11-15-68

ERIC REPORT RESUME

ERIC ACC. NO.				
ED 024 460				
CH ACC. NO.	P.A.	PUBL. DATE	ISSUE	
PS 001 336		Sep 68	RIE APR 69	

IS DOCUMENT COPYRIGHTED? YES ☐ NO ☒
ERIC REPRODUCTION RELEASE? YES ☐ NO ☒
LEVEL OF AVAILABILITY I ☒ II ☐ III ☐

AUTHOR
Thornton, Sam

TITLE
Project Head Start, Psychological Services Report, Research, Summer 1968.

SOURCE CODE	INSTITUTION (SOURCE)
BBB00749	Embarras River Basin Agency for Economic Opportunity, Inc., Ill.
SP. AG. CODE	SPONSORING AGENCY
FGK65995	Office of Economic Opportunity, Washington, D.C.

EDRS PRICE	CONTRACT NO.	GRANT NO.
0.25;0.95		
REPORT NO.		BUREAU NO.

AVAILABILITY

JOURNAL CITATION

DESCRIPTIVE NOTE
17p.

DESCRIPTORS
*Summer Programs; *Preschool Programs; *Program Evaluation; *Educational Diagnosis; *Program Improvement; Culturally Disadvantaged; Preschool Children; Behavior Rating Scales; Predictive Measurement; Developmental Tasks; Developmental Guidance; Curriculum Evaluation

IDENTIFIERS
*Head Start; Embarras River Basin; First Grade Screening Test

ABSTRACT
In a summer program, 351 Head Start children were assessed. Goals of the program were (1) to assess the educability of these children as a group, (2) to identify to public schools the children in need of early special help, and (3) to obtain information germane for future Head Start programs. Children were screened with reference to probable success in meeting first grade requirements on the basis of a measured performance and teacher judgment. Screening factors included physical development and coordination, mental development, perception (visual and auditory), motivation, and socialization. Recommendations include adding visual perception, language, and visual motor programs to the curriculum and stressing the importance of findings in child development research, preschool methodology, and teaching materials for teacher orientation. (DO)

EMBARRAS RIVER BASIN AGENCY

FOR ECONOMIC OPPORTUNITY, INC.

Project Head Start

Psychological Services Report
Research, Summer 1968

SAM THORNTON
September 1968

TO: Harry Ring, Executive Director,
Embarras River Basin Agency for
Economic Opportunity, Inc.

FROM: Sam Thornton, Psychological Services

RE: Report of Research, Psychological Services, 1968,
Summer Head Start Program.

This component of the Embarras River Basin Agency for Economic Opportunity, Inc., Head Start Program screened all children available to the end of obtaining an estimate of public school readiness and for information germane for future Head Start curricula planning.

Information from 351 children was gathered by the screening. Local norms were developed. The results of each child's performance was made known to the Head Start teacher. Data was tabulated so as to facilitate the transmittal of names to appropriate public school personnel, i.e., District Superintendents, Directors of Special Education, to the end of enabling the schools to provide, as indicated, early special help.

The Head Start Psychologist desires to commend to the Executive Director the cooperation of June Selvia, Director of Head Start, and to acknowledge the contributions of all who participated in the program. Special commendation is made to Mildred Caldwell, Fieldworker Coordinator, who supervised the day to day process of data gathering, organization, and assimilation.

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I. INTRODUCTION

The Embarras River Basin Agency 1968 summer Head Start psychological services program was conducted in nine Centers within which were twenty-four classes enrolling 351 children; average, 14.6 children per class.

The Delaney paper pictures well the economic and educational background producing these Head Start children. Delaney reports a nine county population exceeding 178,000 of whom at least 30% have incomes annually of less than 3,000 dollars.(1)

Of those whose incomes were less than 3,000 dollars annually, 60% of consumer unit heads were making less than 2,000 dollars per year and about one-fourth were reported to be existing on less than 1,000 dollars for a twelve month period. Unemployment averaged about 5.4%, well above the level for concern, the burden of dependency approached 45%, yet only 3.4% were receiving public aid.(2) Perhaps the term "poor but proud" could be well applied.

