San Fernando Valley State College

EARLY CHILDHOOD
FROM BIRTH TO ONE YEAR

A Programmed Instruction Manual

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Science in Health Science.

by

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ABSTRACT

EARLY CHILDHOOD

FROM BIRTH TO ONE YEAR

By

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Master of Science in Health Science
March, 1972

The purpose of this thesis was to develop a unique but effective programmed manual to help teach parents, pre-school teachers, student nurses, and other para-professionals in the health field about the early stages of infant development.

While the presentation leans toward the behavioral school of child development, it cannot be characterized as favoring any particular school of psychology and it is eclectic in its scope and emphasis.
Program instruction techniques were utilized in the preparation of this "Manual" because programmed instruction materials are self-teaching and self-evaluative. An instructor or classroom is not needed. Furthermore, programmed instruction materials enable the student to learn at his own pace.

Developmental testing on eleven subjects was conducted to perfect the content and design of the programmed manual. A pre-test and a post-test were than conducted on a group sampled from the target population. Results of the pre-test and post-test show an average increment in scores between the pre-test and the post-test and an increase in knowledge. Statistical treatment showed that the scores of the group became significantly higher after three hours study of the programmed instruction manual. Subjects liked and approved of the programmed instruction manual especially when accompanied with visual aid (pictorial in this case).

On the basis of the above findings, it is recommended that the nursing personnel in collaboration with nursery school staff use the programmed instruction technique in developing further programs in child development.
CHAPTER I

INTRODUCTION

The early months of life have a very important and significant formative influence on all the years that follow. Any interruption of the developmental process effecting the emotional or physiological systems during that crucial period will have a detrimental effect on the continuous flow of the stream of growth. To supply optimal conditions of development to the child in order that he may have optimal emotional and mental adjustment, knowledge of the biologic structure of the infant is necessary for those concerned.

The neonate at birth is already in possession of all the nerve cells he will ever have. He has great capacity for learning, and he is also equipped with all the motor reflexes necessary to fulfill his basic needs. Aside from these basic needs, the infant is greatly in need of cuddling, love, freedom to move, and material to manipulate and explore, thus, enabling the development of his motor control to its maximum.

All growth, whether physical or mental, implies organization and coordination. For example, if the muscles of the eye do not develop fully or are weak, they will not coordinate with the grasp reflex of the hand because the baby cannot see clearly the object he is seeking to grasp. Looking is not merely a sensory impression; it requires motor
control. By the end of the first year of life, this motor control has reached a plateau of importance on mental and emotional development. Thus, emphasis was placed on this motor control in the thesis since it is a crucial aspect of development and extremely important for nurses, teachers and parents to be able to identify any weakness or deviation of the sensory-motor controls with which the baby is born.

Programmed Instruction, with or without the guidance of the teacher, has been utilized in many fields and has proved to be a very effective teaching technique. It is also rapidly gaining wide acceptance in both general and specialized education as an effective way of learning. Consequently, introducing its use in teaching about child development could be very beneficial. Therefore, the purpose of this thesis was to develop a unique but effective means of teaching the crucial early stages of infant development in layman language as an adjunct to other forms of instruction to be used in the educational preparation of parents, nurses, and teachers.

The Statement of the Problem

The purpose of this thesis was to develop a unique but effective programmed manual to help teach parents, pre-school teachers, student nurses, and other para-professionals in the health field about the early stages of infant development.
Limitations of the Study

The study was limited to a small segment of child development. Furthermore, this programmed instruction manual is not a textbook in child development, but a supplement and an adjunct to other forms of instruction.

The objective of this manual is limited to the discrimination between normal and abnormal reflexes, thus many important facts were intentionally omitted.

Definition of Terms Used

Frame: A single item or statement is exposed at a time. The exposed material constitutes a single frame.

Operant Behavior: Behavior which operates or acts upon the environment. A fundamental concept in Skinnerian learning theory.

Panel: A short passage of prose material, graphs, and similar material which are presented.

Program: A sequence of carefully constructed frames of information leading the student to mastery of subject with minimal error.

Prompt: A type of verbal or symbolic cue which facilitates the desired response from the subject.
CHAPTER II

LITERATURE REVIEW

I. PROGRAMMED INSTRUCTION

Certain methods, procedures, and techniques of instruction obviously have been utilized throughout the long evolution of education. These approaches generally have coincided with the existing philosophies of education and the predominant theories of learning in vogue during any given period. Many modern teaching methods and techniques are, in fact, adaptations of instructional procedures that were probably used in the past.

