

A COMPARISON OF SCHOOL READINESS OF FIVE-YEAR
OLDS IN A MONTESSORI SCHOOL AND IN A
UNIVERSITY LABORATORY KINDERGARTEN

by

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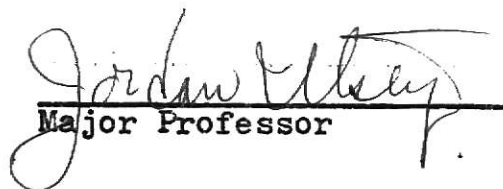
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CHAPTER I

INTRODUCTION

Preschools have a momentous responsibility to America and its society. They must initiate youth to their first and foremost formal schooling. Rambusch (1962:6) has said of the responsibility of the preschool,

. . . in the complex and competitive culture of the next decade in America, the goals of early education must be related to terminal educational goals.

Research reveals that society now and in the future will make challenging demands on its inhabitants. It will be the preschools' responsibility to develop its pupils so as to meet these demands. Preschools must instill in their pupils fundamentals and abilities for obtaining the skills necessary for making adequate adjustments in their environment.

The University Laboratory Kindergarten and the Montessori Kindergarten are two established revolutionized disciplines of preschool level education in America. Each of them has its own goals and methods. Which of their goals and methods best meet the demands of society? Which better prepares youngsters for terminal educational skills? Which

is most significant as a preschool discipline? The answers are not simple, but in the development of this study, the facts will be presented and the issues will be clarified.

Statement of Problem

The major purpose of this study was to identify and compare the readiness of five-year olds in a Montessori Kindergarten and in a University Laboratory Kindergarten, using the Screening Test of Academic Readiness (STAR). A further purpose of this study was to compare the philosophies and curricula of the two schools.

It was hypothesized that: (1) the child whose early education has been enriched by the Montessori method of teaching is better prepared for later schooling than a child with no preschool preparation; (2) the child whose early education has been enriched by the University Laboratory Kindergarten is better prepared for later schooling than a child with no preschool preparation; and (3) the children prepared by the Montessori or the University Laboratory Kindergarten will show no significant difference in readiness.

Definition of Terms

The following terms will be used:

Montessori Method. The child is considered a self-activated learner at work in a prepared environment of

programmed materials which encourage auto-education. It recognizes the importance of allowing the young child to utilize his formative and sensitive periods (Deighton, 1971).

Montessori School. A school using the Montessori method of teaching.

Preschool. A school level for the years preceding the first grade.

Readiness. The extent to which a child has reached the developmental stage for learning and will profitably begin a formal instructional program in school (Lennon, 1968).

University Laboratory Kindergarten School. A school established and operated by a university which provides for child study, experimentation and demonstration of young children, and for the benefit of persons working in home-making, teacher education, and research (Gore and Koury, 1964).

In this study, "University Laboratory Kindergarten" is synonymous to "kindergarten", "conventional kindergarten", and "campus school".

Delimitations

This study was limited to forty (40) subjects, hand-picked by their school principals. None of the subjects were paired for race, IQ, or socioeconomic level. The age of the subjects is the only factor held constant in this study.

CHAPTER II

REVIEW OF LITERATURE

The following is an analysis of literature related to the study that was devised for this investigation:

I. Literature Supporting the Montessori School

Historical Background of Montessori Kindergarten. The Montessori method of teaching began with Maria Montessori (1870-1952).

Standing (1965) indicated that Maria Montessori, while serving as Italy's first woman doctor of medicine, became interested in pedagogy.

According to The Montessori Method (1964), it was stated that Maria Montessori first worked with educating mentally deficient children. Her methods of instruction proved so successful that they won for her immediate public recognition. Montessori had educated mentally deficient children to pass public examinations designed for normal children.

After studying the writings of Itard and Sequin for seven years, Maria Montessori improved her teaching methods. She used these improved methods to help normal children from the slums of the Children's House of Italy. These children,

ages two to seven, learned to write and read, although Montessori did not have this as an objective.

In 1913, hundreds of Americans then came to Rome to see Montessori at work. Following their visit, she came to America in order to lecture and train others in her methods.

Today, the Montessorian methods live on. Standing (1952) cites that Mario Montessori, an adopted son of Maria Montessori, directs and coordinates the work of the Association Montessori Internationale, with headquarters in Amsterdam.

According to Footlick (1972), Maria Montessori created a system of education that extended through high school. Although in the United States today only a dozen secondary Montessori schools exist; however, Montessori schools at all levels are opening at a rate of 75 per year.

Montessori Curriculum. Lorton (1968:4) indicated that "The Montessori approach to teaching asserts that a child's development is characterized by 'Sensitive Periods'." These Sensitive Periods occur at definite periods of time in the child's life, specifically babyhood to age six, at a time in which aptitudes can be learned almost effortlessly and with more enthusiasm.

Lillard (1972) discussed the Sensitive Periods as a discovery which Maria Montessori felt to be most valuable. Lillard further explained that these periods are life patterns that the child follows in gaining knowledge of his environment; furthermore, each period is characterized by the behavior it manifests. Order characterizes the first Sensitive Period. A second Sensitive Period appears as a desire to explore the environment with tongue and hands. The child must be exposed to language during this period or it will not develop. The third period is identified as walking. Then the fourth period is characterized so as to involve intense interest in objects that are extremely tiny, and sometimes escape the notices of others (adults). Finally, the fifth Sensitive Period is revealed through an interest in the social aspects of life.

The "prepared environment" is essentially characteristic of the Montessori method because of the ever present highly structured Montessorian designed didactic materials.

Lorton (1968) stated that these materials were designed to teach specific concepts or relationships of size, shape, color, and texture, and were divided into four groups, according to their purposes: (1) practical living, (2) sensorial, (3) arithmetic, and (4) language.

Lillard (1972:61, 62) listed four principles involved in identifying Montessori materials:

1. The difficulty or the error that the child is to discover and understand must be isolated in a single piece of material.
2. The materials progress from simple to more complex design and usage.
3. The materials are designed to prepare the child indirectly for future learning.
4. The materials begin as concrete expressions of an idea and gradually become more and more abstract representations.

Each of the various apparatus or materials used in the Montessori classroom are self-corrective in nature. This is further explained by Lillard (1972:63) as he stated,

. . . Montessori materials are designed for auto-education, and a control of error lies in the materials themselves rather than in the teacher. The control of error guides the child in his use of the materials and permits him to recognize his own mistakes.

The "Children's House" is part of the environment which is offered in the Montessori school. The Montessori school is built like a real house, with a set of rooms, along with a garden. There is a central or principle room of the building, along with a bathroom, dining room, a rest room, and a room for manual work.

According to Montessori (1965:38):

. . . All of the furniture is light enough to move, painted in light color to be cleaned with soap and water by the children; low enough in height for them to easily use. Round the walls are blackboards, fixed at a low level also. Pictures of birds, flowers, and historical events are found on the walls.

Montessori further states (1965:44),

. . . there is no limit to the equipment of the 'Children's Houses' because the children themselves do everything. They sweep the rooms, dust, and wash the furniture, polish the brasses, lay and clear away the table, wash up, sweep, and roll up rugs, wash a few little clothes, and cook eggs.

In the Montessori method, the role of the directress (teacher) is minimized, as the child becomes self-directive from using highly structured and self-corrective materials.

Rambusch (1965:18) described the Montessori teacher as:

. . . free to let the child experiment, perceive his own risks in learning. Her task demands that she respect the personal styles of her charges, not impose her styles on her charges

Lillard (1972) defines the Montessori method as an indirect approach to teaching. She further states that when a class is first begun, the teacher must "show the way". She does this by introducing a series of preparatory exercises that help the child to concentrate on reality and control of movement. These exercises may consist of arranging chairs and tables in proper places without making any noise or moving about the room on tiptoe. Gradually, some of the exercises of daily living are introduced, and eventually, little by little, the didactic materials. Here the teacher supervises the children, and has individual lessons showing the precise use of the didactic materials, which is called the "Fundamental Lesson".

In the Montessori classroom, the real goal of the lesson has been achieved when self-discipline and freedom become a part of the development of the child.

A typical daily schedule of a Montessori school follows:

TABLE 1

Daily Schedule For A Montessori Kindergarten

Time	Activity
8:00 a.m.	Teachers arrive--prepare classrooms and lessons as needed according to lesson plans for the day.
9:00 a.m.	Children arrive. 3-7 year olds personal handshake greeting by directress. Individual conversation with each child is desired. Students go to basic teacher for sandpaper letters, phonogram, phonics drills, handwriting, visual motor games, spelling, individual lessons assignments according to age.
9:00 to 11:30 a.m.	Uninterrupted lessons and learning activities inside and/or outside. Individual reading, math workbook, reading skills development. Free choice for $2\frac{1}{2}$ - $4\frac{1}{2}$ year olds.

Intensive daily records are kept on each child and individual progress or needs noted.

The enormous outside learning environment is open all day. Specialized teaching personnel is in this area to assist the students as needed, at all times.