Educationally the area high school drop-out rate averaged about 19%. About 59% of the area population was reported as "over age twenty-five", of which 17% had less than eight grades of school.(3) Only about one-third of the adult population are said to have completed high school and/or to have one or more years of college.(4)

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[1]Delaney, H.R., "Poverty In A Nine-County Area In Eastern Illinois Incidence And Characteristics", Charleston, Ill., mimeo, Dec., 1967.

[2]op cit.

[3]op cit.

[4]Thornton, S.M., "Projection Report for Southeastern Illinois Mental Health Association", mimeo, Richland County Psychological Service, Olney, Ill., May, 1967.

The tendency for children of the poor, uneducated and unskilled to, themselves, be as adults, poor, uneducated and unskilled is so well established as to not require present documentation. The only apparent way to break out of this vicious cycle is through practical education and training. More specifically, appropriate education and training, beginning with the pre-school experience. Head Start programs ideally initiate the action toward this end. However, for Head Start to fruitfully function, the needs of the children must be known.

II. PROGRAM GOALS

The goals of the Embarras River Basin Agency summer psychological service program were three in number: one, to assess the educability of Head Start children as a group; two, to identify to public schools those children in need of early special help; and three, to obtain information germane for future Head Start programs.

For reasons of time, budget and personnel it was determined the most practical information would be obtained through screening procedures and subsequent referral. What to screen? The capability to take advantage of the school opportunity depends upon a great number of factors. Among these factors are physical development and coordination, mental development, perceptively trained senses of hearing and of seeing, motivation, and socialization or the ability to live with others and become a part of the school community.

III. IDENTIFICATION DEVICES

After a review of recent literature, the First Grade Screening Test (FGST) was chosen in that it appeared to be a simple measure, teacher administered, of considerable promise.(5) A second technique, developed and used with Head Start and public school children, the Behavioral Rating Scale, which provides a means to objectify teacher judgement of children, was also included.(6)

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[5]Pate, J.E., and Webb, W.W., First Grade Screening Test, American Guidance Service, Circle Pines, Minnesota, 1966.

[6]Thornton, S.M., "Report of Research, Summer 1966", DAEOC, mimeo, Portageville, Missouri, October, 1966.

First Grade Screening Test

The First Grade Screening Test was developed by Pate and Webb to identify those beginning or potential first grade children who without the benefit of special assistance will not make sufficient progress to be ready for the second grade the following year. The test was designed to assess the probability of failure due to intellectual, sensory or social deficits.

The authors major premise seems to be--most early school failures are due to intellectual, sensory or social factors. The authors' primary assumption, while acknowledging these named deficits. are sometimes individually manifest, is all three factors usually exist in combination within a given child. The test therefore provides a cutting score which, depending upon the view, predicts the likelihood of first grade success or failure.

From the FGST's manual standardization procedures appear adequate. Validity studies with first grade children (N 5534) are impressive; somewhat less so with kindergarten children. These studies typically involve comparisons to teacher rating during kindergarten or early in the first grade and to achievement test data obtained near the end of the first grade experience. In the several cross validation samples reported, the percentage of correct predictions ranged from 77% to 97%, evidence the FGST can be useful in predicting achievement test scores.

The FGST provides a form for boys and a form for girls, each with twenty-seven response requirements. The forms are identical except for five of the six adjustment items. In the case of adjustment items, identical situations are shown with male figures in the boy's form, and female figures in the form for girls. The judgements required are of kind. Six items deal with perception (five visual and one clearly auditory), and finally fifteen items are included appearing to involve intelligence test-like factors.

Pate and Webb, when discussing cutting scores, recognize geographical as well as socio-economic differences among children. For example a cutting score of eighteen would be practical when the parents of children are primarily business and professional people living in large urban centers. With parents who are largely unskilled and living in rural areas or small towns, "with schools (presumably) less demanding", a cutting score of eleven is indicated.

The authors clearly recommend the development of local norms. However, they do state a cutting score of fifteen and below will predict "rather efficiently" across the country. The predictive success line is generally drawn to separate the lowest 10% of children.