Much has been written concerning the complex phenomenon of learning. Numerous articles and books have been devoted to the analysis of factors which influence learning and the elaboration of processes by which learning seems most likely to be enhanced. Learning has been defined as a consistent change in behavior, which, in educational institutions, is brought about by the activities and experiences that are provided by the school. Thus, (1:1) it should be emphasized that teaching methods, procedures, and the techniques are not ends in themselves, but rather are means by which students can be assisted to solve their individual and social problems.
Programmed instruction techniques meet today's educational demand for individualized instruction. The outstanding contribution that programmed instruction has thus far made to educational practice dates back to the work of Talph Tyler in 1930 in which he stressed the need to define objectives in behavioral terms, especially as prerequisite for test construction. (2:391-407).

The movement had its prophet in Sydney Pressey (3:417-47) who published numerous papers on his work with teaching machines. In an age of testing, Pressey discovered something about teaching. He began by experimenting with a machine that automatically gave and scored a test, but he observed that in giving and scoring the test in this standardized manner his students were also learning. Pressey deserves credit for attempting a practical application of learning theory as then formulated. Pressey described the first machine associated with programmed instruction in 1926. A teaching machine is any device implemented for the purpose of presenting a self-instructional program. It may consist of a punch board, or it may be an electronic device capable of presenting both visual and printed material; or it may be a textbook in which control of the learning process is achieved through the physical arrangements of the material on the printed page. Fin expanded the definition of auto-instructional devices to include many types of programs (4:68).
In fact, programmed instruction and behavioral objectives are traced as far back as Socrates, who is credited with developing a program in geometry (5:3). The Socratic method (6:2) consisted of a five-step proposition with reference to an idea—question, to analyze, to reason, to conclude, and to generalize—all of which are taken into consideration by the good programmer. Nevertheless, it is very doubtful whether much progress would have been made if it had not been for certain developments in the science of psychology (7:105). Since the appearance of Skinner’s article "The Science of Learning and the Art of Teaching" in 1954, (8:99) programmed instruction has advanced at an accelerated pace, promising great improvements in education and self-instruction.

Programmed instruction may, at times, equal or supersede in effectiveness the technique of professional class instruction which is often limited by the size of group, the bias of the teacher, and the heterogeneous level of the student group.

Programmed instruction is an educational technique in which the material is organized and presented in a format permitting self-evaluation and self-testing and enables the student to learn at his own pace with a minimum of formal instruction. The idea behind this modern technique is that many subjects may be learned best when they are presented in successful completion of each step providing its own reward as incentive in the form of accomplishment. Programmed materials can be used effectively in a number
of different ways, and in such a fashion that each student is allowed to proceed at his own pace. This is best suited in situations such as remedial readings (9:47).

**Theories Behind Programmed Instruction**

Programs are designed to take into account the nature of the student and the subject matter to be worked on. Therefore, the thoughtful teacher should understand the different concepts and theories behind Programmed Instruction in particular and programming in general. It is also important to note that in the case of programmed learning the primary responsibility for the success of an educational technique is placed on the technique itself, rather than on the learner. The decisions the programmer must make in constructing a program are influenced by the adequacy of different paths in eliciting or stimulating desired responses, that is, in controlling the student's behaviour (10:313-358). The programmer must involve the planning and arrangement of events which facilitate the process of learning. This is done by motivation and reinforcement, Cronbach strongly related motivation to the instructional situation and the role of the teacher, or in this case the programmer:

"The problem in motivation is not to awaken an inert audience, but to direct the energy of an alert group into constructive channels and keep it there. (11:498) "
What may appear to be a logical organization of a subject matter may not necessarily be an effective organization from which to teach. For this reason it is said that the sequence developed within a program has psychological rather than logical unity or direction.

The early style or method of programming is the "linear" or straight line style. The logic for developing this style is Skinner's studies of the differentiation of behavior in laboratory animals. Linear programming requires the student to construct his own response. This is derived from Skinner's suggestion and in part from the characteristics of the first teaching machines (12:136). Literally, linearity means that each student proceeds in a straight line through a fixed instructional sequence. The linear program is adjusted to student performance in two ways. First, it is created for students at a particular academic level, and the program can be taken at any speed. Second, in linear programming, the student should learn from a program, that is, a terminal behavioral repertory is set up as the goal. Actions that approach the goal, the desired terminal behavior, are reinforced and rewarded as soon as they occur. Responses that do not lead toward the terminal repertory go without reinforcement. The desired behavior is thus achieved through successive reiteration while undesired behavior is ignored (13:377-398). Specifically, an item of information is given the student, and he is required to answer a question or complete a statement on his own. Hence, the programmer has to write his "frame" (14:14), as it is usually
called, before the question is asked, in a style and manner to induce correct response. This information is called a "prompt." The program, if it is a good one, starts where the student is and gradually leads him into unknown territory by short jumps so that, theoretically, he never makes a mistake.

