of the Problem

Purpose

The purpose of this study was to determine if field dependent, below average eighth grade social studies students benefit more from the use of a multi-level reading guide than field independent students of the same age and ability.

Questions to be Answered

The study attempted to answer the following questions:

Is there a significant positive correlation between IQ and field independence in eighth grade, below average social studies students?

Is there a significant positive correlation between reading achievement and field independence in eighth grade, below average social studies students?

Does the content area reading comprehension of field dependent, below average eighth grade students increase more than that of field independent students of the same age and ability when reading is aided by the use of a multi-level reading guide?

Need for the Study

In recent years there has been an increased emphasis on the role that individual differences play in the education of children. Smith and Renzulli (1982), in reference to learning styles, state that if we are to acquire the full educational benefits from the conception

of individual differences, we need to respect a wide range of characteristics that make children novel as learners.

This concern for individual differences has also been expressed in the area of reading. As more knowledge is gained about the range and complexity of individual differences and how they affect academic progress, educators become increasingly convinced that many students who do not read well do not do so because the instructional method used to teach them does not match their learning style characteristics (Carbo, cited in Price, Dunn & Sanders, 1981).

One area of individual differences that has been addressed in terms of reading is cognitive style. Annesley and Scott (1977) contend that those students with normal ability who do not learn to read may need a different curriculum and a different teaching methodology because of their cognitive style.

Research has shown that there appears to be a significant correlation between reading achievement and the cognitive dimension of Field Dependence/Independence. Correlations ranging from .464 to .781 were found (Baber, 1976; Conoley, 1976; Kaplan, 1979; Pultz, 1979). Field independent individuals are prone to experience their surroundings in an analytical manner. They see objects as discrete from their backgrounds. Conversely, field dependent subjects tend to experience their surroundings in a rather global way and experience difficulty separating objects from the prevailing field or context (Witkin, Dyk, Faterson, Goodenough & Karp, 1962). Some researchers have determined that field dependent readers benefit from added structure in reading material (Christiansen, Annesley, & Scott, 1980; Scott, Annesley, Maher, & Christiansen, 1980; Provost, 1981).

It has been indicated by researchers that there is a need to examine the relationship between Field Dependence/Independence, reading comprehension and specific instructional strategies or aids (Kogan, 1971; Rasinski, 1983; Scott & Annesley, 1976).

Definitions

Key terms used in the study are defined as follows:

Cognitive Style. Individual variations in the way an individual organizes his/her environment including diversity in perceiving, remembering, and thinking.

Field Dependence/Independence (FD/FI). A dimension of cognitive style which represents a continuum between an analytical, self-referent orientation and a more global, socially sensitive orientation. This style indicates the extent to which an individual perceives part of a field as separate from the surrounding field.

Field Dependence (FD). Refers to the end of the continuum of FD/FI where the individual is more global in orientation and experiences difficulty separating an object from its surrounding field.

Field Independence (FI). Refers to the end of the continuum of FD/FI where the individual is more analytical in orientation and experiences objects as discrete from their surrounding field.

Multi-Level Reading Guide. A guide which students complete while reading which helps them to respond to meaning at the literal, interpretive and applied levels.

Below Average Social Studies Students. Students were classified as below average in social studies and recommended for enrollment in the school's basic social studies classes by their previous year's

social studies teacher. This recommendation was based on the student's performance in social studies during the previous school year.

Limitations of the Study

One limitation of the study was the small number of subjects in the sample. In addition, the characteristics of the subjects were very specific in terms of age and ability.

Only one instructor was involved in the investigation. Therefore, the effect of the teacher on the study was not controlled.

Most importantly, the multi-level reading guide was the only structure adding strategy used in the study. Aids such as headings, advance organizers, expository instances and purpose setting questions were not employed.

Summary

Since the amount of research dealing with the effect of added structure in content area reading on the reading comprehension of field dependent students is limited, there was a need for further study. This study investigated the effect of a multi-level reading guide on the content area reading comprehension of field dependent and field independent eighth grade social studies students.

Chapter II

Review of the Literature

Purpose

This study investigated whether field dependent, below average eighth grade social studies students benefited more from the use of a multi-level reading guide than field independent students of the same age and ability.

Related literature reviewed in this chapter includes a discussion of field dependence/independence and its relationship to reading, and field dependence/independence and its relationship to IQ.

