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ABSTRACT

A curriculum was devised by working backward from Stanford-Binet items to specification of a universe of content for which the Stanford-Binet could serve as a content-valid achievement test. It was reasoned that this curriculum should home. This curriculum was tested on 20 4-year-old disadvantaged children in Champaign-Urbana, Illinois. The program was conducted for eight months, two hours daily, with a teacher-pupil ratio of one-to-five. The Stanford-Binet was administered four times during the experiment, curriculum content and procedures being modified in the light of results. The Wechsler Preschool and Primary Scale of Intelligence (WPPSI) was administered at the beginning and end as a control measure for non-specific effects on IQ. Total IQ gain was 13 points on the Stanford-Binet--no better than that achieved previously with the highly structured programs which made no effort to teach Binet-related content. Gain from the WPPSI turned out to be of the same magnitude, thus indicating that the gains were in no wise test-specific. These results were taken as indicating that there was not a close relationship between curriculum content and intelligence test performance, leaving open the possibility [illegible] accounted for the non-trivial part of the IQ gain might [illegible] the accererated acquisition of certain basic thinking skills. (Author/MK)

Achievement Components of Stanford-Binet Performance

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Much of the research of early childhood education has focused on the gross differences in child rearing practices between middle and lower class children. The hidden curriculum is the term which has been used to describe those learnings that constitute adequate cognitive and behavioral preparedness for school. It has been assumed that certain learnings by middle class children prepare them for school while lower class children seem not to pick up a comparable set of learnings and behaviors. What is this hidden curriculum and what are the crucial parts that less-advantaged children miss? So far the question has been answered mainly by conjecture and the conjectures have tended to fasten upon the grossest and most obvious differences between middle and lower class childhood experience.

The hidden curriculum is of course, a hypothetical construct, and so it would be futile to argue about what it really comprises. The most that could be for in the way of definition is a set of specifications that (1) are in accord with the facts of childhood experience and behavior, (2) have some demonstrable relevance to subsequent academic performance, (3) are expressed precisely enough to permit objective evaluation, and can rather directly be translated into pedagogical procedures or plans. Most of what is done in the name of "stimulation" or "enrichment" in early childhood education can be viewed as an attempt to implement a hypothetical, hidden curriculum. But this underlying curriculum, to the extent that it is described at all, is specified in ways that fail on all or most of the above criteria.

In light of the hopes currently invested in preschool education, it would seem mandatory to explore more systematic ways of formulating the content of the implicit curriculum that the preschool purports to teach. This study proposes a different approach to identifying the content of this hidden curriculum, which promises to encompass learnings of more general utility for academic achievement. It amounts to working upward from test content rather than backward from more advanced curriculum.

This study is an effort directed toward generating a curriculum for preschool children from the 1960 Stanford-Binet. Efforts such as this almost invariably raise the issue of teaching children to pass tests. When this question is raised, it is useful to call the origins of the Stanford-Binet. In 1905 the Ministry of Instruction charged Alfred Binet and others with the responsibility of devising a method for identifying children who could not profit from regular classroom instruction. In the process of looking for means of identifying these children, Binet visited classrooms and adopted classroom tasks which cause slow-learners difficulty. The result of this effort was that items included in the original Binet-Simon tests had face validity as well as predictive validity. Put another way, the items on the tests could be viewed as achievement scale for children to measure their ability to [illegible] the curriculum in the classroom.

If we accept the possibility that Binet and Simon did choose many of their tasks from the classrooms, then it is a perfectly reasonable procedure to take a backward tact and develop curricula from the test. We could thus identify those tasks which cause children difficulty and generate a curriculum which meets their needs. In using a test as the basis for curriculum planning, it is important to distinguish curricula generated from content specifications and curricula generated from item types. Much of the current work on learning disabilities uses curricula generated from item types. If a child exhibits inferior performance on a certain kind of item, say verbal analogies, he is given practice on a variety of analogy tasks.

Such practice often results in improved test scores, althought it is always questionable whether such training will generalize beyond performance on the particular item type used in training. In planning this study, it was assumed that the items from the Stanford-Binet represented samples from different curriculum areas. By systematically defining these areas of knowledge and skills, it is possible to develop a curriculum appropriate for children for our encountering difficulty in school.

