DOCUMENT RESUME

ED 393 085 CS 012 398

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TITLE Modality and Learning Style among Basic Skills Students.
PUB DATE Apr 96
NOTE 31p.; M.A. Project, Kean College of New Jersey.
PUB TYPE Dissertations/Theses - Masters Theses (042)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Basic Skills; Cognitive Style; Elementary Education; Elementary School Students; *Individual Development; Instructional Development; Instructional Effectiveness; *Learning Modalities; Learning Problems; *Reading Instruction; Reading Skills; *Reading Strategies
IDENTIFIERS *Modality Based Instruction; Westfield Public School District NJ

ABSTRACT

A study examined whether one modality for the act of reading occurred with greater frequency than another among a group of students experiencing difficulty acquiring the skill of reading. A reading style inventory was administered to 40 elementary school students enrolled in a basic skills reading program in Westfield, New Jersey, during the 1995-1996 school year. The purpose of the study was to determine each individual's preferred or dominant modality for the act of reading. Results indicated that the reading process the students attempted to master involves both the auditory and the visual senses, but a strong preference for either one of these modes was not demonstrated. While no one modality was more significantly represented among the sample, findings revealed that the total tactual and kinesthetic responses together were significantly greater when compared with the auditory and visual modalities together. It is suggested that teachers need to recognize their students as individuals and treat them as such: teaching to a student's dominant modality is a low-risk, high-benefit option. (Contains 3 tables of data; 5 pages of modality results by grade level, and 30 references.) (Author/CR)

Modality and Learning Style Among Basic Skills Students

by

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Accepted
4/8/96

In partial fulfillment of the requirements
for the Master of Arts
Kean College of New Jersey
April, 1996

ABSTRACT

This was a study of forty elementary school students who were enrolled in a basic skills reading program in Westfield, New Jersey during the 1995-1996 school year. A reading style inventory was administered to each member of the sample to determine each individual's preferred or dominant modality for the act of reading. The purpose of the study was to establish whether one modality appeared with greater frequency than another in this group of students experiencing difficulty acquiring the skill of reading. While no one modality was more significantly represented among the sample. the total tactual and kinesthetic responses together were significantly greater when compared with the auditory and visual modalities together.

ACKNOWLEDGMENT

I would like to acknowledge my mother, Marie Geoghegan, for instilling within me a love of learning and books, simply through the act of reading to me. I would also like to thank my students, past and present, and my colleagues from McKinley School for their assistance and support with this project.

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The prevention of reading failure has always been a primary concern of educators, parents and researchers. While those involved share this concern, their opinions regarding effective remediation of the problem have not always been shared. One controversial issue that has concerned reading and learning disabilities specialists in particular is the value of modality-based diagnosis and instruction.

Reading instruction approaches can be related as matching, or complementing, different modalities. For example, a phonics approach to the teaching of reading would require strong auditory skills. The Fernald word-tracing approach, which has a child trace over a word written with crayon, heavily involves the tactual modality. Other reading methods may involve one or a combination of several modalities. Reading educators have long recognized the need to provide instruction across the identified modalities to accommodate and reach all students. Much literature has been published about the research indicating that students have identifiable reading styles and that this predisposes them to learn through particular methods. The concept of perceptual modality strengths has been included in curriculum classification systems (Frymier, 1977) and in instructional recommendations based on learning style inventories (Dunn & Dunn, 1978). Carbo (1991) also makes similar recommendations based on the results coming from her Reading Styles Inventory.

Students with strong learning style characteristics have been found to achieve significantly higher test scores when instructional conditions complemented how they learn. Higher test scores were reported when students were taught through methods that matched their perceptual strengths or preferences by several researchers.

Weinberg (1983) came to this conclusion in one experimental study of the interaction between the sensory modality preference and method of presentation in the instruction of math concepts to a sample of third grade underachievers. Martini (1986) similarly found this to be true with a sample of seventh grade students in the area of science achievement.

Modality, as a part of an individual's learning style, has strong implications for reading instruction. Kaley (1979) found that reading achievement significantly predicted learning style better than IQ. Her studies also reported that the better the child's reading, the more independent is the style of learning. Conversely, she found the lower the child's reading, the more dependent is the style of learning.

Carbo (1980) found that her research supported the significance of modality based instruction for reading when she analyzed the relationship between the modality preferences of kindergartners and reading methods as they affected the learning of basic sight word vocabulary.

Wheeler (1983) used second grade learning disabled students and also achieved favorable results by matching the student's perceptual preferences with methods of beginning reading instruction.

Water's (1973) study concerned remedial reading students and the effects of both matching and mismatching the third grade student's perceptual modality strengths. The results indicated that matching instructional reading approaches to students' dominant modalities produced greater reading achievement than did the opposite procedure.