Field Dependence/Independence and Reading

Cognitive style refers to the way in which an individual organizes his/her environment. It represents variation and preference in perceiving, remembering and problem solving (Davey, 1976; Goldstein & Blackmon, 1978). Put another way, it is the "modes" an individual uses in perceiving, organizing and labeling the environment (Scott & Annesley, 1976). Davey reports that cognitive styles are thought to reflect information processing factors which link perception with higher order thinking.

One dimension of cognitive style which has gained much attention by reading researchers is the field dependent/independent dimension. This cognitive style is seen as a continuum. At one end is field independence. Field independent individuals tend to experience their surroundings analytically, with objects seen as discrete from their backgrounds. In contrast, field dependent subjects tend to experience

their surroundings in a rather global way and experience difficulty separating objects from the prevailing field or context (Witkin, Dyk, Faterson, Goodenough, & Karp, 1962).

Correlations between field dependency/independency and reading performance have been reported by a number of researchers. Pultz (1979) reported a significant positive correlation between field independence and the targeted reading skills of retention ($r = .660$), skimming and scanning ($r = .564$), completion of a cloze passage ($r = .781$) and comprehension ($r = .525$) in her research using college students. The researcher concluded that field dependent students tend to rely more on external sources for support in reading than field independent students.

Baber (1976) reported a significant correlation ($p < .05$) between field dependence/independence and silent reading comprehension.

Watson (cited in Daku, 1978) examined the correlation between field dependence/independence and the reading achievement of first, second, and third grade boys. Using the Children's Embedded Figures Test as a measure of field dependence/independence, the reading portion of the Stanford Achievement Test, and The Draw-A-Person Test, the researcher found that the field independent boys were better readers than the field dependent boys.

Conoley (1976) found that good and average readers tended to be more field independent than poor readers. In her study, she controlled for IQ by using a one-way analysis of covariance to test her hypothesis.

A significant correlation between field independence and reading achievement ($r = .464$, $p < .01$) was also reported by Kaplan (1970).

Peterson and Magaro (1969) found no significant correlations between the Embedded Figures Test, the Wide Range Achievement Test, and a reading

related figure ordering task which had been constructed for use in the study (correlation was .32 which did not reach significance at $p < .05$). The subjects used in the study were 20 high school students. Ten were enrolled in regular classes; the other 10 were enrolled in special education courses only. Although there were no significant correlations among the three measures, the researchers strongly emphasized that all of the statistical outcomes were in the predicted direction. They suggested that field dependent students would require more time to master a reading type learning task than field independent students.

Smith (1973) reported a significant positive relationship between field dependence/independence and ability to selectively attend to and recall details from a short paragraph ($r = .544$, $p < .01$). Field independent subjects outperformed field dependent subjects in this area and in the ability to find the main idea or paragraph topic. When IQ was controlled, these relationships did not exist for male subjects.

A strong positive correlation was found between field independence and reading achievement by Stuart (1967). The reading ability of 83 seventh and eighth graders was measured using the Metropolitan Reading Achievement Test, and field dependence/independence was determined through the Embedded Figures Test. He concluded that field independence may be associated with better reading skills and that it may prove useful to identify perceptual styles before reading instruction is begun.

After partialling out the variables of sex, and verbal, nonverbal, and total intelligence, Cohn (1968) found that field independence was positively and significantly correlated with those aspects of comprehension which require reorganization of a field to solve a problem.

In a study by Wilcox, Richards, and Merrill (1977), high school students were given two types of reading. One was a text with a summary section which listed important generalities. The other was an abridged version of the same text. It was composed of six expository generalities, with each one followed by at least one expository instance. Students were then asked application level questions on immediate and delayed posttests. When the application scores on both posttests were combined for each student, the field independent students performed significantly better than the field dependent students. In addition, the field dependent students felt that the abridged chapter was clearer than the original chapter.

Provost (1981) had college students read one of two types of text on the same content which they were to learn. One required reading only, while the other required that the student interact with the text by answering questions. Field independent subjects significantly outperformed the field dependent subjects on both immediate and delayed posttests regardless of the type of text read ($F = 4.8$ and $F = 3.28$, $p < .01$).