OBJECTIVES

This study thus had three related objectives:

1. To carry out a task analysis of the achievement components of the Stanford-Binet items in the three-to-six year old range.

2. To construct and implement, through direct instruction techniques, a curriculum based on content categories identified through the above analysis.

3. To evaluate and revise the original analysis on the basis of comparison of test item performance and achievements in the curriculum.

METHOD

The Task Analysis

The task analysis of the vocabulary subtest provides an example of the manner in which the task analysis began and the final direction it took as incorporated into the curriculum. For obvious reasons the vocabulary section of the S-B could not be used and the concrete nouns from the Dolch (1936) list of "The First Thousand Words for Children's Reading" were chosen to teach vocabulary. This list was chosen because it avoided many of the problems involved in sampling from dictionaries and a useful vocabulary could be taught without the implication that the vocabulary of the Stanford-Binet was being expressly taught.

When one looks to what are considered correct responses for the vocabulary subtest at the six-year level, nine of the first ten words are concrete nouns and the requirements for a correct response is usually that an attribute of the noun being given. Looking over the first fifteen words, the following attributes were found to generate questions whose answers were frequently sufficient for a correct response.

1. What are its physical dimensions?
2. Where is it found?
3. What are its uses of what purposes does it serve?
4. What is it made of?
5. What are its parts or of what things is it a part?
6. What are its special sensory or personal characteristics?

As the analysis proceeded, the teaching of the above attributes served two purposes. It aided in teaching knowledge which was applicable and useful for responding to other subtests. In addition, these qu implied other dimensions which should be taught, in addition to those above. Thus, if use or purpose was taught, then this task might include comprehension as it is defined at year IV in the Binet. The teaching of "Where is it found?" also inferred the teaching of locations, "What is found in this location?". These attributes with the analysis of the other items led eventually to a more general list of attributes or concepts.

The final list of attributes was expanded to include the following: size, color, shape, part of, action, location, use, material, number, and order. Teaching each of these concepts requires a knowledge of certain terms and grammers. After these basics were taught each of the concepts was used in teaching similarities, differences, and absurdities. We thus had a twelve by three matrix in which many different kinds of things could be taught in breadth and reinforced in both the similarity-difference and incongruity format.

A second and very important characteristic of the content implied by the matrix is that the content can be taught at various levels of difficulty. Concepts and Attributes could thus be taught at the various levels in the same-different and incongruity format. Consider the various levels of difficulty at which materials could be taught:

A. Same-Different.
   1. a. Which one is the same--as this one?
      b. Which ones are the same?
   2. Yes-no. Are these two the same?
   3. Description. How are these two the same? Different? (Used with pictures)
   4. Materials from memory. What kinds of materials are used in____________________________?
   5. Description from memory. Like number three but without pictures.
   6. Which materials could be used for____________? Which ones could not be used for_____________?
   7. Compound material task: Find the one that is located in the same place.
   8. Compound verbal identification tasks: I'm thinking of something that is the same size as A and is made out of the same material as B.

B. Incongruity. (Materials)
   1. Point to the material that does not belong.
   2. Yes-no. Is there anything wrong with this boat? Yes.
   3. Explanation: What's wrong with___________?
   4. Which material does not belong?
   5. Description from memory. What are__________made of?

Language usage, same different, and incongruities do not exhaust the formats for teaching the attributes and concepts. Bereiter, Case and Anderson (1968) have suggested four other promising formats for teaching these concepts. The first they call knowledge: that is teaching the facts and principles which go beyond what the child already knows so that the child can learn to extrapolate his knowledge through guided cues. The second is productive thinking: that is, teaching the child to use concepts to solve problems. The third is operations or nonverbal tasks which involve getting or using information related to concepts. Finally, questioning is a format that teaches the child to ask questions about the concepts being taught.

The concepts and attributes are not mutually exclusive and certainly the various formats for presenting the concepts are not finalized. It remains to be seen in future research whether these formats are more fruitful than others or if some combination of two or more formats is more sufficient. Little effort was made to use the first three additional formats suggested by Bereiter, although some attempt was made to teach the children self-questioning. That is, how does one go about teaching children to ask a question and to use the answer to formulate yet another question to solve a problem? Some beginning was made in solving this problem with the game which the children played, analogous to twenty-questions, in which the teacher responded only with yes-no.