TABLE 1

Daily Schedule For A Montessori Kindergarten
(continued)

Time	Activity
(Students get water, go to rest room, prepare individual carrot, bread and butter, or other food lessons, during the day, as they wish and according to each child's own needs.)	
Buffet Snack open from 9:00 to 10:45 a.m.	
11:30 a.m.	Children set tables for lunch, milk pitchers, place mats, cups, and napkins on tables (children bring own lunch from home). Milk is furnished by school. In warm weather they often eat outside.
11:45 a.m.	Silence
12:00 to 12:45 p.m.	Lunch and clean up
12:45 to 1:45 p.m.	Uninterrupted lessons. Cleaning cages of pets. Feeding animals indoor and out. Watering garden. Stories are read to small group of children as requested by children. Group lessons and activities in Science, Art, and French.
1:45 p.m.	Large group time; Music, Language development; story time, Social Studies, Dancing, Drama.
2:20 p.m.	Rides begin to come. Children may be picked up between 2:20 and 2:30.
2:30 p.m.	School dismissed.
2:30 to 3:00 p.m.	Teacher marks all records regarding each child's progress.

Montessori and Readiness. According to Montessori (1965:c),

. . . The Montessori education is preparation for the first stages of essential culture--writing, reading, and numbers--and that knowledge comes as an easy, spontaneous, and logical consequence of preparation . . .

Further, Stendler (1965) concludes that Montessori should be credited with the fact that its young children can and do teach themselves to read and write without much help, and that they engage in such tasks with considerable zest.

The element of correctiveness, which is a built-in component of Montessori's didactic materials, develops and enhances independence in the child. These materials make the child dependent only on himself, without the child depending on his teacher or a classmate for clearing up difficulties that sometime occur in the manipulation of the materials.

Schmidt (1968) points out that the Montessori child's social adjustment is achieved through genuine social life in the classroom. The child learns to share, to borrow, to assume responsibility, to discuss, and to help by practicing it in the classroom.

Miss D. Cramer, directress of Montessori School of Baton Rouge, Inc., of Baton Rouge, Louisiana, and a former student of Maria Montessori in September, 1972, discussed

the Montessori child's freedom to discipline himself:

(Permission to quote secured)

The Montessori approach to freedom is a unique feature of the program. For the student, freedom is a goal, not a point of beginning. The free child develops his potential, solves his own problems, and is capable of asking for and accepting directions. The child discovers discipline in his own way and in his own time.

Stendler (1965) confessed that with his freedom, the Montessori child can carry out actions; he can learn the difference between good and evil. Most important, he can pursue individual activities, according to his interests.

Lillard (1972:68) quoted John Dewey as he criticized the Montessori method for accomplishing physical freedom in the classroom, but not intellectual freedom:

. . . But there is no freedom allowed the child to create. He is free to choose which apparatus he will use, but never to choose his own ends, never to bend a material to his own plans. For the material is limited to a fixed number of things which must be handled in a certain way.

The opportunities in the Montessori school for developing readiness are superior, according to Clark (1963:13):

There seems little doubt that a child in the Montessori School who has many opportunities to touch, taste, smell, hear, and see, to manipulate and enjoy all the forms of sensory exploration of his environment, has a better chance to develop in every way Empirical studies show that the importance of sensory motor activity and the manipulation of concrete objects have been demonstrated beyond dispute. This is particularly true in the case of the perception development.

Lillard (1972:143) discussed Montessori's method for the development of the simplest life skills:

. . . She (Montessori) built into her method the simplest of life's experiences--how to wash, dress, move about, carry things, how to hear, touch, and see. Every skill had to be presented from its most primitive beginnings; muscles were developed for holding a pencil before the pencil was given, an object was handled before a name was given. A careful path was always laid from the undeveloped to the developed, from the concrete to the abstract.

Further, Lillard (1972) expressed that the Montessori method emphasized the development of a positive self-image through work and real accomplishment.

II. Literature Supporting the University Laboratory Kindergarten

Historical Background. According to Dewey (1966), the first laboratory school was a cooperative venture of parents, teachers, and educators initiated at the University of Chicago in 1896 under the direction of John Dewey, a brilliant educational philosopher. He further stated that the school was a laboratory for departments of psychology and pedagogy, intended to be a place where theories and ideas of education could be demonstrated and tested.

Lambert (1966:10) states that "Dewey's own account of the work of his experimental school shows that efforts were made to put into effect some principles which Froebel had set forth decades earlier."

The Encyclopedia of Educational Research (1952) stated that although Froebel is thought of as the founder of kindergarten methods and objectives, it was John Dewey who separated the important and valuable educational principles of Froebel's as they are implemented in conventional kindergarten teaching.

The first laboratory school children were taught by kindergarten primary teachers, using kindergarten methods on children ranging in ages from four to fourteen, according to Dewey (1966).

Today the campus school or laboratory school serves many functions. These functions are illustrated in Table 2.

TABLE 2
Function of Laboratory School

Function	Number of Schools Reporting
Observation	21
Demonstration	18
Student Teaching	15
Professional Services	11
Research	9

Source: 1962 survey of 21 campus schools by
Louis Rzepka

Curriculum of University Laboratory Kindergarten. The Encyclopedia of Educational Research (1952:649) listed Froebel's educational curriculum as based upon the philosophy of absolute idealism. He emphasized:

. . . self-activity as an essential to development. Basically, his principles were (1) to make the child and not the subject matter, the center of the educational process, and that (2) play was the core of the child's activity.

While Lambert (1968:168) explained that Dewey believed that learning must grow out of the normal activities of the child. Lambert (1968) quoted Dewey as saying:

Education involves not merely learning, but play, construction of tools, contact with nature, expression, and activity; and the school should be a place where children are working rather than listening, learning life by living life, and becoming acquainted with social institutions and industrial process by studying them.

Today, as a result of Froebel and Dewey, Berson (1959) looks at the kindergarten curriculum as a combined work-play time.

The work-play period, according to Lambert (1968), is divided into two blocks; materials and equipment are designed to be used according to the blocks.

The play period equipment has been classified as follows by Berson (1959:88):

1. Outdoor equipment: swings, slides, jungle gyms, . . .
2. Indoor equipment: block-building and play carpentry equipment, . . .

3. Activities play equipment: sandboxes, trays for water play, rocking boat, climbing boxes, . . .
4. Less active building and manipulative play: trains, rubber dolls, pegs, spools, beads, airplanes, boats, . . .

A typical daily schedule of a University Laboratory School is shown in Table 3.

TABLE 3
Daily Schedule For A University Laboratory
Kindergarten

Time	Activity
8:00 - 9:00	Greetings, opening exercises, sharing news and social living
9:00 - 10:00	Language Arts (language experiences, dramatic play, creative expression, listening, stories, poems, reading)
	Rhythms, singing, musical activities, art, etc.
	Social Studies, Science
	Number readiness
10:00 - 10:45	Recess and rest (quiet period with stories)
10:45 - 11:00	Health and preparation for lunch
11:10 - 11:55	Lunch
12:00 - 1:00	Rest
1:00 - 1:30	Music
1:30 - 2:00	Story hour

TABLE 3

Daily Schedule For A University Laboratory
Kindergarten
(continued)

Time	Activity
2:00 - 2:30	Physical Education
2:30 - 3:00	Use toilet, getting water, preparation for dismissal
3:00	Dismissal

A 1925 standard for scheduling of kindergarten programs still seems appropriate. The Encyclopedia of Educational Research (1952:392) stated this standard roughly as:

. . . kindergarten schedules should devote 36 percent of the time to physical and health education, including play on apparatus, outdoor play, games, rhythms, rest, and lunch; 33 percent of the time to general arts, including house-keeping activities, fine and industrial art, and dramatic art; 16 percent of the time to general assemblies, including plans for work, behavior, hygiene, and nature study; 9 percent of the time to literature and language, including stories told and read, poems read and repeated, conversation, and original stories; and 6 percent of the time to music, including singing, music appreciation, and rhythm band work.

University Laboratory Kindergarten and Readiness.

Hefferman, et. al. (1970), point out that the child is encouraged to use concrete materials in kindergarten which deepens his understanding through sensory impressions which are needed for school.

Foster and Headley (1966:70) state:

. . . the kindergarten program . . . through planned experiences and the teacher's awareness of the educational implications of casual experiences are foundations for learning which are constantly being built.

Further, Foster and Headley (1966:110) stated that:

If a child has had the opportunity to build, and if he has been capable of building for himself a broad base of understanding in the kindergarten, his first-grade experiences will seem natural and satisfying extensions of earlier experiences. His new learnings will extend and deepen his present base of understanding. Most children who have had the opportunity to experience 9 to 10 months of kindergarten living at its best will find the transition from kindergarten to first grade a comfortable though most thrilling experience.

According to Todd, et. al. (1970), attention to readiness is given by the kindergarten in recognition of the individual differences and of the understanding that each child learns at his own schedule of development.