Christiansen, Annesley, and Scott (1980) studied the silent textual processing of low average and below average ninth graders using an analysis of the data from the cloze task. The researchers found through miscue analysis that the field independent readers demonstrated a greater control over meaning and syntax than the field dependent readers. They contend that field dependent individuals require structured and well organized material which presents information clearly and logically. Field independent individuals are more likely to impose organization and appear to learn better when they are free to do so. The researchers suggest

that all students be aided in content reading by the use of advance organizers, purpose setting questions, and instruction in location, reference and other skills in using texts.

Scott, Annesley, Maher and Christiansen (1980) examined the oral reading miscues of eighth grade below and above average readers. There was no significant difference between the field dependent and field independent subjects. Studies of the miscue profiles of the above average readers showed that field independent readers had a higher percentage of miscues in the "no comprehension loss" category than the field dependent readers. When the data were combined for the below and above average readers, the researchers found that the field dependent readers used less proficient reading strategies than the field independents. The field dependents made miscues in the near and extended visual peripheral field, and had lower retelling scores than the field independent readers.

The researchers concluded that the field dependent/independent students apparently use different reading strategies as they extract meaning from print. While both groups appear to use the graphophonic cueing system to the same extent, the syntactic and semantic cueing systems were more widely used by the field independent subjects. The field dependent reader tends to deal with the field in a passive way, relying on external sources as aids in information processing. It was reported that the greater meaning loss for the below average field dependent student is caused by the inadequate internal semantic and syntactic information supplied by the reader.

The above average field dependent readers seemed to be so caught up in giving an exact oral reading performance that for them the meaning of

the text was lost. They attended to the graphophonic cues per se rather than using them as stepping stones to sample and confirm predictions about the meaning of text.

Based on this research, it was suggested that field dependent readers not be required to read orally for content area reading. Furthermore, they should be shown how to take texts apart and put them back together. In other words, help them lift the "figure" from the "background."

Another study which was concerned with the benefit of structure in the text for field dependent students was conducted by Brooks, Dansereau and Spurlin (1981). College students were given one of three texts to read. One of the texts included headings and the students were given instruction and practice in using such a text. The second had headings, but no instruction in the use of the text was given. The third was a control text which had no headings. Following the reading, the students were given different measures of recall and comprehension. In all cases, the field independent subjects outperformed the field dependent subjects. As more structure was added to the texts, all groups tended to improve their performance. The performance level of the field dependent subjects under the headings with instruction treatment approached that of the field independents with headings only and surpassed the field independents in the control group. Rasinski (1983) interpreted these data as suggesting that providing field dependent students with additional structure in the text and instruction in using it may not only help increase their performance, but also increase it to the point of the field independent normal performance.

Not all research supports the relationship between field dependence/independence and reading achievement. Martin (1979) found no significant relationship between the reading achievement of 123 college students and their performance on the Hidden Figures Test (a measure of field dependence/independence).

Buriel (1978) conducted a cross cultural study during which he found that students who performed well on the reading section of the Metropolitan Achievement Test were not necessarily field independent.

Similarly, Daku (1978) compared the performance of sixth grade students on the Group Embedded Figures Test (GEFT), the Iowa Test of Basic Skills, and the Lorge-Thorndike Intelligence Test. He found no significant correlation between reading achievement and field dependence/independence when IQ was controlled. He concluded that the GEFT measures the same intellectual functions as the IQ test, and further states that the GEFT is a much better measure of intelligence than it is of reading ability.

Despite these reports, the majority of research supports the conclusion that there is a significant positive relationship between field independence and reading achievement.

Field Dependence/Independence and IQ

The theory presented by Daku (1978) which proposes that field independence is an indication of intelligence has been contradicted by other researchers.

Cohen (1969) surveyed the researchers who develop and revise the ten most widely used tests of IQ and achievement in order to identify the generic requirements for achievement on those measures. From her survey, three types of requirements were isolated. Those measures

require analytical abstraction, a breadth and depth of general information and field articulation or an ability to draw out salient information from the context, as in reading comprehension. Furthermore:

Standardized tests of intelligence and achievement are made up of items that assess both increasing assimilation of concepts and general information and increasing skills in formal analysis and field articulation. The latter skills are measured by items requiring the subject to derive analogies or "logical" sequences. (p. 289)

Witkin, Dyk, Faterston, Goodenough and Karp (1962) acknowledge that significant relationships between field independence and total standard intelligence scores have frequently been reported. However, they feel this is a result influenced by those sections of intelligence tests which require an analytical mode of functioning. The researchers consider the verbal subtests of the WISC more indicative of intelligence than the Object Assembly, Block Design, and Picture Completion subtests. Positive correlations between field independence and the latter have been noted, but this positive correlation has not been determined for field independence and the verbal subtests.