At a low level of difficulty, the game began with the teacher placing two figures on the board and saying, "I am thinking of one of these figures." At the beginning the children often will claim that they know which of the figures the teacher is thinking about unless she gives some clue. It is possible to dramatize the point by showing the child two closed hands and asking the child, "Which hand has the raisin?" In the beginning neither hand has a raisin and the child is rewarded for saying, "I don't know."

Later, figures which differ on two dimensions are presented on the blackboard and the child is taught that one dimension is eliminated, the correct response is the remaining dimension. This general approach is extended to several dimensions with the child learning to eliminate alternatives. The terminal task of interest if verbally presenting the child with a class name such as animals and having the child figure out which animal the teacher is thinking about.

Subjects

The subjects were 20 children selected from the preschool population of economically depressed neighborhoods of Champaign-Urbana, a community of 100,000 in Central Illinois. Families judged by public aid and school authorities to be economically and educationally deprived were canvassed for children who had no previous preschool experience and who would be four years old before the first of December. This age criterion was established so that follow-up evaluations could be efficiently coordinated with the public schools. A home interviewer determined final eligibility for the program after she had completed a family history. In Table 1 are some of the characteristics of the children who participated in this, the "Binet" study and in two other approaches to preschool education in the larger research program at the University of Illinois.

Treatment

The preschool ran for two hours a day, five days a week for the academic year. Eighty minutes were devoted to instruction, while forty minutes were used for supporting activities. During the first four months of the program, the children remained with one teacher for instructional purposes; during the remaining three months the children went from one class to another in much the same manner as children in the upper grades.

Testing Procedures

The Stanford-Binet (S-B), Wechsler Preschool Intelligence Scale (WPPSI), and the Illinois Test of Psycholinguistic Abilities (ITPA) comprise the battery used to evaluate the progress of the children. The testing schedule used is presented in Table 2.

Qualified school psychologists administered the WPPSI, S-B, and ITPA while undergraduate assistants administered the curriculum test. The S-B was given four times so that the effectiveness of the curriculum could be repeatedly assessed. The Wechsler provided an independent check of the effectiveness of the curriculum to provide learning with some generality. The Achievement Test (Appendix A) was devised by the staff to assess the content of the curriculum.

Intelligence Test Results

From Table 2 it can be seen that there is a mean gain of 13.0 on the Stanford-Binet over the year. Almost half of this gain (5.9) was achieved within the first two months of the program. During the following three months the children gained an additional 4 points. It is of some interest to note that on the average the children gained only 3.1 2.8 points during the final three months of the program.

The time periods are of some interest. The data indicates that the 5.9 6 points gained in the first three months represent the total gain of most preschool programs. The data also corroborate the findings of Kohlberg (1968) who noted that children in most structured preschool programs tend to gain from 12 to 16 points during the first year.

The scores on the Verbal, Non-Verbal, and Total scores for the WPPSI, are also given in Table 2. It can be seen that the children gained 15.4 points in Verbal, 7.0 in Non-Verbal, and 12.6 in Total score. These data indicate clearly the emphasis upon verbal skills in the preschool program and the relative de-emphasis on non-verbal skills. The total score is simply a combining of the verbal and non-verbal scores and is not as clearly informative as looking at the verbal and non-verbal scores.

It should also be noted that the Binet and WPPSI data are similar in terms of total gains, but differ markedly in terms of level. The final Binet IQ is 105.8 while the final WPPSI total IQ is 94.8. The ten point difference between the WPPSI and the Binet is in line with other data obtained in other studies when both of these tests were used. Disadvantaged youngsters generally score about ten points lower on the Wechsler Intelligence Scale for Children than on the Binet.

An analysis of Binet and WPPSI IQ gains by IQ strata or level is given in Table 2. The data from Stanford-Binet indicate that the high group, those children with initial IQ's over 100, had a mean gain of 3.7 those with IQ's between 90 and 99 had a gain of 14.7, and those children with IQ's below 89 had a mean gain of 16.2. These data suggest that the program was more effective for children with IQ's over 100 benefitted less from the program.

The WPPSI data provide quite another picture. The WPPSI was included in the analysis to give an independent measure of the effectiveness of the preschool effort. The WPPSI verbal data indicate that all three strata benefitted substantially from the program. The WPPSI non-verbal data suggest that limited gains were made by each of the strata. The total WPPSI scores indicate little difference in gains by strata.