Skinner based his method on three principles. First, active responding identifies where the program is leading the student. Second, minimal errors result from good design of the instruction and from repeated tryout and revision (15:286) of the instruction. Errors made by students in responding to frames and in exhibiting the final desired behavior should be held to a minimum. Third, the most important principle, or essential ingredient of programmed instruction, is the "knowledge of results" or the "reinforcer." Here the design should provide the student with a feedback on the adequacy of his response. Skinner felt that being "right" is adequate to serve as a reinforcer (16:100). On the other hand, Markle showed disagreement by saying, "That status of confirmation as the reinforcer in the sense intended by Skinner and his colleagues is open to question." (17:25).

Opponents of Skinner agree that some findings indicate that presentation of the correct answer may not be operating as a "reinforcer" in programmed instruction. Whether the confirmation of the correct answer may be called a "reinforcer" is not fully demonstrated and further experimentation and research are needed.
A second form of programming involves "branching" or "intrinsic" programming. This is composed of several paths or branches while the linear Skinnerian program is a single-path sequence in which all students read and respond to the same material. The idea behind the branching program is to let the student's performance on the early frames of a program determine what frames he receives. In other words, the paths a particular student takes are determined by his pattern of responses. Students who make errors are exposed to more material than those who respond correctly. If the student makes a mistake he is taken off the main track of the program onto a "branch" in order to build up information or background before he returns to the main program (19.11). Defenders of the branching approach make the point that their programs adjust to the needs of the student and are flexible.

Austwick (12:32) contends that branching has its difficulties and that, to some extent, it overcomes the detailed exposition of the linear program. The most popular form of "branching" was developed by Crowder and was used in the Auto Tutor and Tutor Texts (17:188).

The rationale of intrinsic programming postulates that the basic learning takes place during the student's exposure to the new material on each page. Branching technique requires the use of the multiple choice method (18:13),
wherein the student is presented with a classical multiple choice question which contains some prompting information as well. Multiple choice seems a good move especially when the design of the frame produces too many wild guesses along wrong dimensions.

The single versus multiple sequencing of material is not the only difference between linear and intrinsic programs. Crowder in his article, "On The Differences Between Linear and Intrinsic Programming" (18:148), states many other differences. Some of these disagreements seem more ideological than practical, and this is probably due to the differences of Crowder and Skinner. The former is aware of human differences and aptitude, while the latter does not have to worry about variability in scholastic aptitude, previously acquired knowledge, temperamental indispositions and so forth. Where such wide variability exists, Crowder would argue that one can rely only on the actual man-machine interaction to guide the course of instruction.

In practice, programmers are borrowing the best from both methods. Typically, a basically intrinsic program can refer students to a linear sequence where the need for closer step by step instruction is indicated. Also, a basically linear program may include branching forward or backward on the basis of student performance on criterion frames imbedded in the program.
In conclusion, programmed instruction is viewed from two perspectives. Some educators have regarded programs as a supplement to traditional teaching methods. Other authorities maintain that it is not merely a new instructional medium to be incorporated into an existing system of education but a discontinuity, a break with older philosophies of teaching, and that the inclusion of programmed instruction in a conventional curriculum is a contradiction. As this group sees it, the technique of programmed instruction implicitly contains a philosophy and technology of behavioral control.
IL. EARLY CHILDHOOD

In the past thirty years an increasing number of investigators have become interested in research with infants. This interest stemmed from two different concerns. Investigators like Freud and Burlington, have tried to explore the earliest environmental impact on the child’s development. Under this rubric are the numerous contributions on the effect of differences in mothering, of early mother-child separation and institutionalization on infant development. Other investigators became interested in the primary endowment with which infants are born.

The birth cry marks the baby’s first breath and serves as a boundary between his former waterborne state, and his status as an air-breathing organism. Neonates are individuals from the moment of birth. Many of their individual characteristics are established long before birth. Growth processes are as universal as they are individual. Thus, at the moment of birth, any two babies are as much alike as they will ever be, but from that time on they will grow increasingly unlike each other. Indeed, even though each growing child may share in common certain physical, emotional, or intellectual similarities, each will, nonetheless, develop that particular combination of characteristics which will enable him to be quite unlike any
other person in the world. There is a similar variety in temperaments, corresponding to differences in physical, biochemical, and physiological peculiarities. Darwin's (22:12) epoch making book, "Origin of Species," led to the revolutionary concept that human infancy evolved to subserve the needs of inheritance and individual growth. In this sense, infancy is a positive, adaptive trait, one of the major end-products of ages of evolution.