Behavioral Rating Scale

The Behavioral Rating Scale (BRS) was initially developed as a tool to detect social change over the course of a Head Start program in southeast Missouri. The scale is composed of twenty-seven statements of behavioral reference, each requiring a teacher judgement to be indicated on a Likert type scale. Individual items were drawn from the author's clinical experience, from suggestions by teachers, and from one of the CAP-HS (non-Likert) forms published in June, 1965, subsequently discontinued.(7)

Scoring is accomplished by tabulating totals which fall within a range from 27 to 135 points. For the original sample (N 1239) crude norms based upon raw scores were developed.(8) In a program following, the BRS was used to identify children about to begin the first grade who without the benefit of special help would likely find the first grade experience frustrating (N 424).(9) Data from the post test "social change" sample was compared to data from the "about to enter first grade" sample. No statistically significant difference was found between the groups. Thus it would appear, at least tentatively, raw score norms may have some value if cautiously employed.

Again as in the case of the FGST, local norms are urged. BRS was employed in a "school readiness" project (N 653) in an Illinois county.(10) In this study norms based upon "Z" scores were used. At face value "Z" scores may not be anymore valid than ratings based on raw scores. However, the method does offer the advantage

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[7] op cit.

[8] op cit.

[9] Thornton, S.M., "Psychological Services Report 1966-67 Year Program," SEMO, mimeo, Portageville, Missouri, November, 1967.

[10] Thornton, S.M., "Readiness Characteristics of Kindergarten and First Grade Children in Richland County, Illinois", Richland County Psychological Service, mimeo, Olney, Illinois, April, 1967.

of permitting with more confidence intergroup comparisons in that rater bias is statistically controlled.

IV. PROCEDURE

In-service-training meetings with Greenup office personnel were held during the week of June 14th. At this time staff were introduced to the Behavioral Rating Scale, the procedure for administering the device gone over, as well as the statistical methods to be used in evaluation. The Head Start Director and Fieldworker Coordinator assigned to the project introduced the rating scale to teachers the following week. Rating scales were returned to the central office the first week in July for tabulation and statistical treatment.

During the week of July 8th, two meetings were held for teachers, at Newton, and at Greenup. During these in-service-training periods the First Grade Screening Test was presented with the administration procedures, by the Head Start Psychologist. Test booklets were distributed to the head teachers at the close of the meetings. Testing was completed during the week of July 15th. Forms were returned to the central office for scoring and statistical treatment the week of July 22nd.

Statistical treatment was under the day to day supervision of the Fieldworker Coordinator who trained assigned Embarras River Basin Agency personnel to utilize the statistics required by the experimental design. The Head Start Psychologist periodically reviewed the work in progress and provided consultive assistance as required.

V. RESULTS AND DISCUSSION

First Grade Screening Test

First Grade Screening Test forms completed were obtained from 145 children, aged 5 years, 9 months, and older, who would presumably enter the first grade in September of 1968. FGST forms completed were obtained from 132 children, aged 4 years, 8 months, to 5 years, 8 months, presumably eligible for kindergarten classes in the fall. Completed forms for 10 prekindergarten children were also included. Total forms completed returned 287.

TABLE I

First Grade Screening Test Statistics

	5-9 & +	4-8 to 5-9	4-7 & -
Number	145	132	10
Mean	15.28	11.83	9.70
Sd	5.61	5.91	7.54