A paired test was used to measure the differences on the WPPSI between the pre- and post-tests (Table 2). For the verbal score, this difference was significant beyond the .001 level. The difference between pre- and post-testing for the non-verbal WPPSI was smaller and significant at only the .05 level. The total score reflects the large gains in verbal skills, and again the difference between the pre- and post-test was significant beyond the .001 level.

PREDICTION OF STANFORD-BINET PERFORMANCE FROM COURSE ACHIEVEMENT

To the extent that (a) the original conception of the Stanford-Binet as an achievement test is valid, (b) achievement components of Stanford-Binet performance were accurately identified, (c) the experimental curriculum embodied these components, and (d) the Achievement Test given at the end of the experimental program accurately indicated the children's degree of mastery of these separate components, then it should be possible to predict from Achievement Test results which Stanford-Binet items individual children would pass and fail. Accordingly, as a check on whether or not the above conditions jointly obtained, a small study was conducted on prediction of S-B item scores from Achievement Test item scores.

One of the investigators (Bereiter), who was not present during the conduct of the experiment and thus was not acquainted with the subjects, but who was acquainted with the curriculum, constructed prediction formulas for predicting success or failure for separate items on the Stanford-Binet, over age levels IV through VII, employing item response data from the Achievement Test. Obtained scores on the Achievement Test were consulted in devising the prediction formulas, but not obtained S-B scores. In other words, the predictions were carried out in ignorance of the individual S-B scores. The formulas, instead of making a dichotomous prediction of pass or fail, assigned probabilities of success, ranging from .00 to 1.00. The following are the prediction formulas used:

Item IV (1), Picture Vocabulary: Statements[1] -- .2 for each item correct in excess of 5.

Item IV (2), Objects from Memory: No prediction.

Item IV (3), Opposite Analogies: Polars -- .3 for each correct.

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[1] This and corresponding terms in subsequent items refer to the section of the Achievement Test to which the prediction formula applies. Thus, to estimate the probability that a given subject will pass S-B Item IV (1), find out how many items he got right on the "Statements" section of the Achievement Test and give him .2 point for every one right over five. There are 10 items on the "Statements" section.

If a subject got 7 right, that would be two more than five. Counting .2 point for each of these gives an estimated probability of .4 for passing S-B Item IV (1).

Item IV (4), Picture Identification: Objects -- .2 for each object for which at least one "why" question was correctly answered.

Item IV (5), Discrimination of Forms: Shapes -- .2 for each correct.

Item IV (6), Comprehension II: Instrumental Acts -- .2 for each correct.

Item IV-6 (1), Aesthetic Comparisons: No prediction.

Item IV-6 (2), Opposite Analogies I: Polars -- .2 for each correct.

Item IV-6 (3), Picture Similarities and Differences: Same and Different -- 1.0 if both parts of any item correct; .6 if at least one same and one different correct, but not on same item; .3 if at least one correct; .0 if none correct.

Item IV-6 (4), Materials: Lower of the probabilities obtained by (a) Materials -- .7 for items 2 and 5 correct, .1 for each additional; .3 for <u>2</u> or <u>5</u> correct, .1 for each additional; .0 for neither 2 nor 5 correct; (b) Objects: .5 if correct material given for <u>house</u>; .2 for each additional object for which material correct; .0 if incorrect material for <u>house</u>.

Item IV-6 (5), Three Commissions: Function words -- .3 for each.

Item IV-6 (6), Comprehension III: Instrumental Acts, items 6-10 -- .3 for each correct.

Item V (1), Picture Completion: Objects: .2 for each object for which at least two correct parts mentioned.

Item V (2), Folding Triangle: No prediction.

Item V (3), Definitions: Categories -- .4 for each correct.

Item V (4), Copying Square: No prediction.

Item V (5), Picture Similarities and Differences: Same and Different -- .5 for each item with both parts correct.

Item V (6), Patience: rectangles: No prediction.

Item VI (1), Vocabulary: Categories -- .3 for each correct.

Item VI (2), Differences: Same and Different -- .2 for each correct difference.

Item VI (3), Mutilated Pictures: Objects -- .8 minus .4 for each Absurd Question missed.

Item VI (4), Number Concepts: Counting -- .3 for each correct.