Some researchers have been critical of modality strengths contending that they are difficult to assess. One reason for this is that modality is not a fixed characteristic. Price (1980) and Keefe (1979) have indicated that many children are more tactual and kinesthetic in the primary grades. They found that as those students become second or third graders, their ability to remember visually becomes stronger.

However, Carbo (1983) observed that poor readers in the second through eighth grades had stronger tactile and kinesthetic preferences than good readers.

Students identified with reading difficulties traditionally leave the regular classroom to receive supplemental or replacement reading instruction. One explanation for the inability of the child to learn to read easily and successfully in the regular classroom is that the teaching strategies utilized there have not matched the child's dominant modality. One question which arises from this ideas is: does one dominant modality appear with more frequency than another in students experiencing difficulty acquiring the skills of reading?

Hypothesis

There is no one dominant, or preferred, modality for learning to read that is found to appear more frequently than another in elementary grade students diagnosed as having difficulty acquiring the skill of reading. If this hypothesis is correct and no one modality is more commonly found in this sample of students then classroom teachers would be able to, and should continue to, effectively provide reading experiences which cut across all modalities.

Sample and Procedures

Forty elementary students currently enrolled in a basic skills reading skills program were selected to participate in this research. The students represent the population of basic skills reading students out of a total school population of 290 in one elementary school in the upper-middle class community of Westfield, New Jersey.

Placement in this basic skills reading program for first and second grade students is based on teacher recommendations and the completion by the classroom teacher of a Primary Observation Performance Rating Scale (POPRS). Students in grades three to five enter the program based on a state cut-off of the national percentiles on the Iowa Test of Basic Skills. This district also implements its own cut-off mark at 48% as

recommended by New Jersey's Title 1 monitors.

The researcher individually administered the Reading Style Inventory to each member of the sample. The sample included twenty female and twenty male subjects. Parental permission was obtained from each participant's parents or guardians prior to testing. One form of the Reading Style Inventory was used for the students in grades one and two. The researcher was required to read each question to the individual student. Students in these grades were interviewed one on one. A different form of the Reading Style Inventory was used with students in grades three through five. These sample members were given the opportunity to read the questions on their own or have them read aloud by the researcher. These interviews were also conducted one on one. The information provided by each member of the sample was entered into a computer program, by the researcher, which analyzed the responses and determined the different levels of preference for each modality. For example the auditory modality would be rated as excellent, good, fair or poor for a sample member based on the given responses. Inventory results were analyzed to determine if there were any significant differences between the students' dominant or preferred modalities and weak modalities and to determine if all modalities are equally represented in the sample's results.

Definitions

distal senses- the visual and auditory modalities, which do not need to be in close proximity to perceive information

learning style- the way individuals concentrate on, absorb, and retain new or difficult information or skills

modalities

a) auditory- of, or pertaining to the sense, the organs or the experience of hearing

b) kinesthetic- an adjective, derived from the noun kinesthesia, meaning motion and aesthesis, referring to perception. It means sensation of position or movement.

c) tactual- of, producing, derived from or pertaining to the sense of touch.

d) visual- serving, resulting from or pertaining to the sense of sight

modality preference- the use of one modality more than another for acquiring information

proximal senses- the tactual and kinesthetic modalities. together termed haptic, which require close proximity to perceive information

reading style- an individual's learning style while engaged in the act of reading or when learning to read

Reading Style Inventory (RSI)- a survey instrument developed by Dr. Marie Carbo that questions students about their strengths and preferences in reading. The results are intended for enhancing and refining the knowledge of professionals about an individual student, specifically in the area of reading

Results

Computer results yielded a ranking of poor, fair, good or excellent for each member of the sample in the auditory and visual modality categories. The tactual and kinesthetic modalities were rated using the terms mild, moderate and strong. Since the modalities were not equated with the same terms or the same number of terms, a point value system was used to assign a score to each rating. The descriptors were assigned points in this manner: poor - 0, fair, mild - 2, good, moderate -3, and strong, excellent -4. The sample members had their values totalled to find the number of points for each modality as shown in Table 1.

Table 1

Total Points for Each Modality

Auditory	Visual
62	107
Tactual	**Kinesthetic**
135	140

While a comparison of each of the four modalities individually, as shown in Table 1, does not indicate that one modality is more significantly represented among the sample, there is a significant result when the visual and auditory total responses are compared with the total tactual and kinesthetic, or haptic, responses.

The auditory and visual modalities when combined receive a point value of 169, while the haptic modalities total 275. The difference between these two sets of modalities of 106 appears to be significant. The results also illustrate that the modalities are not represented equally.

Tables 2 and 3 show the totals for the individual modalities and the number of sample members per rating .

Table 2

Individual Modality Values

Modalities	Poor	Fair	Good	Excellent
Auditory	16	16	2	6
Visual	1	22	15	2

Table 3

Individual Modality Values

Modalities	Mild	Moderate	Strong
Tactual	4	11	19
Kinesthetic	1	18	21

Conclusions and Implications

Teaching students to read is one of the highest priorities in education at the elementary school level. The members of this sample have experienced difficulty acquiring this skill. The reading process that they attempt to master heavily involves both the ıditory and visual senses. Yet as has been seen, this sample did not demonstrate a strong preference for these modes.

