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ABSTRACT

This study examined the verbal interaction of teachers and pupils to determine if the quantity and quality of teacher verbalization had significant impact on the verbal test scores of pre-school Head Start Children. Teacher's verbal behavior was scored by a modification of the Caldwell Observer Rating Form. Children were tested using the Wechsler Pre-School and Primary Scale of Intelligence (WPPSI), the Peabody Picture Vocabulary Test (PPVT), and the Illinois Test of Psycholinguistic Ability (ITPA). One-way variance analyses were carried out on each of the dependent variables (child test scores) to determine the effectiveness of quantity of teacher verbalization versus quality of verbalization. Results indicate that quantity of teacher's verbalization did have a significant effect on children's test scores. Quality of verbalization appeared to have no effect. These results have implications for pre-school programs which rely on para-professionals as teachers, especially in terms of hiring and training of these personnel.. (Author)

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TEACHER VERBALIZATION AND THE VERBAL DEVELOPMENT OF HEAD START CHILDREN

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Abstract

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Teacher's verbal behavior was scored by a modification of the Caldwell Observer Rating Form. Children were tested using the Wechsler Pre-School and Primary Scale of Intelligence (WPPSI), the Peabody Picture Vocabulary Test (PPVT), and the Illinois Test of Psycholinguistic Ability (ITPA). One-way variance analyses were carried out on each of the dependent variables (child test scores) to determine the effectiveness of quantity of teacher verbalization versus quality of verbalization. Results indicate that quantity of teacher's verbalization did have a significant effect on children's test scores. Quality of verbalization appeared to have no effect. These results have implications for pre-school programs which rely on para-professionals as teachers, especially in terms of hiring and training of these personnel.

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Introduction

Is a good teacher more effective in the learning process of pupils than a poor teacher? What are the factors which contribute most to effective teaching? Even more basic is the question: Do teachers make a difference? At a day long conference in February, 1970, the Office of Education requested a group of educational researchers to present their findings on these questions.*

The major question of "Do teachers make a difference" appears to be answered in the affirmative by program participants. Dr. Don Davies, Associate Commissioner of the Office of Education, reports the findings of the conference as follows: "The research reported in this publication (of the conference) leads us to believe that, contrary to some earlier indications, schools can and do make a difference in the development of youth. Beyond this, it is clear that teachers are the single most important element in the school."

Participants of the conference identified several teacher characteristics which appear to be related to effective teaching. The most consistent factor identified was teacher verbal test scores.

Language development has consistently been below par among culturally disadvantaged Americans. Children from the disadvantaged homes show less verbal achievement than their middle-class peers. The restricted language code prevalent in the culturally disadvantaged family differs significantly from the formal code of middle-class America. Non-verbal communication abounds. Educators believe that differences in performance on intelligence tests between the several classes of American society are largely a result of the greater verbal fluency of the middle-class child. A primary goal of Head Start has been to improve verbal ability in order to enable the culturally disadvantaged child to compete in school on a more equal basis.

Given that teacher's verbal test scores are critically related to effective teaching and that language development is crucial for the school achievement of children, a logical question arises: What aspects of the teacher's verbal behavior in the classroom have the greatest impact on the verbal development of the students?

This study examined the verbal interaction of teachers and pupils to answer this question. More specifically, it sought to determine if quality and quantity of teacher verbalization had any significant impact on the verbal test scores of pre-school Head Start children.

*"Do Teachers Make a Difference" is the full text of the papers presented and is available from the Government Printing Office.

Conceptually, it would follow that the combination of high quality and high quantity of verbalization would produce the greatest improvement in the child's verbal ability. Moreover, it would appear that since these children have lacked sufficient verbal contact, the quantity of verbalization might be a more important factor than quality at the pre-school level.

Sample

The sample of this research was drawn from three Head Start programs operating concurrently in Raleigh County, West Virginia. Two of the programs were experimental pilot programs funded through a special grant from the Office of Economic Opportunity, while the third program was the regular Head Start program for Raleigh County. The children were all pre-schoolers in the 4-6 year age range most of whom would be entering the public school the year immediately following this study. The total sample of sixty subjects was drawn from sixteen different classrooms. S's were selected randomly from the class groups for testing. The teachers were para-professionals--non-college graduates who had received limited training through Head Start in-service and Supplementary Training Programs.

Design

Four categories from a modification of the Caldwell Observer Rating Form (ORF) were used to score teacher's verbalization. The ORF is an instrument designed to assess the effectiveness of teacher's verbal interaction with students. The rating form consists of twenty-five categories; however, it was determined that only four of these categories related to the quality versus quantity issue. The four categories are:

1. Use of complete sentences in communication by the teacher (Does and Does Not)
2. Use of feedback to develop language (Does and Does Not)
3. Insistence on Verbal Communication from the child (Does and Does Not)
4. Gives child opportunity for self-expression, organization, and expression of ideas. (Does and Does Not)

Each teacher was video-taped for a total of 60 minutes in three 20 minute segments during a morning Head Start Class. Three trained raters obtained a rate measure (number per minute) for each category. (The average number from the three raters was used in the study). Quantity of verbalization is defined as the total number of responses in category one (use of complete sentences--does and does not). Quality of verbalizations is defined as the ratio of the number in the

Does for categories 1-4 over the total number for those four categories (See Table 1).

The median split technique was used on both the quality and quantity dimensions to divide the teachers into four groups: High quantity, high quality (HH); high quantity, low quality (HL); Low quantity, high quality (LH); and low quantity, low quality (LL).