Ryan (1969:127) tells of signs of readiness that should be exhibited by the kindergartener before he goes to first grade:

The signs are many. He is in good physical health, free from any remediable defects in sight, sound, speech, or large muscle development. He understands his home, school, and community, and has explored these environments widely and gained a broad background of experiences in them. He has made a good adjustment to school, understands the routines, can work independently in school some of the time, is free from any feeling of fear, failure, or undue pressure, and can work without social or emotional difficulty with other children and adults in small groups. He has

developed his vocabulary and usage well enough to help plan, discuss, and share experiences, and is able to describe objects, and events and tell stories. He can listen attentively for more than just a few minutes at a time. He knows how to use creative materials, from crayons and paper, clay and paints, reasonably well. He can listen to, understand, and carry out instructions and suggestions, and assume some responsibilities with them. He is independent of home and parents enough to enter wholeheartedly into school activities.

Berson (1959) stated that when books are handled with great frequency, and respect in kindergarten, the children will be eager to learn reading in the first grade.

III. Literature Supporting the University Laboratory Kindergarten and the Montessori Kindergarten

Ward (1919:137) cites similar correspondence between the kindergarten and Montessori kindergarten. Ward discussed at length the method or device of any system (Montessori, Pestalozzi, Froebel) should challenge each to measure up to standards set up by the latest word from the science of child study. And, in regard to the practice and theory of any institution (home, kindergarten, Montessori) where little children are taught, such questions as the following should be asked:

1. Does it call for alert intelligence on the part of adults regarding the childish instincts, tendencies and needs which take turn in becoming prominent during these years?
2. Do the materials offered provide suitable nourishment for these hungering instincts while

they at the same time exert an influence toward socialized conduct?

3. Are these stimuli placed within the child's reach by the adult in such a manner that he spontaneously responds to them and thus becomes an active agent in his own development?
 - a. Are the child's tastes, abilities, and previous experiences so considered that the aims are childlike and natural?
 - b. Are the incipient powers of judgment and choice brought into exercise?
 - c. Is opportunity given for freedom (not caprice) which is balanced by responsibility, thus stimulating initiative, independence, and self-control?
 - d. Is there a tendency toward clear thinking, and toward the organization of ideas and activities?
 - e. Do activities tend toward self-directed and creative effort, and is the child happy in his work because it seems to him worthy of his effort (not monotonous drudgery) and because he can recognize and correct his own mistakes when they are pointed out?
 - f. Does the day's program hold the child's health as a supreme consideration, viewing subject matter in its relation to mental and physical fatigue?
 - g. Is the spirit of curiosity and wonder in regard to things in nature turned to account as the beginning of reverence and faith?

The objectives of the modern kindergarten--Froebelian and Montessorian--were listed by the Encyclopedia of American Research (1960:39) as:

. . . range from the general purpose of promoting physical, mental, emotional, and social development

of young children to more specific aims, such as: to uncover interests and aptitudes; to lay foundations for reading, writing, and number work; to promote children's safety; to help children get accustomed to working alone in spite of the presence of others and to work and plan with others in groups; to give broad contacts with persons like and unlike themselves; to teach children to take a reasonable amount of responsibility; to teach children sources of accurate information; to give an exposure to a wide variety of creative experiences and to encourage children to express their own ideas through a variety of media; to help children to accept themselves and to learn that they are persons of worth who can accomplish things of importance for which others respect them; to help children move as far as possible toward a solution of their problems and to provide practice and skill in thinking for themselves; and to inspire children to acquire an attitude of inquiry.

A comparison of Montessori and conventional kindergarten was made by Gitter (1964). The comparison is illustrated in Table 4.

TABLE 4

A Comparison of Montessori Kindergarten to
Conventional Kindergarten

Montessori	Conventional
The Montessori environment is reality-bound. Small furniture is designed to develop a sense of security which is especially helpful to children from disorganized homes. Order is stressed to give the child a further reinforcement of his feelings of security.	Fantasy is sometimes presented to children before their understanding of reality is complete and the children confuse the two. There is no great emphasis on order and the child is not as able to deal with his environment.

TABLE 4

A Comparison of Montessori Kindergarten to
Conventional Kindergarten
(continued)

Montessori	Conventional
Attitudes toward work are stressed because work is the basis of all accomplishment. The child is taught to respect the results of his own efforts rather than to depend upon the praises of others.	Work is not stressed. The child depends on the directions and praise of others as his motivation.
Self help is recognized as one of the major needs of small children. Techniques and methods to learn self-care without emotional overtones have been developed so that the child can develop independence and control of his environment. The Practical Life exercises are of particular value to children who have not received home training.	There is no organized plan to teach the child self-care activities. It is often assumed that this is done in the home but often the parents over-protect children and do not teach them.
Montessori training materials and methods stress development of all of the senses. Sensorial materials develop in the child an ability to see, compare, discriminate, and explore effectively.	Although given many areas to explore, the child in a conventional kindergarten is often not given a particular program of training geared to meet his own needs for muscular coordination, or auditory stimulation. The children are treated as a group rather than taken as individuals. The child is expected to do the same activities as all the other children at the same time. He is expected to conform to the demands of the classroom. Any child who needs repetition of a task by special work becomes known to the other children and is identified as different.
The child retains psychological freedom to move and work according to his own needs. He works on an independent basis. A child with special needs can be taken care of without having the matter brought to the attention of others.	

TABLE 4

A Comparison of Montessori Kindergarten to
Conventional Kindergarten
(continued)

Montessori	Conventional
Practical life exercises develop coordination of muscles, so important to later academic achievement.	Muscle coordination is not stressed through specific exercises.
Through specially prepared equipment the child learns to classify knowledge. Basic language exercises prepare the children for later academic skills of reading and writing.	Most activities are verbal with little emphasis on inner thought processes.
Self-correction gives the child greater room for expression of his individual differences. He identifies his own mistakes and becomes secure and confident in dealing with his own problems. It is an ego strengthening experience.	The weakness of the child becomes too well known to his peers and is not strengthened without the knowledge of others in his class. The teacher identifies and corrects his errors and the child becomes dependent on the judgment of others.

IV. Literature on Related Studies

Fleege (1967) studied the comparative effectiveness of Montessori pre-school and non-Montessori pre-school education. It was concluded that ninety-four percent of Montessori trained five to five and one-half year olds were ready to enter first grade compared with fifty percent of

the non-Montessori pre-school group. Comparable percentages for reading readiness indicated a higher maturity and readiness level in the Montessori trained group. Montessori pre-schoolers also showed superiority in interpersonal relations, learning ability, and interest in learning.

A longitudinal study by Berger (1967) compared the learning outcomes of children undergoing Montessori versus traditional pre-kindergarten training. No particular advantage was indicated for either Montessori or conventional teaching in terms of pupil's achievement levels relating to the cognitive abilities assessed (memory, discrimination learning, conceptual problem-solving, understanding, and utilization of basic relational concepts, general information, and comprehension). The Montessori training showed greater benefits in reinforcing autonomous cognitive styles, and developing perceptual analytic skills of children.

Bereiter (1967) did a comparison between two methods of teaching, Montessori and direct-verbal instruction. Both groups were pretested on the Illinois Test of Psycholinguistic Abilities (ITPA) and posttested on the ITPA at the end of the school year. On the ITPA pretest, no significant differences were obtained on subtest scores or total scores for both groups. The Montessori group did relatively better on tests of simple recognition and memory, whereas the direct instruction group did better on test involving abstraction.

McMorrow (1970), Mieztis (1971), and Rudominer (1970) conducted comparative preschool (Montessori, nursery school, kindergarten) studies. McMorrow (1970) concerned himself with Piagetian conservatism and moral judgment tasks. Mieztis' study looked at the differential effects of pre-school programs on measures of thinking, curiosity, verbal and perceptual exploration, and conceptual tempo. Rudominer (1970) studied initiative and mastery on a situational test of independence, self-reliance, and independence were analyzed using teacher rating scales.

Results of these related studies yielded that:

(1) On situational test of independence (Kagan's Matching Familiar Figures Test), there was no significant difference among the three groups.

(2) On measures of self-reliance and initiative, there were no differences between Montessori and nursery school, but the kindergarten children were significantly less self-reliant and showed significantly more initiative than the other two groups.

(3) Significant differences on teacher ratings indicated that the Montessori group was rated significantly more independent and more self-reliant than were the other two groups. The Montessori teacher had the highest expectations of independence, and more self-reliance than the other two groups.

(4) There was significant difference in performance by the three groups on the Piagetian conservation tasks.