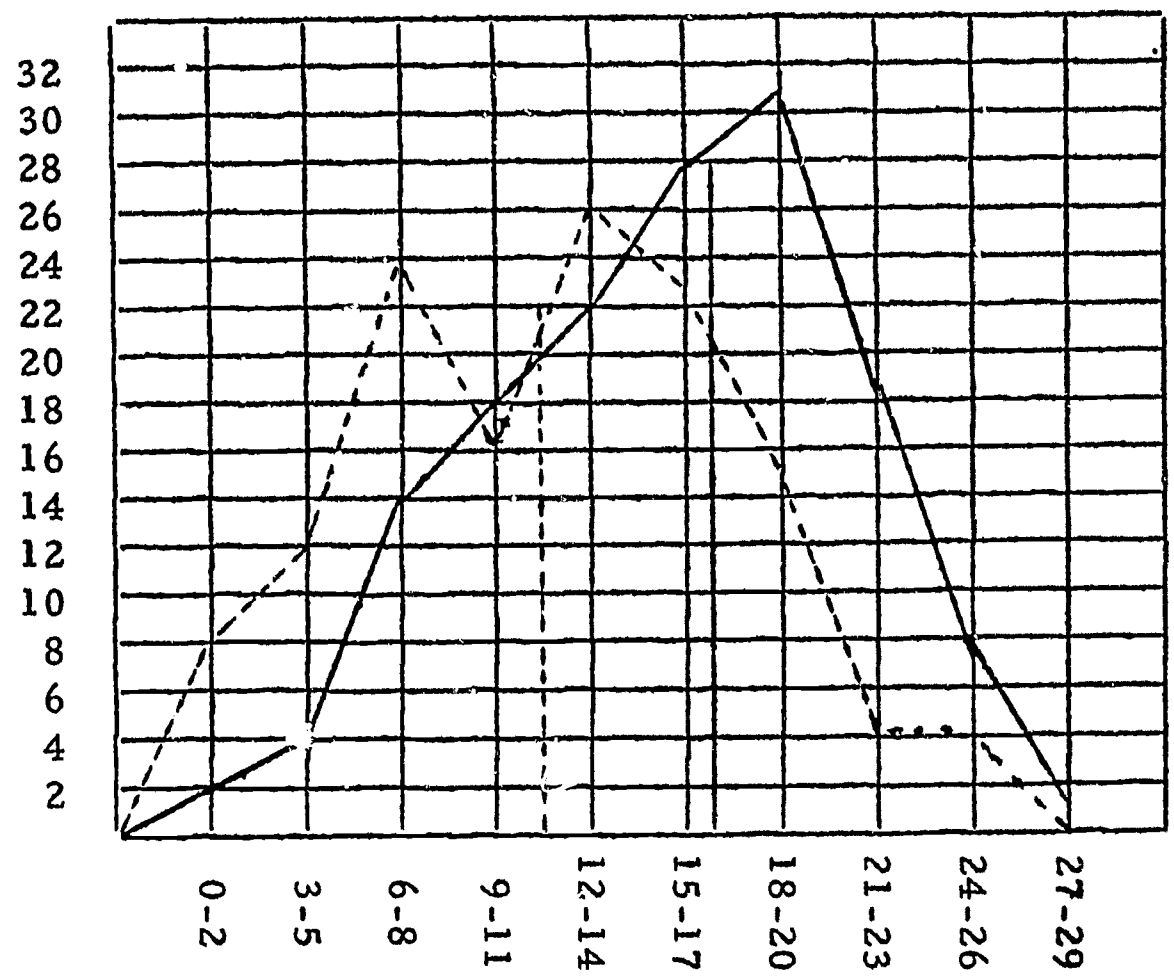
Reference to Table I will show data relevant to the three groups. The Mean (15.28) for children 5 years, 9 months, and older is significantly different statistically from the Mean (11.83) for children 4 years, 8 months, to 5 years, 8 months, at the .001 level (t = 5.089). The finding may be regarded as evidence supporting the hypothesis the FGST does maturationally differentiate at these levels. The data for children 4 years, 7 months, and younger, is not significantly different from that of children 4 years, 8 months, to 5 years, 8 months (t = .86). The finding may be an artifact brought about by the very small number of younger children (and somewhat larger standard deviation), or it may be the FGST does not discriminate usefully at these ages. Figure 1 allows visual comparison of the Kindergarten and First Grade performance.

Table II permits percentile rank comparison for Kindergarten and First Grade. Looking at these data it becomes clear the present Head Start group does not perform as well with the FGST as does the standardization group. The raw score 22, equivalent to the 90%ile on our norms, equals the 50%ile on the standardization norms! Pate and Webb suggest a cutting score of 15, as "rather efficient across the country," which represents the 12%ile on beginning of first grade norms (manual, Table I, p 43). The Pate and Webb cutting score would predict over half of our beginning first grade children unable to meet first grade requirements. This is unlikely.

Figure 1

First Grade Screening Test Data

CA 4-8 to 5-8, and 5-9 and Older



----Kindergarten N = 132

——First Grade N = 145

TABLE II

Percentile Rank Comparison Kindergarten to First Grade with Cumulative Frequencies

Percentile		First Grade N = 145 Raw Score*	Cum Freq.		Kindergarten N = 132 Raw Score*	Cum Freq.
90%ile		22	130.50		19	118.8
75%ile		20	108.75		16	99.0
60%ile	average	17	87.00	average	14	79.2
50%ile		16	72.50		12	66.0
40%ile		14	58.00		10	52.8
25%ile		12	36.25		7	33.0
15%ile		9	21.75		5	19.8
10%ile		7	14.50		4	13.2
05%ile		6	7.25		3	6.6
02%ile		3	2.90		1	2.6

*Raw Scores were smoothed to nearest unit number.