In a biological sense, the span of human infancy extends from the zero hour of birth to the middle twenties. Gessell (23:12) divides the human cycle of growth as a succession of four stages of six years each. Society has for many years overlooked the importance of the first span of life, the fundamental years which come first in the cycle of life and which, therefore, must have a certain priority in all social planning. The first year in particular has a profound formative influence on all the years that follow. Piaget (27:3-69) in his essay, "The Mental Development of the Child" provides a comprehensive overview of the psychological development that starts at birth and terminates in adulthood, and the impact of each stage on the development of the other.

The studies of investigators such as Bridges, Coldwell, White, and others (25:51) marked a revolution in the study and understanding of the psychological capacities of the newborn. This also has completely changed the thinking about the neonate and has given a new respect for his abilities. These findings are due to the recent development of test devices and shrewd use of
"index" or "indicator" responses. Physical reactions to sensory stimulation (24:3-21) such as changes in heart rate, brain waves, skin conductance - whether the baby is asleep, awake, hungry, or calm - are important factors in evaluating his behavior.

The newborn baby spends much of his time sleeping, about 20 hours a day. During the first few weeks, sleeping and waking are only a matter of degree, and the neonate rarely appears fully awake except when hungry, startled, or otherwise distressed. When he is crying and an adult picks him up, he ordinarily quiets immediately, if only temporarily, indicating his responsiveness to the sensation that goes with being held, cuddled, and rocked. Erikson (25:305) emphasized the need for touch, and the closeness of the infant and mother. Maslow’s experiments with infant monkeys showed the effect of touch and proximity on emotional growth.

A still unexplained, recent finding is that the sleeping newborn shows the brain wave pattern and the rapid eye movements (REM) that in adults signal the occurrence of dreaming (26:604): it is as though the physiological mechanism of dreaming is present from the beginning.

**Emotions of the Neonates**

The newborn baby’s emotional expression is often intense, but it lacks variety. Crowell and associates and others have recently demonstrated that newborn babies show a galvanic skin response, which is one autonomic index
of emotionality in older people. The other emotional sign is seen when he is peacefully asleep (46:153). This early "pleasure smile" (29:113-138) must be distinguished from the social smile which appears during the second month in response to the human face or voice. Otherwise, for the most part the neonate is blankly unemotional. Watson (28:309-339) postulated three basic emotions present at birth and linked them to reliable, unconditioned stimuli: 1) fear produced by loss of support, 2) rage produced by restraint, and 3) love elicited by fondling. Subsequent observations have failed to support Watson's hypothesis. Although loss of support will provoke a Moro response, careful observation by various authorities indicates that one cannot differentiate among kinds of unpleasant emotions in the newborn.

Furthermore, there is no indication that the neonate feels affection toward anybody or anything, although such affection develops quickly in the first few months. It is relevant to mention here the early beginnings of an important form of social behavior, imitation of the behavior of others. The earliest recorded imitation appears at ten to 20 days of age when the baby imitates the adult sticking out his tongue.

Sensory Capacities and Perception

The neonate's sense organs are well developed, but they bring him only a limited amount of information. It must be taken into consideration that there are decided individual differences in sensitivities of various kinds
and in strengths of reaction and stimulation (30:1694). There is some
evidence to suggest that some newborn babies, immediately after birth, turn
to look in the direction of sounds that catch their attention. Fantz (31:296)
has shown that the newborn baby distinguishes patterns since he spends more
time looking at black and white figures than at unfigured colored areas.

Reflexes

The wide array of reactions which can be rather dependably elicited in
the newborn baby are often called reflexes. According to Piaget's stages of
mental growth (33:76) this is known as the hereditary stage. It is here that
first instinctual nutritional drives and the first emotions appear. Thus, at
birth, mental life is limited to the exercise of reflex apparatus that are of
hereditarily determined sensory and motor coordination that correspond to
instinctual needs (32:118). Some of these reflexes have little behavioral
significance, but may be very useful for the physician for diagnostic
purposes, like the familiar knee-jerk or patellar reflex. The Plantar
response is also of interest because it undergoes a change with development.
If one touches or strokes the neonate's foot, his toes fan up and outward in
the Babinski response, but later, except in cases of brain damage and stupor,
the toes tend to curl downward. Other reflexes have practical adaptive
significance but are primarily vegetative, that is, they do not involve the
voluntary muscles. Example of these are the pupil's contraction to an
increase in light and the increase of salivation when something is placed in his mouth. Behavior of the infant tends to proceed from a general and total pattern of movement to partial or localized movements.

Then, there are reflexes involving complex behavior, such as the grasping and rooting responses. Instead of following a rigid pattern, these reflexes can be varied adaptively and cannot be elicited unless the baby is in the proper motivational state. Later on they will be superseded by new and more mature forms of action.