In another study, Dreyer and Rigler (1969) compared the cognitive performance of a middle-class Montessori school group and a middle-class "traditional" nursery school group. The children were assessed on four measures: (1) ITPA--Vocal Encoding Test used to measure the child's verbal description of the world, (2) Picture Construction Test (PCT), a nonverbal creativity task, (3) Children's Embedded Figure Test (CEFT), a cognitive-style test scored for number of correct responses and total time; and (4) a free drawing test. Results yielded from the measures were that the nursery group obtained significant differences on the number of correct responses on the CEFT, but the Montessori children were significantly faster; thus, indicating a higher task orientation among the Montessori children. On the ITPA descriptions, the Montessori children used significantly more physical characteristics, and the nursery school children used significantly more functional characteristics. While on the free drawing test, Montessori children included people significantly less often than nursery school children. The investigator concluded that these findings reflected the emphases of the schools: Montessori program reflects physical work and school as a place of work, while the nursery program emphasizes social interaction and creative spontaneity.

Karnes (1969) compared the effects of five nine-month school training programs for four-year old children from economically depressed neighborhoods in the Champaign-Urbana area of Illinois. The programs were: (1) Karnes Ameliorative Program, (2) Direct Verbal Bereiter-Engelmann academic program, (3) Traditional program, (4) Community-Integrated program, and (5) a regular Montessori group. The children were pretested and posttested on the Stanford-Binet, PPVT, and ITPA and posttested on the Metropolitan Readiness Test.

I.Q. gains were significantly higher for the Ameliorative and Direct Verbal groups than for the Montessori and Community-Integrated groups. The Traditional group fell in between. The Ameliorative and Direct Verbal groups showed the highest gains on Frostig, ITPA, and Metropolitan Number Readiness Test. There were no significant differences between the five groups on the Metropolitan Reading Readiness Test. The conclusions were summed up as those in the Ameliorative and Direct Verbal programs made the greatest gains, those in Traditional program made modest gains, and those in the Community-Integrated and Montessori programs showed the least gains.

A follow-up investigation of this study and its subjects at the end of attendance in regular public kindergarten showed that the Montessori group made gains in verbal

expressive abilities, as compared to their earlier performance. Additionally, the Montessori pupils having had IQ's in the lowest stratum from the earlier study, made continuing IQ gains during kindergarten.

DiLorenzo, et. al. (1969), conducted a study on a year-long prekindergarten program in eight school districts in New York State. Eighteen hundred (1800) children were involved in the study. The results of reading readiness scores revealed significantly higher ones on the Metropolitan Readiness Test for the Montessori kindergarteners than for the other group involved.

Banta (1965) through a grant from the Office of Economic Opportunity initiated a research design which covered a three-year period, along with a follow-up which was to be done in six years. The major purpose of the study was to compare performances of four groups of children: (1) the Montessori classroom, (2) a non-graded classroom, (3) children with pre-school experience and in conventional graded classroom, and (4) children without pre-school experience and in conventional (graded) classrooms. The Cincinnati Autonomy Test Battery was designed to facilitate the type of teaching in the Montessori classroom, although it was carefully designed not to favor Montessori methods. This test battery was administered to all groups. Three years of testing yielded scores for the Montessori group consistently highest or

next to highest on all variables: curiosity and assertiveness, exploratory behavior, creativity, innovative behavior, motor impulse control, attention, persistence, reflectivity, field independence, and analytic perceptual process. The Metropolitan Readiness Test was given in one phase of the evaluation. It showed significant results which demonstrated that the Montessori class was most mature and ready for first-grade instruction.

SUMMARY OF LITERATURE

In comparing the readiness and curricular of the Montessori and University Laboratory Kindergartens, numerous differences and similarities were cited.

The curriculum of the Montessori Kindergarten readied the child for school through teaching him with a traditional and prescribed curriculum which expected discipline and independence to result; while the University Laboratory Kindergarten's curriculum recognized that play was essential in preparing the child for the reality of school. Each curriculum worked the child so he could acquire skills in writing, reading, and numbers. The literature also indicated a great concern for readiness on the part of both schools' instructional programs.

Related studies, Fleege (1967), Bereiter (1967), Di Lorenzo, et. al. (1969), and Banta (1965) indicated

higher maturity and readiness for the Montessori kindergarteners. Studies by Karnes (1969) and Dreyer and Rigler (1969) showed little differences in comparative preschool characteristics for the Montessori, nursery school, and kindergarten groups. The Montessori and conventional kindergarten groups showed no better advantages in learning outcomes for the Montessori kindergarten than for the conventional kindergarten, according to Berger's study (1967).

CHAPTER III

INSTRUMENT, SUBJECTS, AND METHODS OF PROCEDURE

The task of assessing the relationship of readiness between five-year olds at a University Laboratory Kindergarten and a Montessori Kindergarten on the Screening Test of Academic Readiness was the major design of this study. This chapter contains a discussion of the instrument used, selection of the subjects, administration of the test, and treatment of the data.

INSTRUMENT OF MEASUREMENT

Selection of instrument of measurement. An evaluative review of Screening Test of Academic Readiness (STAR) was provided by ERIC, and was the basis for its selection by the investigator. This test was used in regard to the age group to be tested, its availability, usefulness, validity, reliability, and whether or not it could be given without special psychological training.

Screening Test of Academic Readiness (STAR). This test was devised by A. Edward Ahr and is published by Priority Innovations, Incorporation, of Skokie, Illinois. The test manual prints the copyright date as 1966.

STAR, a group test, measures school readiness of preschoolers and kindergarteners.

The test yields eight subtest scores: Picture Vocabulary, Letters, Picture Completion, Copying, Picture Description, Human Figure Drawing or Draw-A-Man, Relationships, and Numbers. A deviation IQ is determined from its raw scores.

According to Ahr (1966:40), the norms used for STAR are middle class, suburban whites. The subjects included 1500 preschool and kindergarten children, between the ages of four years-one month and six years-five months.

It was indicated by Ahr (1966:40) that STAR's reliability has been uniformly high, ranging from .87 to .93 for various groups. Validity is also satisfactorily high.

SUBJECTS

The selected individuals used in this study comprised twenty from two schools: a Montessori Kindergarten and a University Laboratory Kindergarten.

The principals of each school assigned each subject to be tested.

The subjects were predominantly Caucasian in the Montessori Kindergarten with only four of the twenty subjects

being black children. All of the subjects in the University Laboratory Kindergarten were black.

Each subject is further described in Tables 5 and 6.

The subjects had been members of their present school for at least one school year prior to the administration of the test. Each subject had either been enrolled in the nursery division of the school, as in the case of the University Laboratory Kindergarten, or had been a part of the non-graded set-up in the Montessori Kindergarten.

PROCEDURE

The researcher thoroughly reviewed the available literature on the study. Farrell Library, Kansas State University at Manhattan, Kansas; Lewis Memorial Library, Grambling College at Grambling, Louisiana; Prescott Library, Louisiana Tech University Library at Ruston, Louisiana, and libraries at Baton Rouge, Louisiana--Louisiana State University Library, East Baton Rouge Parish Library, and the State Library of Louisiana--were used.

Permission to Test. The researcher was given permission to test by each of the school's principals. While in the case of the University Laboratory Kindergarten, special permission also had to be secured from its parent--the University, and its department of Home Economics (see Appendix).

TABLE 5

Personal Data Of Montessori Kindergarteners

Subject	G.A. Yr. Mo.	Sex	IQ	Father's Occupation
1	5-6	F	126	Doctor
2	5-4	F	120	Doctor
3	5-0	M	121	Accountant
4	5-10	F	103	Teacher
5	5-0	M	116	Sales Executive
6	5-4	M	123	Business Executive
7	5-8	M	104	Air Force Captain
8	5-8	M	110	Construction Company Owner
9	5-5	F	129	Engineer
10	5-6	F	111	Engineer
11	5-0	M	118	Doctor
12	5-10	M	105	Doctor
13	5-5	M	121	Attorney
14	5-4	M	116	Salesman
15	5-1	F	127	Pharmacist
16	5-0	M	123	Teacher
17	5-1	F	121	Doctor
18	5-0	M	123	Air Force Major
19	5-10	F	109	Attorney
20	5-1	F	117	Pro Football Player

TABLE 6

Personal Data of University Laboratory
Kindergarteners

Subject	C.A. Yr. Mo.	Sex	IQ	Father's Occupation
1	5-1	M	117	Industry Operator
2	5-8	F	113	Teacher-Coach
3	5-4	M	96	Food Service Director
4	5-5	F	112	Manager of Apartments
5	5-4	F	108	Teacher
6	5-4	M	102	Graduate student
7	5-3	F	114	Physics Professor
8	5-5	F	108	College Instructor
9	5-5	M	81	Assistant Principal
10	5-6	M	120	Service Engineer
11	5-3	F	101	Personnel Director
12	5-6	F	110	Industry Process Operator
13	5-4	M	84	University Professor
14	5-8	F	120	Teacher
15	5-2	F	122	Truck driver
16	5-4	F	89	Teacher-Coach
17	5-5	M	115	None
18	5-5	M	78	Disabled
19	5-4	M	98	Teacher
20	5-4	F	112	Teacher

It was specified by each cooperating school that the testing be done during the morning hours of the dates assigned: November 6, 1972, for the Montessori Kindergarten and December 11, 1972, for the University Laboratory Kindergarten.

Administration of Test. The Screening Test of Academic Readiness was administered by the researcher on the dates assigned by the schools.