It would appear the author's reference to Appalacia and a cutting score of 11 would be more relevant. For our sample, scores of 11 and below for beginning first graders would include the lowest quarter of our children. Certainly the low quarter do not do well in school; therefore, it is suggested that all children so classifying be regarded as "suspect" for failure (N 38). It is suggested that children scoring at the 10%ile and below, cutting score 7 and less, be referred for psychoeducational diagnosis by the appropriate public school agent with as little delay possible (N 16). For those children having the opportunity for public school kindergarten it is suggested a cutting score of 6 and below as suspect (N 26), with public school psychodiagnostic evaluation for those entering Kindergarten children with scores of 4 or less (N 17).

Behavioral Rating Scale

Behavioral Rating Scale forms were returned completed for 351 children. As a means to reduce rater bias, raw scores were tabulated, a standard score distribution obtained for each class, with "Zs" then going into a

common pool. To eliminate positive and negative signs, a score of 500 was assigned to the Mean and 100 selected for the standard deviation. For example, a score one standard deviation above the Mean, was recorded as 600, and one standard deviation below the Mean was recorded as 400, etc.

Scores representing the middle 50% of the sample were regarded as average. Scores in the upper 25% were regarded as above average and those 90%ile and above as superior. Conversely, scores falling in the lowest 25% were regarded as below average, and candidates for psychoeducational diagnosis. Children whose scores fell at the 10%ile were recommended for immediate referral for psychoeducational diagnosis. Those falling at the 5%ile and below were regarded for possible direct referral to a medical or mental health clinic or similar facility having resource for complete work-up. Table III displays selected percentile ranks with theoretical equivalent BRS scores.

TABLE III

Percentile Rank and Theoretical Equivalent
BRS Scores N = 351

Percentile		Cumulative Freq.		BRS Score
90%ile		315.9		620.50
80%ile		280.8		589.50
75%ile		263.25		576.20
70%ile		245.7		561.75
60%ile	average	210.6	average	530.07
50%ile		175.5		504.40
40%ile		140.4		477.82
30%ile		105.3		446.67
25%ile		87.7		428.40
20%ile		70.2		410.70
10%ile		35.1		368.00
05%ile		17.5		335.95
02%ile		7.0		295.30

First Grade Screening Test to Behavioral Rating Scale

The First Grade Screening Test and the Behavioral Rating Scale each were designed to identify children likely to experience difficulty in school. The FGST represents a specimen of the child's performance. The BRS represents a judgement of the child made by the teacher. The FGST purports to extract performances associated with intellectual ability, perception and social judgement of self and others. The BRS asks for the teacher's impression of the child in the classroom and involves judgements of teacher-child, child-child, child to others, and child-work performances in a fluid global situation. Do these rather different approaches reach similar ends?

The FGST raw score data was transmitted into standard scores, and the correction made for positive and negative signs in the way identical to the BRS data treatment. Thus it was possible to make direct comparisons.

For beginning first grade children 142 had FGST and BRS scores; for kindergarten children 121 had both scores; and 13 sets of scores were available for prekindergarten children, total 276. Pearsonian correlation ratios were calculated for FGST to BRS as follows: beginning first graders, $r = .717$; for kindergarteners, $r = .706$; and for prekindergarten children, $r = .781$. Each of the correlation ratios exceed the .01 confidence level; hence it is clear the FGST and BRS, whatever it is they measure, do so in a significantly similar way.

Even with reliabilities as high as reported, predicting a child's performance from one measure to the other would vary from about 30% to 37% better than chance expectancy. The question arises, taking one child at a time on one device how will the given child classify on the other. To answer this question the sample was divided into above average, average, and below average groups on the basis of the FGST and the BRS (N 273) and the Chi Square test of significance computed. The Chi Square .947 was obtained which suggested that differences in classification observed could be accounted for on the basis of chance expectancy. Further examination of data revealed identical classification into 56% of the cases. However, when the question was rephrased to compare classifications of average or above on the FGST to average or above on the BRS, 7 of 10 children were placed in agreement with one test by the other. Equally significant, marked disagreement was observed between the measures in only 3.6% of cases.