The most important inborn reflex to the survival of the infant is the sucking response, present at or shortly after birth. Newborn babies, according to Kron's observations (34:181-191) show striking and consistently maintained individual differences in rate or intensity of sucking. Kron has also shown a distinct change and stabilization of the sucking response in the first few days.

The Moro response, or infantile startle pattern, can be set off by any sudden, intense stimulation, such as a loud noise. The neonate reacts by stretching wide his arms and legs, often crying at the same time. The tension subsides visibly within a few seconds; then, there is a refractory phase, as with many other responses, during which the response cannot be elicited. The absence of the Moro reflex in the newborn baby may indicate brain damage (36:201). Apart from the scant "voluntary" use of the hands mentioned, the neonate shows a grasping reflex when his palm or fingers
are stimulated. This grasp reflex can also be elicited in the toes by stimulating the sole of the neonate's foot just at the base of the toes. This differs from the Babinski response mentioned previously which is stimulated by stroking the middle of the sole.

The swimming and stepping reflexes are present at birth. They disappear shortly thereafter, only to subsequently reappear in a more developed form. The swimming reflex is performed by the neonate when he is supported horizontally by his belly. The stepping reflex is demonstrated when the infant is held vertically with his feet lightly touching a firm surface. The latter reflex will reappear at about six months enabling the baby to lock his knees and stand on an adult's lap with the adult's arm for support.

The Infant

The term "infancy" comes from the Latin "infans," which means not speaking. No matter how much the infant vocalizes, or how much his vocalizations change during this period, his babblings stop short of true speech. By the time he is one year old, however, he can understand a great many words and phrases, listens attentively to those he does not understand, and may use a few words of his own. The limited emotional repertory with which he began life includes recognizable kinds of feeling states such as pain-distress, aversion, anger, fear, affection and elation.
Development during infancy is a dramatic thing to watch. Radical changes take place within this relatively brief period. During these early months outside the womb, the baby changes from a helpless even though noisy at occasions neonate unable to change position, to a high powered willful pedestrian investigating and exploiting everything within reach in the most active way possible, tasting, chewing, fondling, probing, tugging, pushing and tearing. As the child's activity increases, his sleeping time decreases. Some babies spend all their time sleeping except at mealtimes or when in distress. In the first year the baby adds almost 8 inches to his height and gains approximately 15 pounds, trebling his birth weight. Early in infancy his face loses its neonatal look and becomes the smooth chubby face of a baby.

From being a neonate whose existence is dominated by his own volatile inner processes with only a rudimentary awareness of the world around him, the baby moves on in infancy to quite elaborate knowledge of his surroundings, of people and objects and their attributes, of space and spatial relation, of causal sequence, of his own body and its workings and of countless possibilities of action. But the world becomes a place in which to learn and live and act by virtue of the emotional attachments and meanings that are formed in this crucial period for the development of basic attitudes of optimism or pessimism, of trust or mistrust. Erikson (38:25-28) emphasized the importance of this stage (trust vs. mistrust) in the infant's
life for the development of a healthy personality. The first stage of Erikson's scheme corresponds to the oral stage in classical psychoanalytic theory and usually extends through the first year of life. In Erikson's view, the new dimension of social interaction that emerges during this period involves basic trust at one extreme, and mistrust at the other. The degree to which the child comes to trust the world, other people and himself depends to a considerable extent upon the quality of the care he receives, and the mother-infant relation. The infant whose needs are met when they arise, whose discomforts are quickly removed, who is cuddled, fondled, played with and talked to, develops a sense of the world as a safe place and of people as helpful and dependable. When, however, the care is inconsistent, inadequate and rejecting, it fosters a basic mistrust: an attitude of fear and suspicion, on the part of the infant, toward the world in general and people in particular, that will carry through to later stages of development.

Socially, the infant progresses from blank, unblinking staring at faces to smiling at people, to demanding company, to laughing, to active participation in social games. After midyear, he will know that some people are strangers and may hide his face or shriek with dismay when they come near. Somewhere between five and eight months of age, and characteristically at six months, about half of all babies show a decided fear of strangers. This stranger's anxiety is important in practical terms, since it affects leaving the baby with new caretakers while the mother goes outside the house. This
is also interesting in terms of developmental principles. It indicates that the baby has acquired during this first six months period of his life a scheme of the familiar (39:8-12).

In summary, it can be said that the baby now begins to be active with his surroundings, rather than just upon himself. He strives to prolong those experiences which he has stumbled upon, by applying his pattern of adapted behavior. He recognizes an object by recreating those actions he has performed with such objects.