The test was designed to last sixty minutes, but it varied with each school. The Montessori children were relaxed, easy to motivate during testing and were quick to respond to instructions. The Laboratory Kindergarteners were just the opposite. They tired easily, took more time to respond to questions, and questioned the examiner more than necessary, as to the directions and possible score.

Treatment of Data. The tests were hand-scored by the examiner. The t-test was used to compare the subtests of the Screening Test of Academic Readiness. These correlations were run by the Computer Department of Kansas State University.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

To determine the readiness differences between kindergarten groups in a University Laboratory School and a Montessori School, the Screening Test of Academic Readiness was administered. Subtest raw scores were obtained in (1) Picture Vocabulary, (2) Letters, (3) Picture Completion, (4) Copying Designs, (5) Picture Description, (6) Draw-A-Man, (7) Relationships, and (8) Numbers. An overall performance raw score or total score was also obtained for each group which summated the responses on the subtests. The total scores were converted into deviation I.Q.s using a table provided in the test manual.

Table 7 presents a comparison of the means and t-ratio of readiness areas for Montessori and University Laboratory groups on the Screening Test of Academic Readiness.

An examination of Table 7 reveals significantly higher scores on the Draw-A-Man subtest for the Montessori School than for the University Laboratory School. The difference between the two groups was significant at the .05 level of confidence. Kindergarten children in the Montessori School scored significantly higher than the kindergarten children

TABLE 7

Differences in Mean Score and t-ratio of the
Montessori and University Laboratory
Kindergartens on the Screening
Test of Academic Readiness

Readiness Area	df	Mean Score		t-ratio
		N 20 Montessori	N 20 University Laboratory	
Picture Vocabulary	38	10.800	7.300	7.298**
Letters	38	7.150	7.000	0.198
Picture Completion	38	5.050	3.150	2.970**
Copying Designs	38	3.000	2.500	1.206
Picture Description	38	6.350	4.650	3.435**
Draw-A-Man	38	10.300	8.400	2.142*
Relationships	38	7.450	5.700	4.163**
Numbers	38	6.600	8.300	1.756
Total Score	38	56.700	47.050	3.080**
I.Q.'s (Derived)	38	117.150	105.000	3.501**

* $P < .05$, two-tailed test

** $P < .01$, two-tailed test

in the University Laboratory School, at the .01 level of confidence on the following subtests: Picture Vocabulary, Picture Completion, Picture Description, and Relationships. Significant differences for total score and deviation IQ scores were also in favor of the Montessori School. No statistically significant differences were found between these two groups for Numbers, Letters, and Copying.

Statistical analysis of the data indicated higher scores from the Montessori School in the majority of the subtests on Screening Test of Academic Readiness. Therefore, the results have shown that the null hypothesis must be rejected as stated: "The children prepared by the Montessori or the University Laboratory Kindergarten will show no significant differences in readiness," except in the instances of Letters, Copying, and Numbers. However, the null hypothesis is accepted for three of the subtests: Letters, Copying, and Numbers, which did not show statistically significant differences between the means.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

This study concerned itself with the identification and comparison of readiness in five-year olds in a University Laboratory Kindergarten and a Montessori Kindergarten.

Literature surveyed on the curriculums of the two kindergartens indicated general and specific objectives for laying foundations for formal school. It was evident that both schools inspire attitudes toward work for achieving accomplishment. The greatest differences in the two schools are that the Montessorian concerned itself with the development of the individual as a separate entity of the whole group, while the Laboratory Kindergarten develops readiness in the child as he plays a part of whole-class or group-based experiences. Traditionally, the Montessori sensory training, materials, and methods are prescribed, while the Laboratory Kindergarten program has been geared to an organized plan which may be flexible.

To specifically compare the readiness of a Montessori Kindergarten and a University Laboratory Kindergarten, an

experiment was performed. Twenty pupils, each five-years of age were tested on the Screening Test of Academic Readiness (STAR).

The primary data obtained indicated higher statistical significances on five out of eight subtests on the Screening Test of Academic Readiness for the Montessori kindergarteners. The null hypothesis had to be rejected in all of these instances, except three. The analyses of these three instances--Letters, Numbers, and Copying--indicated the same general performance for both kindergarten groups.

Specifically, the investigator did not regard intelligence or race of the subjects as influential factors which affected the results of this study. The consequences are only an outgrowth of the teaching methods used in each kindergarten.

CONCLUSION

Although both kindergarten groups are readied for formal schooling through their respective curriculums, each group of youngsters will perform differently in school, as indicated in this study. The Montessori children will do better in school than the University Laboratory group, while both sets of youngsters will perform about the same in the areas of Numbers, Letters, and Copying.

Race and intelligence are delimitations of this study; the investigator concerned himself only with the effects of the teaching methods of the two kindergartens.

RECOMMENDATIONS

The investigator would make the following recommendations for this study:

- (1) A follow-up investigation in the first grade using the initial subjects to determine if the findings acquired in the study hold true in the formal school setting.
- (2) It is further recommended that more subjects could have been sampled and more than one instrument could have been used so as to include more data in this study; then the findings could be considered more valid.

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APPENDIX A

P. O. Drawer AD
Grambling Louisiana 71245
October 16, 1972

Mrs. E. M. Masingale, Directress
Laboratory Nursery--Kindergarten
College of Home Economics
Branch Post Office

Dear Mrs. Masingale:

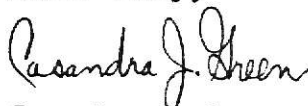
I am working toward a master's degree through the Kansas State University--Grambling College Consortium. To complete requirements for this degree, a master's report must be done.

In order to complete my master's report, your assistance is needed. I want to administer the Screening Test of Academic Readiness to twenty of your five-year olds and investigate the cumulative records of these youngsters. The best time for me to administer the test and view the records will be any Thursday or Friday between the time period of November 1 through December 11, 1972. If I may test, please choose any date convenient to you between the time period mentioned. Then, please let me know of your decision through mail.

Of course, my findings from the test and from the cumulative records will be held in strictest confidence and will only be used for the purpose of my report.

Your prompt consideration to this request will greatly appreciated.

Yours truly,



Casandra J. Green

APPENDIX B

P. O. Drawer AD
Grambling, Louisiana 71245
October 16, 1972

Mr. T. J. Wilcox, Principal
Southern University
Laboratory School
Branch Post Office

Dear Mr. Wilcox:

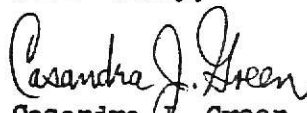
I am working toward a master's degree through the Kansas State University--Grambling College Consortium. To complete requirements for this degree, a master's report must be done.

In order to complete my master's report, your assistance is needed. I want to administer the Screening Test of Academic Readiness to twenty of your five-year olds and investigate the cumulative records of these youngsters. The best time for me to administer the test and view the records will be any Thursday or Friday between the time period of November 1 through December 11, 1972. If I may test, please choose any date convenient to you between the time period mentioned. Then, please let me know of your decision through mail.

Of course, my findings from the test and from the cumulative records will be held in strictest confidence and will only be used for the purpose of my report.

Your prompt consideration to this request will be greatly appreciated.

Yours truly,


Casandra J. Green

APPENDIX C

P. O. Drawer AD
Grambling, Louisiana 71245
October 16, 1972

Mrs. O. Perkins, Principal
Montessori School

Dear Mrs. Perkins:

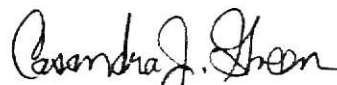
I am working toward a master's degree through the Kansas State University--Grambling College Consortium. To complete requirements for this degree, a master's report must be done.

In order to complete my master's report, your assistance is needed. I want to administer the Screening Test of Academic Readiness to one (1) to twenty (20) of your five-year olds and investigate the cumulative records of these youngsters. The best time for me to administer the test and view the records will be any Thursday or Friday between the time period of November 1 through December 11, 1972. If I may test, please choose any date convenient to you between the time period mentioned. Then, please let me know of your decision through mail.

Of course, my findings from the test and from the cumulative records will be held in strictest confidence and will only be used for the purpose of my report.

Your prompt consideration to this request will be greatly appreciated.

Yours truly,


Casandra J. Green

APPENDIX D

College of Home Economics

20 October 1972

Miss Casandra J. Green
P. O. Drawer AD
Grambling, Louisiana 71245

Dear Miss Green:

In reply to your letter dated October 16, 1972 to administering the Screening Test of Academic Readiness to twenty nursery/kindergarten five-year old children; this request is granted.

The dates mentioned are at your option with the exception being the Thanksgiving week. Please notify this office as to your choice of date and time expected. Also bring a copy of the test for my files.

Good luck on your master's report!