In review of these data it can be concluded that each test will serve as an acceptably efficient screening device and that taken together the screening is enhanced by the increased amount of information lending for evaluation.

VI. TEACHER-CHILD PERFORMANCE

Embarras River Basin Agency staff, having reason to have regular contact with each center during the course of the summer, were asked to rank teachers in order of merit. Twenty-four teachers were ranked. First Grade Screening Test classifications in terms of below average, average, and above average were computed for the top third of teachers and compared to similar data for teachers ranked in the bottom third. A Chi Square (15.38) was obtained, significant beyond the .01 level.

It is clear low merit ranked teachers did not have children classified by the FGST in the same way as did high merit ranked teachers. Inspection of data shows each group had about the same proportional number classified as average. Low merit rated teachers had fewer classified above average and more classified below average than did high merit rated teachers.

One might conclude "poor" teachers elicit less response from children than do "good" teachers. Our data does not say "yeah or nay." Perhaps more academically inclined children tend to make teacher or her program look better. The data does not bear directly on this question. However, it is of interest that 7 of 8 in the top third of ranked teachers come from northern counties, 6 of 8 teachers in the lower third come from the southern area, and teachers more centrally located tend to disperse. Are the children varying by home place? What effect does Eastern Illinois University have, if any, on this observed variation?

VII. SUMMARY

Head Start children were screened with reference to probable success in meeting first grade requirements on the basis of a measured performance and Head Start teacher judgement.

The objective measure (FGST) appeared to reliably differentiate maturational differences between beginning first grade children and those chronologically ready to enter kindergarten.

Present Head Start children as a group appear disadvantaged with respect for school readiness when compared to standardization samples cited in the manual, in that the "recommended" cutting score which "identified" 12% of the norms group, would have "identified" over half of the present sample.

The Appalacia cutting score "identified" the lowest quarter of children in our beginning first grade sample.

Seventy-one children were regarded as questionable for successful first grade experience; twenty children were identified for notice to schools relative to psychoeducational diagnosis; and thirteen children identified for complete clinic work-up.

Teacher judgement (BRS) was significantly similar to child performance (FGST) beyond the .01 confidence level.

A consistent misclassification variable was not determined.

With respect to average and above, seven of ten children classified equivalently on each measure.

A definite trend was elicited tending to show above average child performance more prevalent in in classes of teachers ranked in the top third of the teacher group; and further, both child performance and teacher effectiveness seem in some way a function of geographic location.

VIII. RECOMMENDATIONS

1. These data clearly lend to an interpretation that the Head Start children served by the Embarras River Basin Agency, as a group, do not compare well with children of similar age used in standardizing the First Grade Screening Test; therefore, as a means to aid in the development and to enhance the children's future, it is suggested:

   for visual perception, the Frostig Program for Visual Development be included in the curriculum.

   for language and for audition, the Peabody Language Program be included in the curriculum.

for visual motor, a program making use of motility pattern development, to represent gross motor, sensory motor, and perceptual motor skills, as described by Robert Valett in the Handbook of Psychoeducational Resource Programs, be included in the curriculum.

2. It is suggested the names of children identified as potential first grade failures be given the Directors of the various public school joint agreements for special education programs, to the end of enabling the public schools to provide from the beginning appropriate programs as indicated.

3. It is suggested that those children in the lowest 5% on both screening devices, whose handicaps are confirmed by other information in the Head Start files, be directly referred to a medical or mental health clinic or other facility having resources for complete child study.

4. It is suggested the names of beginning first grade children scoring at the 90th percentile or above on both screening devices be forwarded to the Superintendent of the public school district the child will attend. This will permit the public school the opportunity to group the academically inclined or to provide enrichment for selected promising children.

5. It is suggested pre-program teacher orientation not only include but stress the importance of recent findings in child development research, pre-school methodology, teaching materials, psychology of the poor, etc.

6. It is suggested the Embarras River Basin Agency seriously consider a uniform Head Start curriculum to include all classes in each center.