While the hypothesis of this study that the disabled readers, as a group, would not prefer one modality for learning, and the hypothesis was accepted, the sample did show a strong preference for using the tactile and kinesthetic modalities about equally.

Growth in the field of learning disabilities has done much to emphasize the necessity of teaching to an individual's perceptual learning strengths. Many deem it logical that if a student has a preference for a particular learning style or modality, then it would be most beneficial to attempt to instruct that student through a method which matches his perceptual strength or preference. However, modality-based instruction has not yet been shown to be a more valuable teaching philosophy than any other. Its efficacy continues to be debated among educators. Yet, despite the lack of supporting studies, it remains a naturally appealing approach. Matching instruction to perceptual strengths is a low risk-high benefit option. The many new educational materials on the market that provide reading instruction through the haptic senses indicate the growing demand to find some way to enable those students not reading through traditional classroom instruction to become independent readers. Recently developed programs such as Reading Recovery, geared for the struggling reader, also incorporate the use of a variety of modal presentations.

The range of responses from the members in this study reinforces the notion that teachers need to recognize their students as individuals, and treat them as such. Effective educators understand that a lesson or skill taught to an entire class in the same way, through a limited number of modalities, will not be mastered by each individual. Teachers, themselves, who overall prefer the visual modality for their own learning, and who least prefer the kinesthetic modality, must carefully monitor their own teaching practices to ensure that they provide instruction across the modalities and not only through presentations

favoring their particular preferences.

It is possible that some students become disabled readers because they are exposed to teaching procedures that provide little opportunity for them to learn. Teachers must examine their perception of each individual's needs and preferences. Educators also must familiarize themselves with all the various techniques for providing reading instruction and be versatile in their use if all students are to become capable readers.

Teachers today have a wide variety of philosophies and strategies upon which to base their reading instruction. Despite this variety, all of the methods can be adapted to meet the needs of the type of learners sampled in this study. Instruction that would be geared to meet the meeds of the tactile and kinesthetic, or haptic, learners can take a number of forms. Tactile learners learn easily by touching, manipulating and handling. Reading related activities which can help the tactile learners are writing independently using a typewriter or word processor to compose, tracing letters in the air, in sand, in salt or in clay and manipulating plastic letters. Kinesthetic learners need to both feel and do. New concepts can be introduced for these learners through drawing, sculpting, creative drama and other activities that involve experience and feeling. Students who are strongly kinesthetic and/or tactile can be given manipulative materials and language games based on what they're reading.

Teaching to a student's dominant modality, as mentioned earlier, is a low risk- high benefit option. If matching instruction to the individual's dominant modality is not successful, no harm comes to the learner and

other avenues can be explored. However, if the strategy is successful then the student is respected as an individual and learns to master the skill of reading.

No matter how the modality debate ends teachers will still play the critical role in providing effective instruction to those students easily learning to read and to those experiencing difficulty mastering this skill. Innovative strategies must always be explored to help those students who formerly have not been successful.

Modality and Learning Style Among Basic Skills Students: Related Literature

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Appendices

Modality Results by Grade Level

Modalities	Poor	Fair	Good	Excellent
Auditory	8	1	0	0
Visual	1	6	2	0

	Mild	Moderate	Strong
Tactual	0	4	5
Kinesthetic	0	3	6

Total number of first grade sample members: 9

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Modality Results by Grade Level

Modalities	Poor	Fair	Good	Excellent
Auditory	8	1	0	0
Visual	1	6	2	0

	Mild	Moderate	Strong
Tactual	0	4	5
Kinesthetic	0	3	6

Total number of first grade sample members: 9

Modalities	Poor	Fair	Good	Excellent
Auditory	2	8	1	5
Visual	0	7	7	2

	Mild	Moderate	Strong
Tactual	0	7	9
Kinesthetic	1	8	7

Total number of second grade sample members: 16

Modalities	Poor	Fair	Good	Excellent
Visual	2	1	0	0
Auditory	0	3	0	0

Modalities	Mild	Moderate	Strong
Tactual	1	0	2
Kinesthetic	0	1	2

Total number of third grade sample members: 3

Modalities	Poor	Fair	Good	Excellent
Visual	2	4	1	1
Auditory	0	3	5	0

Modalities	Mild	Moderate	Strong
Tactual	3	3	2
Kinesthetic	0	3	5

Total number of fourth grade sample members: 8

Modalities	Poor	Fair	Good	Excellent
Auditory	3	1	0	0
Visual	0	3	1	0

	Mild	Moderate	Strong
Tactual	0	3	1
Kinesthetic	0	3	1

Total number of fifth grade sample members: 4