Item VI (5), Opposite Analogies [illegible] Polars -- .1 for each correct.

Item VI (6), Maze: No prediction.

Item VII (1), Picture Absurdities: Objects -- .1 for each Absurd Question correct plus .1 for each Object with at least one correct response for each part.

Item VII (2), Similarities: Same and Different --.2 for each correct similarity.

Item VII (3), Copying Diamond: No prediction.

Item VII (4), Comprehension IV: Instrumental Acts, items, 6-10 -- .2 for each correct.

Item VII (5), Opposite Analogies III: Polars and Categories -- .1 for each correct.

Item VII (6), Five Digits: Memory for Unrelated Words and items 3 and 4 -- .5 for each correct.

It will be noted that no predictions were made for 7 of the items. These are performance items for which no clearly relevant achievement data were available. The construction of these prediction formulas was necessarily carried out intuitively. The relevance of the Achievement Items to the S-B Items is usually obvious, but the particular weights assigned to Achievement Items reflect complex and possibly idiosyncratic judgments. Once the formulas were set down, however, the making of individual predictions from them was a perfectly objective procedure. Accordingly, for each of the 20 subjects, probabilities of success were-calculated for each of 23 S-B items.

If the 23 probabilities for a given subject are totaled, they give a prediction of the total number of items out of the 23 that he will get right. The mean predicted score obtained in this way was 16.08 correct, with a standard deviation of 3.44. The actual mean number correct was 13.90, with a standard deviation of 3.46. Thus, there was a mean over-prediction of 2.18 items. This discrepancy is highly significant ($t = 4.45$, d.f. = 19), suggesting a consistent over-prediction. Indeed, scores were over-predicted for 17 subjects and under-predicted for only 3. The product-moment correlation between predicted and obtained total scores for the 20 subjects was .80.

If the 20 probabilities for a given item are totaled, they give a prediction of the number of subjects who will pass the item. The predicted and actual numbers passing each item are shown in Table 8. Success of prediction ranged from perfect on item IV-6 (5), where all but one person was assigned a probability of 1.00 of passing the item and all but that one person did, to disastrous on item VI (1), where no one passed although the average assigned probability of passing was .92. In spite of the overall tendency to over-predict success, the formulas actually under-predicted the number passing on as many items as they over-predicted it, the largest errors, however, being ones of over-prediction.

It may be profitable to examine some of the largest errors for what light they may shed on the substance of the study. The failure of any children to pass the level VI vocabulary item, when almost all had been predicted to do so, was the most puzzling result. Note that 17 children passed the Definitions item at level V, which is of the same type. This would suggest that the difficulty was lack of specific vocabulary rather than inability to give definitions. The Achievement Test provided no systematic inventory of vocabulary. The section on which the child is required to provide the class label, given a series of instances of the class. It was reasoned that this was a necessary, though certainly not sufficient constituent of S-B vocabulary test performance. But it would also appear that all children were able to perform this task to a certain degree, since every child got at least two of the five Category items correct. Be that as it may, it is plain that the program was not successful in building general vocabulary up to the point of the other components.

Large over-predictions are also found for the number of children passing absurdities, comprehension, and opposite analogies items at level VII. Similar types of items are passed with under-predicted frequencies at lower age levels, however, suggesting that the difficulty with prediction at level VII is that the subtlety and complexity of the items exceeds that of the related kinds of material dealt with in the program, so that mastery of these easier materials is no assurance of success.

In general, it may be said that prediction for items was not nearly so accurate as prediction for individuals. The product-moment correlation between predicted and actual numbers passing each item was .58, compared to .80 for the correlation between predicted and actual scores for subjects. The total error of prediction is, of course, the same in either case; but in the case of persons the variance of predicted and actual scores was virtually identical whereas in the case of items the variance of predicted item totals was only half that of the variance of actual item totals, indicating that the prediction formulas were more sensitive to individual differences in ability than to differences between items.