Kogan (1976) adds to this information by stating that the causal direction between intelligence and cognitive style has not been discussed. He proposes that the cognitive style of the subject may influence performance on the IQ tests rather than the IQ level influencing the cognitive style on the individual.

In an earlier report Kogan (1971) concluded that:

The relative independence of cognitive style indices from the usual indices of ability and aptitude is of educational significance, since it indicates that the standardized test information obtained in most school systems does not begin to tap the many forms of cognitive variation present in the repertoire of all children. (p. 290)

Finally, a considerable amount of research has been conducted where IQ was controlled and correlations between cognitive style and reading achievement were still reported (Cohn, 1968; Conoley, 1980; Scott, Annesley, Maher, & Christiansen, 1980; Smith, 1973).

Summary

The majority of the literature reviewed concerning field dependence/independence and reading achievement indicated a significant relationship between the two variables. Furthermore, many of the studies suggested that adding structure to the reading situation was of significant benefit to field dependent readers.

The relationship between field dependence/independence and IQ is an area of controversy. Daku contends that field independence is an indication of intelligence. Cohen and other researchers propose that certain subtests of intelligence tests require analytical abstraction, thereby favoring field independent subjects.

Chapter III

Design of the Study

Purpose

This study examined the relationship between field dependence/independence and IQ, field dependence/independence and reading achievement, and field dependence/independence and the effect of a multi-level reading guide on reading comprehension.

Hypotheses

1. There is no significant relationship between IQ and field dependence/independence.
2. There is no significant relationship between field dependence/independence and reading achievement.
3. There is no statistically significant difference in the mean score of field dependents and the mean score of field independents following the use of a multi-level reading guide during content area reading.

Methodology

Subjects

The subjects utilized in this study were eighth grade, below average, social studies students. Originally there were 77 students involved; 28 of whom were immediately eliminated from the study due to the fact that either IQ or reading achievement scores were not available for them. These students were classified as below average in social studies and

recommended for placement in the school's basic social studies classes by their seventh grade social studies teachers. These recommendations were based on the students' performance in social studies during seventh grade. The students were members of four classes which were all taught by the same teacher. The 27 females and 22 males involved in the study attended a rural school in western New York with a mixed socioeconomic student population.

Instruments

The Group Embedded Figures Test (GEFT), Consulting Psychologists Press, Inc., 1971, was used to determine field dependence/independence. This timed test requires the subject to detect a memorized targeted shape in a complex line and shade configuration. The subject must find and outline the simple targeted shape when viewed in an embedded context. Subjects may look at the simple form as many times as necessary, but simultaneous viewing of the embedded context and the simple form is prevented by the design since the simple forms are located on the back cover. The test includes seven practice problems and eighteen scored test problems. The subjects' scores are based on the number correct out of the possible eighteen test problems. Answers are scored as either correct or incorrect. No partial credit is given, with omitted problems scored as incorrect.

The GEFT was normed on a testing population of college students. The test manual suggests that time limits be adjusted for younger populations. Therefore the time limits were extended from five to seven minutes for each nine-problem section.

The reliability estimate for the GEFT is .82 for both males and females as computed by the Spearman-Brown formula.

Intelligence was assessed using the Otis-Lennon Intelligence Test which had been administered to the subjects during their fifth grade year.

Reading achievement scores were obtained from the results of the Stanford Achievement Test which had been administered in May of the subjects' seventh grade year.

The pretest and posttest used were teacher designed. The items on the tests were taken directly from the text used for the social studies unit designated as the targeted unit of study. The items were all objective type multiple choice questions. The format and items on the pretest and posttest were identical; however, the order of presentation of items was altered.

Procedure

Four basic social studies classes, all taught by the same teacher, were used in the investigation. Two of the social studies classes were arbitrarily assigned to the treatment group, the other two were assigned to the control group. A two sample t test indicated that there was no statistically significant difference in the reading achievement of the two groups ($t = -1.060$).