The baby's response to hidden objects also changes at this time. Say, for example, that the mother plays a game with her baby in which she shows him a toy and then hides it behind her hand. Prior to eight months of age, the baby would have shown no interest because the hidden object no longer existed for him. Now, however, he will push her hand aside and grasp the toy. Also, the baby now enjoys a passive form of peek-a-boo games. Every human being needs sensory stimulation from the outside world to maintain his sense of identity. Another principle behind peek-a-boo and hidden objects concerns affective arousal and comes from the Dumas theory of emotions, which says that all mild emotional arousal is pleasant.

Mental Development and Perception

The period that extends from birth to the acquisition of language is marked by an extraordinary development of the mind. Its importance is
sometimes underestimated because it is not accompanied by big words that permit a step by step pursuit of the progress of intelligence and the emotions, as is the case later on. This early mental development, nevertheless, determines the entire course of psychological evolution, which consequently leads to the theme of self-world relations. The same physical reality can be perceived very differently by different people. Perception is only partly a product of the sensory information. Also, what is perceived is not always distinguished from what an individual feels, thinks, believes, or fears. In short, the world is organized as a sphere of meanings and relationships and not as a collection of things.

The child's understanding of the world does not go beyond those properties of objects and events which arise directly from his actions related to them. He has a practical knowledge of the way things behave when he handles them, but no conception of why they behave as they do. His thought is locked in his own sensory-motor record, which is unique to him. His knowledge is private and touched by the experience of others. The world of public knowledge embodied in the concepts conveyed through language can find no place in his model of the world.

Causality is linked with the child's own activity and his egocentrism (41:969). This implies that the baby's experience is personal, because it is only his feeling of which he is aware. He has not yet defined himself as an entity, just as he first has no knowledge of the world that exists apart from his own feelings (44:352).
Piaget in his essay "Play, Dreams and Imitation" (47:285) defines the term egocentrism as follows:

"Egocentrism is on the one hand primacy of self-satisfaction over objective recognition... and, on the other, distortion of reality to satisfy the activity and point of view of the individual. In both cases it is unconscious, being essentially the result of failure to distinguish between the subjective and the objective."

Underlying all these expressions of egocentrism, it can be seen that the common factor is the subjective and affective nature of the child's view of the world. He credits the inanimate with feelings like his own. He believes his thoughts have the power to change events.

In the realm of self perception, the baby discovers his own hands and feet and becomes able to see them. He also learns to localize certain sensations, so that he can scratch at an itchy place or rub his eyes when sleepy. Some studies indicate that there is some indirect evidence that the baby's active manipulation and his movements through space play a vital role in organizing his world. Held and Hein (45:872) have shown that kittens whose visual experience is all gained from being passively moved through space, show defective spatial vision, as in the visual-cliff situation. But once perception has stabilized, movement seems to be less important. Yet, the importance of active movement may help us understand some of the cognitive deficits that go with "cultural deprivation." In institutions where babies are kept immobilized in cribs, even walking may be long delayed.
In summary, growth involves not just physical changes but perceptual and psychological changes as well. The experiences the baby gets during these developmental stages may influence to a great extent the kind of a person he becomes to be as an adult.
CHAPTER III

METHODS

Development of Manual

The programmed manual went through a series of changes before it acquired its final format. These changes were made as the result of consultation with health science educators, child development personnel and psychologists and the application of the "individual tryout techniques".

The individual tryout incorporates the principle of testing the subject matter on one person at a time, and revising it on the basis of the student's reactions until all ambiguities are eliminated. It is one way to optimize the communication between the learner and the material to be learned (48:6).

Individual Testing

The manual was given to a sample of eleven subjects from the population the study was designed to serve, utilizing individual try-out technique. The subjects included three graduate students, two housewives with a high school education, two college freshman students, two nurse's aids and two teacher's aids. The subjects were asked to write their comments or any other remarks which might help in improving the program. Also, they were instructed to react freely regarding subject matter, language ambiguities, and the order of panels or figures. Mod-
ifications and changes were made until the subjects agreed that the manual needed no further alterations or editing.

Subjects were asked to write their responses on a separate paper along with any comments or modifications they felt necessary for the improvement of the program. As the study progressed it was determined that frames gave better results when their order was reversed. The investigator noted and recorded all the comments made by the subjects. Modifications of the manual included language clarification, delineating items to bring in subject specificity, change of sequence to prevent set response, change of pictures, and increase in instructions.

The process of the individual tryout technique served as an effective means for obtaining feedback received, the instructional material is revised. The technique was similar to that utilized by Markle and is recommended as an important step in the process of developing programmed instruction material. Markle had defined the try-out technique as follows:

"A program is a sequence of carefully constructed items leading the student to mastery of a subject with minimal error. The distinguishing characteristic of programmed materials is the testing procedure to which they are subjected. Empirical evidence of the effectiveness is obtainable from the performance records of students." (49:121)

Group Testing

The Instrument An instrument was developed to determine the extent to which the information in the manual could be assimilated. This instrument was
comprised of twenty questions with several questions having sub-sections. Each correct response received one point making possible a total of thirty three points if all questions with their relative sub-sections were answered correctly.