As a final test on the efficiency of prediction, the correlation was computed between total number of items correct out of the 23 S-B items under consideration and the total number of correct responses o of the 192 respon. es recorded for the Achievement Test. obtained correlation was .79, almost exactly the same as that obtained om the fo la-derived estimates. Thus, as far as predicting an ind dual's overall performance on the S-B is concerned, his overall undi entiated performance on the Achievement Test is as good predictor as t e sum of the specific item-by-item predictions. This is eve mo tellingly demonstrated if the 192 achievement items are subdivided into e 124 which at some point or other entered into the item-by-item prediction formulas, and could thus be judged to be more relevant to Binet performance, and the 68 items which were not so used and could accordingly be judged less relevant. Scores on the "relevant" achievement items were found to correlate .77 with Binet performance and scores on the less relevant" items were found to correlate .76. Scores on the "relevant" achievement items gains reflect the accelerated learning of basic thinking skills. It is also possible that these basic skills are taught equally well by concentrating upon academic subjects like reading and arithmetic rather than upon Binet-related material, as suggested by results with the academically-oriented preschool program. If this is true, then an academically-oriented program would be preferable because of its more direct contribution to scholastic achievement.

DISCUSSION AND SUMMARY

A curriculum was devised by working backward from Stanford- Binet items to specification of a universe of content for which the Stanford-Binet could serve as a content-valid achievement test. It was reasoned that this curriculum should correspond in effect to the hypothetical "hidden curriculum" of the middle-class home. The curriculum was tested on 20 four-year-old disadvantaged children, selected according to the same criteria as other children in the current series of investigations.

The program was conducted for eight months, two hours daily, with a teacher-pupil ratio of one-to-five. The Stanford-Binet was administered four times during the course of the experiment, curriculum content and procedures being modified in the light of results. The Wechsler Preschool and Primary Scale of Intelligence (WPPSI) was administered at the beginning and end as a control measure for non-specific effects on IQ. The content of this test was not known to curriculum writers and teachers and pre-test scores were not made known to them either. An Achievement Test of 192 items was administered at the end of the program, testing the amount learned in the specific areas touched on in the "Binet curriculum" -- since these areas did not correspond to Binet items but rather to the organization of the curriculum.

Total IQ gain was 13 points on the Stanford-Binet -- no better than that achieved previously with the highly structured programs which made no effort to teach Binet-related content. Gain on the WPPSI turned out to be of the same magnitude, thus indicating that the gains were in no wise test-specific. Prediction formulas were constructed for deriving from an individual's performance on relevant sections of the Achievement Test, estimates of the probability of his passing specific Stanford-Binet items. Predictions were made for 23 items in the age-level range of IV through VII. Actual and predicted numbers correct, for the 20 subjects in the study, correlated .80. Actual and predicted item difficulties for the 23 items, however, correlated only .58. It was furthermore found that total number of items correct on the Achievement Test correlated as well with Binet performance as did the formula-derived estimate, and performance on Achievement Test items judged most relevant to Binet performance yielded no better correlation with Binet performance than those not judged relevant to it.

These results were taken as indicating that there was not a close relationship between curriculum content and intelligence test performance, leaving open the possibility that what accounted for the non-trivial part of the IQ gain, in this as well as in the other studies in this series, might have been the accelerated acquisition of certain basic thinking skills.

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Table 1

Initial Group Composition

Program	N	Mean Binet CA	Mean Binet IQ	Intelligence Strata Means						Race - Sex			
				High	N	Middle	N	Low	N	Black M	Black F	White M	White F
Binet	20	48.9	92.8	105.0	4	95.3	10	80.6	6	6	8	4	2
Traditional	27	52.4	94.1	107.6	8	93.2	12	83.0	7	10	7	5	5
Bereiter (Direct Verbal)	29	50.7	93.2	108.5	8	94.1	9	82.4	12	9	9	4	7

Table 2

Mean Stanford-Binet Scores for the Four Test Intervals

Months of Intervention		0	2	5	8	
Stanford Binet		92.8	98.7	103.0	105.8	
Wechsler Preschool Primary Scale of Inteligence	verbal	82.5			97.9	.001
	non-verbal	85.3			92.4	.05
	total	82.2			94.8	.001

Table 3

IQ Gains by Intelligence Strata

Initial IQ Strata	Stanford-Binet	WPPSI Verbal	WPPSI Non-Verbal	WPPSI Total
High	3.7	14.5	5.5	10.0
Medium	14.7	17.1	7.5	13.8
Low	16.2	13.2	7.3	11.8

Achievement Test

Area I

1. Statements (Child is to repeat after the teacher)

Hold up an object and say, "This is an ________." Hand the object to the child and say, "Now you say it." (If necessary ask child to repeat statement - ask only once.)