Sincerely yours,

Eula M. Masingale

Eula M. Masingale, Ph.D.
Director, Early Childhood Center

/d

cc: Mr. Thomas J. Wilcox, Principal
Laboratory School

APPENDIX E

CUMULATIVE RECORD

THE MONTESSORI SCHOOL

Student's Name	Date of Birth	Date entered school
----------------	---------------	---------------------

Comments:

Date: _____

By Whom? _____

THE MONTESSORI SCHOOL
INDIVIDUAL OBSERVATION RECORD

Report on _____ Age _____

Enrolled in _____ Teacher _____

Dates Observed _____

I. Intellectual Behavior

Initiates own activities:

(1) wholly (4) at times (7) seldom _____

Contributes ideas which are:

(1) very useful (4) useful (7) useless _____

Carries out plans:

(1) almost exactly (4) approximately _____

(7) with many changes _____

Expresses own thoughts:

(1) very clearly (4) clearly (7) vaguely _____

Uses correct grammar:

(1) consistently (4) usually (7) seldom _____

Shows originality in stories:

(1) great (4) average (7) little _____

Retells stories, rhymes, etc.:

(1) very well (4) average (7) poorly _____

Judges worth of own work:

(1) accurately (4) approximately _____

(7) inaccurately _____

Shows appreciation of the value of numbers:

(1) keen (4) average (4) little _____

Shows interest in printed words:

(1) keen (4) average (7) little _____

Alert to his environment:

(1) markedly (4) moderately (7) little _____

II. Social Behavior

Displays leadership:

(1) markedly (4) average (7) slight _____

Appreciation of rights of others:

(1) clearly (4) fairly clear (7) vaguely _____

Respects rights of others:

(1) Uniformly (4) when politic (7) when _____

necessary _____

Shows a give and take spirit:

(1) consistently (4) within limits (7) seldom _____

Offers negative criticism:

(1) seldom (4) occasionally (7) frequently _____

Offers positive criticism:

(1) frequently (4) occasionally (7) seldom _____

Page 2
Individual Observation Record

Social Behavior (continued)

Profits by the criticism of others:

(1) markedly (4) occasionally (7) seldom

Enters into joys and sorrows of others:

(1) markedly (4) somewhat (7) little

Exhibits courteous habits:

(1) please, thank you, etc.

(1) consistently (4) to some degree

(7) seldom

Responds to signals and directions:

(1) alertly (4) adequately (7) sluggishly

Takes responsibility for carrying on own
routine activities:

(1) completely (4) somewhat (7) little

Is accepted by the other children:

(1) enthusiastically (4) as a matter of
course (7) with reservations

Enters into play with others:

(1) wholeheartedly (4) adequately (7) little

IIII. Emotional Behavior

Displays anger:

(1) justifiably (4) somewhat excessively

(4b) somewhat insufficiently

(7a) insufficiently (7b) excessively

Displays fear or timidity:

(1) justifiably (4a) somewhat excessively

(4b) somewhat insufficiently (7a) excessively

(7b) insufficiently

Displays self-assertion:

(1) justifiably (4a) somewhat excessively

(4b) somewhat insufficiently (7a) excessively

(7b) insufficiently

Displays joy or happiness:

(1) justifiably (4a) somewhat excessively

(4b) somewhat insufficiently (7a) excessively

(7b) insufficiently

Displays discouragement:

(1) justifiably (4a) somewhat excessively

(4b) somewhat insufficiently (7) excessively

(7b) insufficiently

Displays excitability:

(1) justifiably (4a) somewhat excessively

(4b) somewhat insufficiently (7a) excessively

(7b) insufficiently

Page 3
Individual Observation Record

Emotional Behavior (continued)

Shifts moods:

- (1) justifiably (4a) somewhat excessively
(4b) somewhat insufficiently (7a) excessively
(7b) insufficiently

IV. Skills

Adjusts own outside wraps:

- (1) easily (4) fairly easily (7) awkwardly

Moves about the room:

- (1) gracefully (4) with average grace
(7) awkwardly

Responds to rhythm

- (1) feelingly (4) adequately (7) uncertainly

Matches musical tones:

- (1) skillfully (4) fairly easily
(7) awkwardly

Relaxes at rest time:

- (1) completely (4) partially (7) little

Carries a tune alone:

- (1) skillfully (4) fairly well (7) poorly

Handles hammer and saw:

- (1) skillfully (4) fairly well (7) poorly

Handles scissors:

- (1) skillfully (4) fairly well (7) poorly

Handles crayons:

- (1) skillfully (4) fairly well (7) poorly

Handles paints:

- (1) skillfully (4) fairly well (7) poorly

Handles modeling materials:

- (1) skillfully (4) fairly well (7) poorly

Handles pouring and carrying liquids,
trays, etc.:

- (1) skillfully (4) fairly well (7) poorly

V. Interests

Physical Activities:

- (1) markedly (4) average (7) slight

Manual Arts:

- (1) markedly (4) average (7) slight

Creative Arts:

- (1) markedly (4) average (7) slight

Music:

- (1) markedly (4) average (7) slight

Page 4
Individual Observation Record

Interests (continued)

Imaginative Dramatic Activities:

(1) markedly (4) average (7) slight

Science and Nature:

(1) markedly (4) average (7) slight

Books and Stories:

(1) markedly (4) average (7) slight

Exercises of Practical Life:

(1) markedly (4) average (7) slight

Sensorial Activities:

(1) markedly (4) average (7) slight

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

*The numbers indicate directional tendencies only. They are not an indication of specific gradations.

1. Conditions or Features which might warrant special consideration.
2. Special abilities or assets.

Name _____

Cumulative RecordPRACTICAL LIFE EXERCISES(Code: Intro. /, Review -, Ready for
Testing "O", Tested v)Carrying Exercises

Tray _____

Chair _____

Table _____

Pitcher _____

Pouring Exercises

Rice 1 _____

Rice 2 _____

Water 1 _____

Water 2 _____

Water 3 _____

Water 4 _____

Polishing Exercises

Shoes _____

Silver _____

Brass _____

Glass _____

Washing Exercises

Table _____

Hands _____

Clothes _____

Woodwork _____

Lessons _____

Toys _____

Dishes _____

Dusting Exercises

Feather Duster _____

Cloth _____

Tables _____

Chairs _____

Sweeping

Broom and dust pan _____

Hand brush and pan _____

Crumbing tableWaxing furniture

Floor _____

Mopping: Wet Mop _____

Dust Mop _____

PRACTICAL LIFE, ContinuedCumulative RecordFolding Napkins, handkerchiefsTowels, clothsClothesPacking SuitcasePicnic BasketCamping EquipmentCutting ExercisesCheeseBreadCarrotsPotatoesDressing FramesButtons 1Buttons 2Buttons 3BucklesSnapsSweaterHooks and EyesLacingTyingBoot LacingZipperFlower ArrangingDressing Self and Care(Coats, Clothes, Aprons)Hanging ExercisesKnittingSewing buttonsOtherSetting TableWalking Line ExercisesFree - BookBell - WaterCarpentry

PRACTICAL LIFE, ContinuedCumulative Record

Dramatic Play with
Doll, Teaset
Dress-up Clothes

SENSORIALCumulative Record

Successful

Code: Introduction + ; Reviewing - ; Ready for Test 0
Tested vCylinder Blocks AVocabularyBlock BVocabularyBlock CVocabularyBlock DVocabularyCombinations

Pink Tower _____ Variations _____ Vocabulary _____

Broad Stair _____ Variations _____ Vocabulary _____

Red Rods _____ Variations _____ Vocabulary _____

Combinations of above - Tower & Stair _____ Vocabulary _____

Knobless Cylinders 1 _____ Vocabulary _____ Variations _____

Box 2 _____ Vocabulary _____ Variations _____

Box 3 _____ Vocabulary _____ Variations _____

Box 4 _____ Vocabulary _____ Variations _____

Combinations 1 & 2 1 & 3 1 & 4 2 & 3 3 & 4 4 & all 2 & 4Color Boxes 1 _____ Vocabulary _____ Comparison
2 _____ & Combinations Color
3 _____ Mixing
4 _____
5 _____
6 _____
7 _____

Spools-Thread _____ Paint Charts _____

Tactile: Rough & Smooth Boards _____ Vocabulary _____

Papers _____ "

Fabrics _____ "

Sandpaper Tablets _____ "

SENSORIAL, page 2Cumulative Record

Baris: Tablets	1 & 3	Vocabulary	
	1 & 2	"	
	2 & 3	"	
	All 3	"	

Olfactory Sense (Smell) #1	Contrasts	Varied	Vocabulary
#2	Perfumes		
#3	Foods		
#4	Spices		
#5	Herbs		

Thermid Sense #1	Vocabulary
#2	

Gustatory Sense (taste) #1	Salty, Sweet, Sour, Bitter	Vocabulary
#2	sweet, sweeter, sweetest	
#3	salty, saltier, saltiest	
#4	mints	
#5	nuts	
#6	foods	

Sound Boxes _____

Bells _____

Stereognostic Senses

#1	Peas and Beans	Blindfolded
2	Grains	"
3	Macaroni	
4	Classifying Objects	Variations