Children were assessed using three commercial, standardized tests which in varying ways purport to measure intellectual development. The three tests used were the Weschler Pre-School and Primary Scale of Intelligence (WPPSI), the Peabody Picture Vocabulary Test (PPVT) and the Illinois Test of Psycholinguistic Ability (ITPA). Each of these tests relies heavily on verbal ability as an index of intellectual development.

All three Head Start programs operated on eight month school years. Children were pre-tested during the early part of the school year and post-testing occurred near the end of the school year. Students were randomly assigned to classes at the beginning of the program; therefore, it is assumed that the groups were equivalent when the program began.

Analysis

The hypotheses tested were:

1. High quantity, high quality (HH) would produce greater increases in test achievement than the other three categories (HL, LH, LL) and that
2. High quantity, low quality (HL) would produce greater increases in achievement than Low quantity, high quality (LH) and Low quantity, low quality (LL)

One way analyses of variance were carried out using the teacher's rating as the independent variable and the children's scores as the dependent variable. A desired significance level of .05 was set.

Results

Results suggest that the quantity of teacher verbalization does indeed have a significant effect on the verbal development of pupils. Unfortunately a random testing schedule for the HELP-HAH projects produced a limited number of cases in the HH category which, in fact, was too small to consider alone. This necessitated combining groups HH and HL to compare with LH and LL.

Pupils from classrooms where teachers were rated as high quantity of verbalization made greater gains on all three measures (see Table II). The two groups that showed high quantity of verbalization had a mean of 98 on the WPPSI. This to compare with means of 91 and 93 for the groups with low quantity. An analyses of variance suggested these results to

be significantly different ($F = 4.6$) at the .05 level. Similarly, a mean of 104.0 for the high quantity groups on the Peabody was compared with means of 97.6 and 98.2 for the low quantity groups. An F of 4.2 showed these results to be significant at the .05 level. Finally, a high quantity mean of 6.8 was significantly higher ($F = 4.1$) on the ITPA than low quantity means of 6.2 and 6.2 at the .05 level.

Due to the misfortune of limited data caused by random testing, it remains to be determined if High quantity, low quality (HL) or low quantity, high quality is a more desirable situation to facilitate language development.

The means for the two low quantity groups (LH and LL) were compared for the three tests. Though the low quantity, low quality (LL) group had higher scores than the low quantity, high quality (LH), the difference was not significant. One could theorize from this finding that the quality of teacher's verbalization has little relationship to the acquiring of verbal skills by students of this age.

Discussion

A major problem faced by Head Start programs, day-care facilities, and private nursery schools is the recruiting of fully qualified teachers. Because of limited funds and a shortage of certified teachers, many Head Start programs are staffed entirely by para-professional teachers. A major concern in the hiring of these relatively untrained teachers is their purported lower verbal ability. In conjunction with the finding of the Office of Education Conference mentioned earlier, this would suggest that Head Start Children are receiving - in many cases - sub-standard enrichment. However a series of research studies at West Virginia University indicate that this is not the case. Para-professionals (with comprehensive in-service training) are at least as effective as their cohorts with higher levels of education. Generally in-service programs tend to emphasize the quality (as here defined) of teacher verbalization. Quantity of verbalization - certainly not limited by formal training - is often given minimal emphasis. This study's results suggest that there may be misplaced emphasis.

Further, these findings reinforce the widely-held theory that - in terms of language acquisition - children model what they hear. To facilitate such modeling, maximal exposure to verbalization is essential.

Finally, such general findings require validation and replication. Studies specifically designed to examine this question and to control extraneous variables appear both relevant and necessary.

Table I

Category Designation for High and Low
Quantity and Quality

Teacher	Category 1		Category 2		Category 3		Category 4		Quantity	Quality
	D	DN	D	DN	D	DN	D	DN		
1	172	19	46	24	25	31	56	14	191	77**
2	128	81	13	27	5	37	15	29	209	48
3	187	45	17	23	6	26	35	5	232	71
4	225	26	13	2	2	28	63	9	251	82**
5	268	24	25	1	3	57	85	2	292	82**
6	286	39	17	5	4	40	45	19	325*	77**
7	328	105	21	57	16	20	42	17	433*	67
8	192	56	7	19	4	53	40	5	248	65
9	387	21	172	0	76	13	178	5	408*	95**
10	500	41	26	45	10	65	32	138	541*	66
11	148	30	11	4	1	16	18	5	178	76**
12	273	78	32	4	11	20	43	13	351*	76
13	178	34	9	47	2	36	15	18	212	60
14	233	68	15	11	11	36	35	5	301*	71
15	308	47	55	4	7	23	63	4	355*	85**
16	339	27	27	27	6	46	16	11	366*	78**

* high quantity
** high quality

A teacher having * only is an HL (#7, 10, 12, 14).
 A teacher having * and ** is an HH (#6, 9, 15, 16).
 A teacher having ** only is an LH (#1, 4, 5, 11).
 A teacher having neither * or ** is an LL (#2, 3, 8, 13).

Table II

T-tests

WPPSI				
<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>F</u>	<u>p</u>
HH & HL	11	98	4.6	.05
LH	9	91		
LL	16	93		
Peabody				
<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>F</u>	<u>p</u>
HH & HL	23	104.0	4.2	.05
LH	14	97.6		
LL	23	98.2		
ITPA				
<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>F</u>	<u>p</u>
HH & HL	23	6.8	4.1	.05
LH	14	6.2		
LL	22	6.2		

Note: Missing data reduced the N's on some comparisons.