Each child should have two chances to say the whole statement. In the space provided, place a plus or a minus to indicate whether the child passed or failed on that task.

Trials

Object

zebra ________
pencil ________
chalk ________
block ________
spoon ________

cup ________
eraser ________
car ________
book ________
ball ________

2. Plurals

If I have one apple we say, "This is an apple--if I have more than one apple we say, ____________."

Present two of the following objects and say, "Tell me ______." (If necessary, ask child to repeat statement--ask only once.)

Trials

Object

zebra ________
pencil ________
chalk ________
block ________
spoons ________

cup ________
eraser ________
car ________
book ________
balls ________

3. Prepositions (Place object between two erasers and say, "Where is the ________?")

1. Between

zebra ______ pencil ______ block ______

2. On (Place object on a book and say, "Where is the ____?")

chalk ______ cup ______ block ______

3. Beside (Place object side by side with the car and say, "Where is the __________?")

eraser ______ block ______ spoon ______

4. Inside (Place object in a cup and say, Where is the __________?")

pencil ______ car ______ ball ______

5. In back of (Place object in back of car. Specify: "This is the front of the car." (Point to front of car.)

chalk ______ cup ______ ball ______

4. Polars

Be sure to get the child's full attention before you start. Question may be repeated once.

1. "Listen. If you are not tall you are (short)?" __________
2. "Listen. If a dress is not new then it is (old)?" ________
3. "Listen. If a cloth is not wet then it is (dry)?" ________
4. "Listen. If a stick is not straight then it is (crooked)?" __________
5. "Listen. If a boy is not fat, he is (skinny)?" __________

5. Categories

"I'm talking about something." "What am I talking about?" (Tester names the examples.) May repeat list once.

1. (Toys) -- ball, doll, blocks, whistle, games, little wagon __________
2. (Food) -- apple, hamburger, juice, cracker, french fries __________
3. (Vehicles) -- train, car, bus, boat, bicycle, wagon, tractor __________
4. (Containers) -- sacks, boxes, cups, bags, purse, cartons __________

5. (Farm animals) -- cow, pig, duck, horse, sheep ________

6. Function Words (Use two blocks and three pencils.)

1. Say, "Hand me a block and a pencil." ____ ____ ____ ____.
"What did you do?"

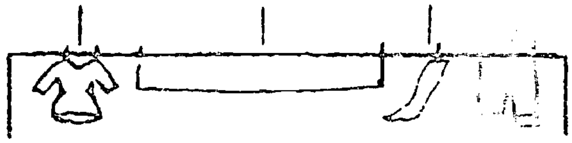
2. Say, "Hand me a block or a pencil." ____ ____ ____ ____.

3. Say, "Give me some of the pencils." ____ ____ ____ ____.

4. Say, "Give me all of the pencils." ____ ____ ____ ____.

5. Say, "Give me both of the blocks." ____ ____ ____ ____.

6. Picture story on board. Hanging the wash:



a) What did I hang first, second, third, fourth, last?

b) What did I hang before I hung the sock? The sheet?

c) What did I hang after I hung the sheet? The pants?

d) If I had hung the pants first, then the sock, then the sheet, then the dress. If the pants are first, what is second? _____ What is last? _____

7. Same and Different

Ask the child, "How are ______ and ______ the same and how are they different?" May be repeated once.

1. Horse and a cow. Same ________ Different ________
2. Red block and a green block. Same _____ Different _______
3. Tall man and short man. Same ______ Different ______
4. Wood and glass. Same ______ Different ______
5. Cup and box. Same ______ Different ______

Area II

1. Locations

   A. I see water in front of me and behind me. I see water to the right side and to the left side. I see water under me. I see a lot of water all around me. Where am I? _____

   B. I see pigs, sheep, cows, and a barn. Where am I?

   C. I see erasers, desks, chairs and a chalk board. Where am I?

   D. I see a giraffe and an elephant. Where am I?

   E. I see a sick man; men and women dressed in white. Where am I?

2. Memory for unrelated words

   Repeat each twice.