Constructive Triangles

#1	Rectangular	Vocabulary
2	Triangular	"
3	Small Hexagonal	"
4	Large Hexagonal	"

Geometric Solids	Sphere	Cube	Cone
Bases			
Solids	Rect. Prism	Triang. Prism	Cylinder
Bases			
		Triang. Prts.	Irregular
	Solids	Square Pyramid	
Bases			
Solids	Ellipsoid	Ovoid	Irregular
Bases			
Truncated		Compare with lessons	

SENSORIAL, page 3

Cumulative Record

Match small with large solids _____

Binomial Cube #1 _____
#2 _____

Trinomial Cube _____

Geometric Cabinet	Drawer No.	Cards 1	2	3	Variations
Circles					
Rectangles					
Triangles					
Curvy Linear					
Parallelogr.					
Polygons					

Multi-Colored Towers _____

Volume _____

Silence _____

PERCEPTUAL MOTOR

PHYSICAL FITNESS

Code: + Introduction; 0 Needs work; V Does well; - Reviewing

Dominate: Foot _____ Hand _____

1. Balance Beams _____
 Variations: Bean Bag on Head _____
 Carrying Water _____
 Sliding Sideways _____
 Blind Folded _____
 Past Swinging Object _____
 Others _____
2. Horizontal Bars _____
3. Climbing Rope _____
4. Balance Boards _____

5. Tossing Bean Bags in Box _____
6. Jump Rope _____
7. Hop Scotch _____
8. Chinning Bars _____
9. Balls _____
 Variations: Throwing _____
 Catching _____
 In Basket _____
 Balance on Rect. Board _____
 Basket Ball _____
 Football _____
 Baseball _____
10. Sawhorses _____
11. Blue Ladder _____
 Variations: Step over rungs _____
 Ladder laid horizontal on ground _____
 Ladder laid on tires _____
 Ladder in slanted position _____
 Ladder across sawhorses _____

PERCEPTUAL MOTOR, page 2

PHYSICAL FITNESS

12. Relay Races

Variations: Running _____
 Skipping _____
 Sack races _____
 Hopping _____
 Jumping _____
 Egg in Spoon _____

13. Slanted Ramps _____

Variations: Walking _____
 Crawling _____

INDOOR GYM ACTIVITIES:

14. Walks

a. Tiptoes _____
 b. Toes in _____
 c. Toes out _____
 d. Dog walk _____
 e. Double jump _____
 f. Frog jumps _____
 g. Crab or Spider walk _____
 h. Running forwards _____
 i. Running backwards _____

15. Wooden Dowels _____

ORGANIZED GAMES

Red Rover _____
 Drop the handkerchief _____
 Ring around the rosie _____

VISUAL PERCEPTION

I Spy _____
 Policeman, Policeman _____
 Picture Memory _____

NAME _____

OUTDOORSGARDEN

Hoe _____
Rake _____
Shovel _____
Plow _____
Cultivator _____
Garden Hose _____
Fertilizer _____
Mulch _____
Weeding _____

BARNYARD

Chickens _____
Eggs _____
Ducks _____
Guinea Pigs _____
Rabbits _____
Bale of Hay _____

WORKSHOP

Hammer _____
Hand Drill _____
Saw _____
Oil Can _____
Pliers _____
Screwdriver _____
Wrench _____
Plane _____
Level _____
Ruler _____
Paint _____
Sandpaper _____

GENERAL

Sweeping _____
Raking _____
Mowing _____
Rock Garden _____
Wild Birds _____
Cemetery _____

ART (CODE: Introduction +; Frequency V; NO
 YES
 (Free with ease and Creativity 0)

CUMULATIVE RECORD

Crayons: Free Use _____
 Structured _____

Paste _____

Glue _____

Scotch Tape _____

Stapler _____

Perforating _____

Pastel Chalks _____

Wet _____

Sponge Painting _____

Water Colors _____

Crayons _____
 Geometric Designs _____

Art-Gunned Paper _____

Panel Painting _____

Colored Construction
 Paper: Geometric Designs _____

Fabrics Designs _____

Collage Work _____

Clay or Pla-doh _____

Color Mixing _____

White Contrast on Black _____

Black Contrast on White _____

Paper Mache _____

Hole Punching _____

Vegetable or String Painting _____

Blot Painting _____

<u>MUSIC</u>	(Code)	Intro. Ready for Testing Tested	Reviewing	<u>CUMULATIVE RECORD</u>
--------------	--------	---------------------------------------	-----------	--------------------------

-
- I. Sing Songs _____ Carries tune alone _____
- II. Record Player _____
- III. Rhythms - skill _____
- Marching _____
- Instruments _____
- Clapping _____
- IV. Dancing - skill _____
- V. Bells - taps gently - freely uses _____
- Matches Appoggio _____
- Matches major scale _____
- Matches chromatic scale _____
- Matches pentatonic scale _____
- Plays duets with pentatonic scale _____
- VI. Orff-Schulwerk Instruments
- VII. Piano - plays gently - freely uses
- Keyboard _____ Black keys _____ White Keys _____
- Up and down _____
- Names of keys on keyboard _____
- Plays songs:
- VIII. Theory - Uses Music charts #1 _____ #2 _____ Matching _____
- Vocabulary on:
- Reads Music:
- IX. Instruments of symphony orchestra - Matches _____ Identified _____
- X. Music Appreciation
- XI. Creates own music or makes up own song _____ Writes own music _____

READING
WRITING

Cumulative Record #1

Code: Successful +; Reviewing -; Ready for Test 0
Introduction Tested V

Enrichment of Vocabulary
Objects of Environment

Matching Lessons

1. Colors
Words
2. Picture Box #1
Words
3. Picture Box #2
Words
4. Picture Box #3
Words
5. Picture Box #4
Words
6. Objects
7. Jungle Animal Pictures
8. Puzzles #1
#2
9. Movable Letters
10. Perception Faces

Sorting Lessons

1. Objects General
2. Objects same color
3. Objects Diff. color
4. Fruits & Vegetables
5. Designs
Vocabulary

Indirect Preparation to Writing

1. Sandpaper Letters

Vowels: a

e

i

o

u

Consonants:

b

p

c

q

d

r

f

s

g

t

h

v

j

w

k

x

l

y

m

z

n

READING
WRITING, page 2

Cumulative Record

2. Name Tracing
 3. Letter Tracing

a	n
b	o
c	p
d	q
e	r
f	s
g	t
h	u
i	v
j	w
k	x
l	y
m	z

4. Holds Pencil Correctly
 5. Independent Letter Writing
 6. Proper Positioning of Letters
 7. Writing Words
 8. Introduction to Cursive

Metal Insets

Tracing Frames	Vocabulary	Insets
rectangle		
triangle		
circle		
ellipse		
square		
oval		
pentagon		
trapezium		
tri arch		
quatrefoil		

- Fill in large movement
 Fill in closer
 Fill in marked off section
 Fill in whole
 Superimpose 2 diff. shapes
 Superimpose 3 diff. shapes
 Superimpose 1 shape 2 ways (inset)
 Superimpose 1 shape 3 ways (inset)
 Draw own design

READING
WRITING, page 3

Cumulative Record

Movable Alphabet
Object drawers

Vowel Boxes

'a' box

'e' box

'i' box

'o' box

'u' box

'ow' box

Beginning Sounds

1. Objects

2. Pictures

Ending Sounds

Spelling 3-letter phonetic words

1. objects

2. cards

*Phonogram Booklets

Cards

Nouns (labelling)

Articles

Verbs

Adjectives

Reading Phonetic Sentences

READING
WRITING, page 4

Cumulative Record

Readers

Workbooks

Experiences with Flannel Board

*Spelling 4-letter phonetic words

1. Objects

2. Cards

MATHEMATICSCUMULATIVE RECORDA. Numbers up to 10 - Writing Numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, 9Number RodsSandpaper NumeralsRods and CardsSpindle BoxesButtonsNumber slips gameMisc. Number LessonsBead StairCards and CountersB. Decimal SystemPresentation of BeadsPresentation of CardsCombining beads and cardsFormation of complex numberswith beads and cardsCollective ExercisesAdditionSubtractionMultiplicationDivisionStamp GameDot GameProblemsC. Telling TimeD. 100 BoardE. Teens Board -- BeadsBoardBeads and BoardF. Tens Boards -- BeadsBeads and BoardG. Linear CountingH. Skip CountingI. Addition -- Snake GameStrip BoardCharts 3, 4-5

Problems

Workbook

J. Subtraction -- Snake Game

Subtraction Strip Board

Charts 1 & 2

Problems

Workbooks

K. Multiplication

Bead Bar Lay-Out

Multiplication Board

Charts

Problems

L. Division

Division Board

Charts

Hierarchies

Division Boards: Units Tens Hundreds

M. Bead Frames

Addition

Subtractions

Multiplication

Geography

- I. Compass _____ North _____ South _____ East _____ West _____
 II. Space Chart _____ Mobile _____ Moon Map _____ Puzzle _____
 III. Globes _____