The GEFT was administered to the subjects by the social studies teacher. Students were provided with test booklets and pencils with erasers. The test was administered following the instructions as outlined in the test manual. Students scoring one standard deviation above the normed mean score of 10 were identified as field independent, those scoring one standard deviation below the mean were identified as field dependent. The scores of students which fell between one standard deviation above and one standard deviation below the mean were

only included in the sections of the study concerned with the relationship between IQ and field dependence/independence, and the relationship between field dependence/independence and reading achievement. This procedure was followed in order to avoid an inflated correlation due to discontinuous populations. They were eliminated from the other sections of the study.

The day following the administration of the GEFT, the pretest was administered by the classroom teacher. The teacher explained this change in normal classroom procedure by indicating that he was interested in seeing how much information the students had gained during the course of the unit. He informed them that this was part of a study that was being conducted.

The teacher then began instruction of the targeted unit. Each class read the same social studies text. The treatment group completed a multi-level reading guide for each chapter of the social studies text as they read it during class time. The teacher collected, reviewed and discussed the guides with the students. This was followed by the usual instruction which included note-taking and discussion. The control group read the targeted chapters during class time and, after closing their books, answered some general questions about the reading. The teacher collected, reviewed and then discussed the questions with the class the following day. The classroom teacher required that this be included in the procedure to insure for his purposes that the control group actually read the text. This was followed by the same instruction that the treatment group received.

At the completion of the social studies unit, the students completed an objective posttest on the targeted information.

Statistical Analysis

Correlation coefficients were used to determine the relationship between IQ and field dependence/independence, and the relationship between field dependence/independence and reading achievement.

A two sample t test was used to determine if there was a significant difference in the mean score of the field dependents and the mean score of the field independents following the use of the multi-level reading guides.

Summary

Scores from the GEFT were correlated with IQ and reading comprehension achievement scores. Following instruction during which the reading comprehension of the treatment group was aided by the use of a multi-level reading guide, the mean score of the field dependents on the posttest was compared with the mean score of the field independents.

Chapter IV

Statistical Analysis

Purpose

This study investigated the relationship between IQ and field dependence/independence, field dependence/independence and reading achievement, and the effect of a multi-level reading guide on the reading comprehension of field dependents compared with that of field independents.

Hypotheses

1. There is no significant relationship between IQ and field dependence/independence.
2. There is no significant relationship between field dependence/independence and reading achievement.
3. There is no statistical significant difference in the mean score of field dependents and the mean score of field independents following the use of a multi-level reading guide during content area reading.

Principal Findings

A correlation coefficient was computed to determine if there was a significant relationship between IQ and field dependence/independence. The results of this computation yielded a correlation coefficient of .401. The r^2 , or coefficient of determination, was .160. This can be interpreted by stating that IQ explains 16% of the variation in field dependence/independence. Since this is a modest relationship, the data failed

to reject the null hypothesis that there is no significant relationship between IQ and field dependence/independence.

Similar results were observed when the data concerning the relationship between field dependence/independence and reading achievement were examined. The correlation coefficient was .226. The coefficient of determination was .051. Knowing the cognitive style of the subject explains 5% of the variation in reading achievement. This is a weak relationship. The data failed to reject the null hypothesis that there is no significant relationship between field dependence/independence and reading achievement.

A two sample t test was computed to determine if the mean gain in score was greater for the field dependents in the treatment group than the mean gain in score of the field independents in the same group following the instruction which included the use of the multi-level reading guides. The mean, the standard deviation, the calculated t value, and the degrees of freedom are included in Table 1.

The difference in mean scores on the pretest between field dependents and field independents was examined first. The critical value at the .05 level is 2.093. The calculated t value was .149. Since the calculated t value is less than the critical value, it is concluded that there was not a statistically significant difference in mean scores on the pretest between the two groups.

Table 1

Differences in Mean Scores on Pretests and Posttests
Following Instruction Using Multi-Level
Reading Guides

Field Dependent		Field Independent	
A	B	C	D
Pretest Percentage	Posttest Percentage	Pretest Percentage	Posttest Percentage
54	84	58	76
64	80	56	88
46	72	42	86
54	76	44	82
60	86		
62	90		
56	88		
52	70		
54	82		
48	80		
40	60		
52	82		
52	80		
58	72		
62	86		
52	72		
54	80		
Mean	54.118	78.824	50
S.D.	6.102	7.663	8.165
			83
			5.292
AxC		BxD	
t value	calculated = .149		.059
t value	critical = 2.093		2.093
df	19		19

The analysis of the data concerning the difference between the mean score of the field dependents and the mean score of the field independents on the posttest revealed a calculated t value of .059. This calculated t value is also less than the critical value. Since there is no statistically significant difference in the mean scores of the two groups, the data failed to reject the null hypothesis which stated that there is no significant difference between the mean score of the field dependents and the mean score of the field independents following the use of a multi-level reading guide.