1.	boy, cup, draw	1. ________	2. ________
2.	horn, paper, fly, soft	1. ________	2. ________
3.	chain, bell, see, plant, face	1. ________	2. ________
4.	book, tree, shoe, map, dog, girl	1. ________	2. ________

Area III

1. Instrumental Acts

   What do you do with your eyes? ________
   ears? ________
   legs? ________
   nose? ________
   teeth? ________

   What do you do if you are cold inside the house? ______________

   What do you do if you want to cook a hot dog in a pan? ________

   What do you do if you want to find out if something is heavy? __

   What do you do if you want to cross a river? ________________

   What do you do if you feel sick? ______________________________

2. Days of the Week

What are the days of the week?

What day comes before Thursday? What day comes after Saturday?

3. What are the months of the year?

What month comes after March? What month comes before September?

4. Part - Whole Relationship

Object:	Parts:
TABLE	top, legs
Questions:	**Answers:**
1. What parts does a table have?	A table has a top. ______ A table has legs. ______
2. Why do we have tables?	To eat on. ______ To study on. ______
3. Where do we use tables?	In the house. ______ In school. ______
4. Why does a table have a top? Why does a table have legs?	To put things on. ______ To hold the top. ______
5. Is a table a piece of furniture?	Yes. ______
6. What is a table made of?	Wood. ______ Plastic. ______ Metal. ______
Absurd questions (e.g.): 7. Do we sleep on tables?	______

Object:	Parts:
LAMP	Shade, light bulb, stand, cord, switch, plug, base

Questions	Answers:
1. What parts does a lamp have?	A lamp has a shade. A lamp has a light bulb, etc.
2. Why do we have lamps?	To give us light.
3. Where do we find lamps?	In a room. In a house. In a store.
4. Why does a lamp have a switch? Why does a lamp have a light bulb?	To turn the light on. To give us light.
5. What is a lamp made of?	Glass. Metal. Wood. Paper. Plastic.

Object:

CORN

Parts:

Roots, stalk, leaves, ears

Questions:	Answers:
1. What parts does corn have?	Corn has roots. Corn has stalks, etc.
2. What do we do with corn?	We eat corn.
3. Where does corn grow?	In the ground.
4. Do we eat the roots? Do we eat the ears?	No. Yes.
5. Is corn food?	Yes.

Absurd Questions (e.g.):

6. Does corn have eyes?

Object:

SAW

Parts:

Handle, blade, teeth

Questions:	Answers:
1. What parts does a saw have?	A saw has a handle. A saw has a blade, etc.
2. What do we do with saws?	Cut wood.
3. Where do we use saws?	In the house. Outside. Wherever they are building things or fixing things.
4. Why does a saw have a handle?	To hold it.
Why does a saw have teeth?	To cut better.
5. Is a saw a tool?	Yes.
6. What is a saw made of?	Wood. Metal.

Absurd questions (e.g.)

7. Do we cut paper with a saw?

Object:	Parts:
HOUSE	Window, door, chimney, porch, walls, roof, stairs (steps), shutter, garage, railing

Questions:	Answers:
1. What parts does a house have?	A house has a window. A house has a door, etc.
2. Why do we have houses?	To live in.
3. Where do we find houses?	On the streets. In the city. On farms.
4. Why does a house have a window?	To let the light in.
Why does a house have a door? etc.	So you can enter.
5. Is a house a building?	Yes.

t are houses made of? Brick.
Wood.
Stone.
Shingles.
Stucco.
Glass.

surd questions (e.g.):

o houses take you places?

Area IV

1. [illegible]

Re gnition: 3___ 5___ 7___ 2___ 10___ 20___

Counting: Place a group of objects before the child and say, "Give me:"

2 ________ 7 ________ 10 ________

2. Sequences
Say to the child, "Do this!" Ask for demonstration not verbal response.

A. Pat your knee, clap your hand. 1 ___ 2 ___

B. Pat your knee, clap your hand, tap your head. 1 ___ 2 ___

C. Clap your hand, stamp your feet, pat your knee, tap your head. 1 ___ 2 ___

3. Shape
(The small colored pieces)
Circle___ square___ triangle___ rectangle___ trapezoid___ oval___

4. Colors
Use red, green, blue, yellow, black, white construction paper

Red___ green___ blue___ orange___ yellow___ black___ white___

5. Materials
hat is this made of?

Pla tic___ wood___ metal___ glass___ leather___