The instrument was of the multiple choice variety and was based exclusively on the material in the manual. Recognition, recall and discrimination played a role in answering the questions. In constructing the instrument, the forced choice method was utilized. It was also mandatory that a subject answer all questions. The instrument is included as Appendix (2) of the thesis.

Subjects Due to certain limitations involving volunteer recruitment, only twenty three subjects were included in the study. They included a satisfactory cross-section of the target population. The group included nurses, teachers, licensed baby sitters, and young mothers. The group was comprised of 23 females between the ages of 24-40 years. Four of the subjects were college graduates, one of whom was an elementary school teacher, married with one child. This subject has been teaching for several years and had all the necessary credentials. She is presently enrolled in a master's program in education. Two subjects were registered nurses. One is currently enrolled in a master's program in hospital administration, was married but had no children at the time of the
study. Four of the subjects did not complete their high school education, but did have some kind of in-service training on the job as nurse's aids in a Head Start program. One of the subjects was Mexican-American with apparent language difficulties. The rest of the subjects were high school graduates. (13) Eleven of these subjects were either nurse's aids or teacher's aids in the Head Start program; the remaining 2 were licensed baby sitters. Both of the subjects were married and had one child each.
CHAPTER IV

RESULTS AND DISCUSSION

Comparison of the Scores

A comparison of the mean of the scores of the pre-test and post-test demonstrated a gain in scores. The mean of the group on the pre-test was 14 and the mean for the same group on the post-test was 27. The standard deviation in the pre-test was 3 and in the post-test 4.

The range of scores for the pre-test was 11 and for the post-test was 18. Table 1 shows the raw scores from which these statistics were derived. On the basis of a t test (1.7 with 44 degrees of freedom) the post test results indicate a significant difference at the .05 level. The post-test results were significantly better than the pre-test. It may be reasoned that the immediate gain in knowledge was a direct result of reading the programmed manual.

Table 2 shows the frequency distribution of scores on both the pre-test and the post-test. The 0-7 class limit includes the frequency of subjects who scored above 25% but below 50%; 17-24 class limit includes the frequency of subjects who scored above 50% but below 75% and 25-33 class limit includes the frequency of subjects that scored above 75%.
# TABLE 1

**RAW SCORES**

<table>
<thead>
<tr>
<th>Subject Variable</th>
<th>Pre-Test 1</th>
<th>Post-Test 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>24</td>
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<tr>
<td>4</td>
<td>10</td>
<td>27</td>
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<tr>
<td>5</td>
<td>18</td>
<td>30</td>
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<tr>
<td>6</td>
<td>21</td>
<td>29</td>
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<tr>
<td>7</td>
<td>14</td>
<td>28</td>
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<tr>
<td>8</td>
<td>10</td>
<td>15</td>
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<tr>
<td>9</td>
<td>15</td>
<td>22</td>
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<tr>
<td>10</td>
<td>11</td>
<td>22</td>
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<td>11</td>
<td>20</td>
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<td>12</td>
<td>19</td>
<td>25</td>
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<td>13</td>
<td>12</td>
<td>27</td>
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<td>14</td>
<td>15</td>
<td>29</td>
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<tr>
<td>15</td>
<td>18</td>
<td>27</td>
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<tr>
<td>16</td>
<td>12</td>
<td>29</td>
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<tr>
<td>17</td>
<td>15</td>
<td>26</td>
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<td>18</td>
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<td>32</td>
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<td>19</td>
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<td>20</td>
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<td>21</td>
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<td>27</td>
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<td>22</td>
<td>12</td>
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</tr>
<tr>
<td>23</td>
<td>11</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>MEAN</th>
<th>STD. DEV</th>
<th>MAX</th>
<th>MIN</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test 1</td>
<td>14</td>
<td>3</td>
<td>21</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Post-Test 2</td>
<td>27</td>
<td>3</td>
<td>33</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>
### TABLE 2

**FREQUENCY DISTRIBUTION**

**FREQUENCIES**

<table>
<thead>
<tr>
<th>Class Limits</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 - 16</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>17 - 24</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>25 - 33</td>
<td>0</td>
<td>18</td>
</tr>
</tbody>
</table>
While none of the subjects scored below the 25% on either the pre-test or the post-test, 18 of the subjects (78%) scored below the 50%; 5 subjects (25%) scored above 50%, but below 75% on the pre-test.

The post-test scores showed that only 1 subject (4%) scored below 50%; 4 subjects (18%) scored below 75%; and 18 subjects (78%) scored above 75%.