- A. Rough and Smooth _____ Continents _____ Standard _____
 B. Night and Day _____ Seasons _____
 C. Aligning 3 types of globes by Continents _____
 D. Vocabulary _____

- IV. Hemispheres Matching Solids and Planes Vocabulary Puzzle
 Naming _____

V. Continents	Puzzles	Vocabulary	Countries	Capitols	Tracing & Coloring	Drawers
1. N. America						
2. S. America						
3. Europe						
4. Asia						
5. Africa						
6. Australia						

- VI. U. S. A. Puzzle/Control _____ Without _____ Tracing Outlining _____ Vocab. _____
 VII. Flags _____

- VIII. Land and Water Formations
 Lake _____ Bay _____ Archipelago _____ Isthmus _____
 Island _____ Peninsula _____ System of Lakes _____ Strait _____

六

Non-Living

Minerals

Plants

Objects

	Objects	Cards
A. Vertebrates	Feed & Clean	Match Sort
	Water Cages	

1. Fish

2. Reptiles

3. Amphibians

Birds

B. Invertebrates

1. Insects

Card Matching

Catching

Mounting

2. Shells

3. Other

C. Anatomy

Matching

Assembling

Vocabulary

1. Parts of Body

2. Parts of Test

3. Parts of Mouth

4. Skeleton

SCIENCE, page 2

5. Eye# _____

6. Heart _____

7. Kidney _____

8. Knee Joint _____

9. Teeth _____ Matching _____ Brushing _____

III. Minerals

A. Mineral Basket _____

B. Rock Basket _____

C. Rock Sorting _____

D. Picture Matching _____

E. Fossils _____

Vocabulary _____

IV. Plants

A. Care

Wet & Dry _____

Re-Potting _____

Picking _____

Arranging _____

B. Classification

PlantsVocabularyFlowersLeavesFruitsVegetablesSeeds

1. Matching _____

2. Sorting _____

C. Anatomy

1. Flower Corolla Pistil Stamens Calyx Match-real Dissect

*Lacking in environment

SCIENCE , page 3

2. Roots

- a. Tap Root Primary Root Secondary Root Root Caps Root Hairs
 b. Conical c. Fulliform d. Napiform Matching/real Roots
 3. Tree Trunk Branches Leaves Roots
 4. Leaf Blade Veins Pithicle Stipules

- D. Planting Seeds Bulbs Bedding Plants Cuttings
 E. Cards

	Leaf Cabinet Inset	Solid	Semi-Solid	Outline	Vocabulary	Tracing	Blindfold
1. Aciculate							
2. Cordate							
3. Elliptical							
4. Hastate							
5. Lanceolate							
6. Linear							
7. Obcordate							
8. Obovate							
9. Orbiculate							
10. Ovate							
11. Reniform							
12. Sagittate							
13. Spatulate							
14. Triangular							

V. Miscellaneous

- A. Machines Lever Inclined Plane Wedge Wheel & Axle Screw
 Pulley Gears
 B. Hardware Sorting
 C. Substance sorting: Metal Wood Plastic Glass Rubber

SCIENCE, 4

- D. Scales _____ Spring _____ Balance _____
 E. Tongs _____ Tweezers _____
 F. Magnifying Glass _____ With Numbers _____
 G. Tape Recorder _____
 H. Nuts & Bolts _____ I. Pipe Fittings _____ J. Jars & Lids _____
 K. Flashlight _____ L. Magnets Sorting _____ Construction _____
 M. Floating _____ N. Siphon Straw _____ Medicine Dropper _____
 O. "Question Box" (Bring something metal, etc.)
 P. Vacuum Cleaner _____ Q. Diffusion _____ (Food color in water)

APPENDIX F

SCREENING TEST OF ACADEMIC READINESS
CLASS RECORD LISTSchool: Laboratory School, Baton Rouge, Louisiana
Date: December 11, 1972

Grade or Class: Kindergarten

Student	Sex	CA	I	STAR			raw	V	VI	SCORES			Total	Star IQ
				II	III	IV				VII	VIII			
1	M	5-1	8	10	0	3	4	11	7	6	49	117		
2	F	5-8	9	7	6	3	5	8	7	13	58	113		
3	M	5-4	5	9	2	3	4	5	5	8	41	96		
4	F	5-5	9	7	6	3	4	11	6	8	54	112		
5	F	5-4	6	10	5	3	5	6	4	12	51	108		
6	M	5-4	8	7	3	3	7	9	5	4	46	102		
7	F	5-3	9	10	1	1	5	13	7	9	55	114		
8	F	5-5	9	7	1	3	6	8	6	11	51	108		
9	M	5-5	5	4	6	1	3	6	2	4	31	81		
10	M	5-6	9	10	6	3	5	12	8	10	63	120		
11	F	5-3	8	5	2	3	4	8	4	11	45	101		
12	F	5-6	6	7	6	3	8	5	7	11	56	110		
13	M	5-4	5	0	1	0	2	5	4	1	18	84		
14	F	5-8	9	10	6	3	5	12	6	12	63	120		
15	F	5-2	6	10	5	3	5	9	7	9	54	122		
16	F	5-4	6	3	0	3	6	11	4	3	36	89		
17	M	5-5	9	7	0	3	1	11	8	12	56	115		
18	M	5-5	5	2	0	1	1	2	5	1	17	78		
19	M	5-4	6	10	1	3	4	4	6	9	43	98		
20	F	5-4	9	5	6	3	4	9	6	12	54	112		

SCREENING TEST OF ACADEMIC READINESS
CLASS RECORD LIST

School: Montessori School, Shreveport, Louisiana
Date: November 6, 1972

Grade or Class: Kindergarten

Student	Sex	CA	STAR			RAM			SCORES				STAR
			I	II	III	IV	V	VI	VII	VIII	Total	IX	
1	F	5-6	11	7	6	4	8	13	8	8	67	126	
2	F	5-4	11	10	5	4	6	8	6	10	60	120	
3	M	5-0	8	7	6	3	8	9	7	5	53	121	
4	F	5-10	9	8	6	1	6	12	8	6	56	103	
5	M	5-0	12	7	2	4	3	8	6	6	48	116	
6	M	5-4	11	7	6	4	5	11	8	10	62	123	
7	M	5-8	9	5	5	4	8	9	8	4	52	104	
8	M	5-8	11	7	2	4	8	9	8	7	56	110	
9	F	5-5	13	10	6	4	8	13	8	7	67	129	
10	F	5-6	11	7	6	1	5	12	8	7	57	111	
11	M	5-0	9	5	5	4	8	6	8	5	50	118	
12	M	5-10	12	7	6	4	6	6	8	8	57	105	
13	M	5-5	11	7	6	1	8	14	7	7	61	121	
14	M	5-4	12	7	5	1	5	13	8	6	57	116	
15	F	5-1	11	7	3	3	8	12	8	7	59	127	
16	M	5-0	12	7	5	3	5	6	8	3	55	123	
17	F	5-1	11	7	5	3	6	13	8	7	53	121	
18	M	5-1	12	4	6	4	5	11	8	4	56	123	
19	F	5-10	9	7	5	4	6	9	7	10	59	109	
20	F	5-1	11	10	5	0	5	9	4	5	49	117	

A COMPARISON OF SCHOOL READINESS OF FIVE-YEAR
OLDS IN A MONTESSORI SCHOOL AND IN A
UNIVERSITY LABORATORY KINDERGARTEN

by

CASANDRA JULIET GREEN

B. S., Southern University, 1969

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1973

ABSTRACT

The purpose of this study was to determine if there were differences in readiness for two kindergarten groups through a review of pertinent literature and performance in an experimental investigation. The kindergartens involved in this study were University Laboratory and Montessori.

It was revealed through literature that the Montessori Kindergarten and University Laboratory Kindergarten prepared youngsters differently for formal school by having its' youngsters participate in curricular and use materials which were unique only to each kindergarten.

To more specifically reveal the readiness of the two kindergarten groups, an experiment was performed. Two groups of youngsters, twenty from the University Laboratory Kindergarten and twenty from the Montessori Kindergarten were tested on the Screening Test of Academic Readiness (STAR). Each child was five years of age and planned to enter formal school in the following September.

The t-test was applied to both school's subtest scores, total score data, and derived IQ scores on the Screening Test of Academic Readiness, so as to determine whether or not significantly statistical differences existed between the two

kindergarten groups at the .05 and .01 confidence levels.

According to the findings, at the .05 level of confidence, the Montessori School indicated significantly higher scores than the University Laboratory Kindergarten on the Draw-A-Man subtest only. While at the .01 level of confidence, the Montessori School had significantly higher scores than the University Laboratory Kindergarten on subtests: Picture Vocabulary, Picture Completion, Picture Description, and Relationships, along with the total score and derived IQ score. Both groups indicated no significant differences in the areas of Numbers, Letters, and Copying.

Overall, it was concluded that the Montessori School did significantly better on the Screening Test of Academic Readiness. Therefore, the Montessori group indicated better readiness for formal schooling than the University Laboratory group.