Additional Findings

The merits of the use of the multi-level reading guide in content area reading in and of itself was not a major part of this investigation. However a two sample t test was computed to determine if the mean gain in score for the field dependents in the treatment group was significantly different than the mean gain in score for the field dependents in the control group. The critical value at the .05 level is 2.060. The calculated t value was 1.479. There was not a significant difference between mean gain scores of the field dependents in the treatment group and the mean gain scores of the field dependents in the control group.

The same two sample t test was used to determine whether the mean gain scores of the field independents in the treatment group was significantly different from the mean gain scores of the field independents in the control group. The critical value at the .05 level is 2.228. The calculated t value was 1.300. There was not a statistically significant difference between the mean gain scores of the field independents in

the treatment group and the mean gain scores of the field independents in the control group.

A correlated t test was used to determine if the performance on the posttest was significantly different from the performance on the pretest for both the treatment and control groups. The calculated t value was 16.44 for the treatment group and 8.40 for the control group. Both values are significant at the .05 level.

Summary

A correlation coefficient determined that there is neither a significant relationship between IQ and field dependence/independence nor is there a significant relationship between field dependence/independence and reading achievement.

A two sample t test indicated that the mean scores of the field subjects in the treatment group on the pretest and posttest were not significantly different from the mean scores of the field independence in the treatment group on the same tests.

Chapter V

Conclusions and Implications

Purpose

This study investigated the relationship between field dependence/independence and IQ, field dependence/independence and reading achievement, and field dependence/independence and the effect of a multi-level reading guide on reading comprehension.

Conclusions

The results of the correlation coefficient indicated that there is not a significant relationship between IQ and field dependence/independence for this testing population.

A second correlation coefficient indicated that there is not a significant relationship between field dependence/independence and reading achievement.

The results of the t test demonstrated that the field dependent students did not benefit more from the use of a multi-level reading guide than the field independent subjects. There was not a statistically significant difference between the mean scores of the two groups on either pretests or posttests.

In addition, although the instruction for both groups was effective in that both treatment and control groups' scores on the posttest were significantly higher than the scores on the pretest, the use of the multi-level reading guide was not a factor in this improvement. When

the mean gain scores of the field dependents in the treatment group were compared with the mean gain scores of the field dependents in the control group, no significant difference was indicated. Likewise, there was no significant difference in the mean gain scores of the field independents in the treatment group when compared with the mean gain scores of the field independents in the control group. Discussions with the teacher responsible for the instruction of these students revealed that the teacher moves slowly and methodically through the content material for which the students are responsible. It was concluded that the teaching methods of the teacher reduce the extent to which the student must rely on his/her own reading of the text in order to learn the necessary information. This instructor was apparently very aware of the students' needs which were necessary for them to experience success in the classroom.

Implications for Further Research

Since this study was conducted using subjects of a specific age and ability level, research needs to be conducted on populations of different ages and ability levels to determine if the relationships hold true for subjects of various ages and abilities.

Secondly, this investigation was concerned with the effects of adding structure to the reading experience of field dependent/independent subjects. This study should be repeated using different structure adding reading aids such as advance organizers, headings, purpose setting questions, and expository instances.

In addition, this study was conducted in an instructional setting where reliance on the students' ability to comprehend the content area

text was de-emphasized by the teaching style of the teacher. A study should be conducted in a situation where the students' comprehension of the text is an important factor of the students' performance in that class.

Implications for the Classroom

This investigation raises some doubts as to the significance of the effects of the cognitive dimension of field dependence/independence on the reading performance of students. For this population, field dependence had no statistically significant effect on the reading achievement of the subjects; nor did it affect the extent to which the students benefit from the added structure in the reading. The extent to which a teacher should be concerned about the cognitive style of the student, in particular the dimension of field dependence/independence, merits a closer, more critical examination.

In addition, it appears that the teaching style of the instructor can control the extent to which the subject must rely on his own ability to comprehend the text for the content area subject.

Summary

This study demonstrated that field dependent eighth grade students did not benefit significantly more from the use of a multi-level reading guide than field independent students.

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