These results showed a definite shift towards higher scores. All subjects moved up to higher scores except the one subject who stayed in the same class limit in both the pre-test and the post-test. This subject was the only Mexican-American in the group. In addition to language difficulties, she had less than a high school educational background. These two factors might have affected her ability to comprehend the material as well as perform adequately on the pre-test and the post-test. The subject might have performed better if she was allowed to read the programmed manual at her own pace and given greater amount of time.

The average gain in scores between the pre-test and the post-test for this group was found to be 12 (36%). Compared to other studies, this manual seemed to be as effective as other programmed instruction manuals described in the literature.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to develop an effective programmed instruction manual in the early stages of childhood development, and to determine whether such a manual was useful, valid, and effective in increasing knowledge.

The individual tryout technique was used during the developmental testing of the programmed instruction manual. Modifications in accordance to the reaction of subjects were made throughout the developmental stages until all ambiguities were eliminated, and a level of clarity and comprehension was achieved.

An experiment that involved a pre-test, and a study of the programmed instruction manual, and a post-test was conducted. 23 individuals were involved in the experiment. Results demonstrated that the scores of the group became significantly higher after three hours study of the programmed instruction manual.

Conclusions

The results showed an average increment in scores between the pre-test and the post-test of 36%. When compared to other studies the manual seemed to be as effective as other programmed instruction manuals.
The post-test scores, ranged from 45% to 100%. This fluctuation in scores was found in other studies as well (51,52,53). No account for this variability in scores was documented in any of these studies. The investigator, on the basis of subjective observations of the test group, speculates that this variability is dependent on the subject's aptitude, motivation and personal initiative. Further it is possible that if the participants were not restricted in time, an even greater gain in knowledge might have taken place.

Recommendations

On the basis of this study, this investigator recommends the following:

1. The use of programmed instruction materials be expanded to include all aspects of child development.

2. The use of the programmed instruction manual in child development by training institutions preparing para-professionals in the field of child care as well as health personnel and others interested in the welfare of children.

3. Due to the length of the manual and the extent of the material to be covered, the investigator feels that subjects might achieve better scores and retain more knowledge if the group testing session was divided into 3 or more shorter sessions. Internalization of subject matter might be reinforced by rest periods between study sessions. This technique is more compatible with
the principle by which this programmed instruction manual was developed. That is, the learner is supposed to use the manual without time pressure or monitors and at his own pace.
BIBLIOGRAPHY


EARLY CHILDHOOD
FROM BIRTH TO ONE YEAR

A Programmed Instruction Manual

By Nancy Nadira Hammond

June 1972
APPENDIX I MANUAL
INTRODUCTION

This is a programmed instruction course in child development.

Training Objective: After taking this course the student will be able to:

1. Describe the physical developmental stages of achievement in children from birth to one year of age.
2. Recognize and differentiate between normal and abnormal social and emotional growth during infancy.
3. Recognize the need for good mother-child relationship.

FOR WHOM WAS THE PROGRAM DESIGNED?

Primary Target Population:
1. Nursery School teachers.
2. Student-Nurses and Health Assistants.

Secondary Target Populations:
1. All mothers who have an average or above average educational background.
SUGGESTIONS TO USERS OF THIS PROGRAMMED MATERIAL

Approximate Learning Time:

1. Testing has shown that this lesson requires from three to three and one-half hours.
2. The lesson could be used to best advantage during time most convenient to student.
3. Student should be allowed to proceed through this lesson at his own pace.
HOW THE PROGRAM WAS TESTED

The method of testing the efficacy of the program included two methods. The first was the method of the individual try out technique; where at the beginning of the test the individual was given a criterion question to test his knowledge before he was presented with the "Manual". Also, the student was asked to write his comments or any other remarks which may help in improving the program.

Modifications and changes were made through out the individual try out technique until the subjects' remarks did not indicate the need for any more modifications.

After the final changes, the manual was given to a group of 23 persons. A pre-test and a post-test were administered before and after the manual was given. Results of the group testing was very favorable and the response of the group favored more program instruction material in the field of child development.
HOW TO USE THIS BOOK?

This is a self-instructional lesson, its purpose is to TEACH you, NOT to TEST you. It is an effective way for you to learn the main outlines of a child's physical, mental and social development. The questions are planned to encourage you to supply the right answer; because making Correct Responses helps you to learn and remember.

REMEMBER

1. Read EACH Statement Carefully.
2. Proceed through a Page or Paragraph One Step at a Time.
3. Do exactly WHAT you are told to do WHEN you are told to do it.
   Follow Instructions.
4. Cover the answer with the Mask. Do not try to PEEK at the next answer.
5. After Responding you COMPARE your Answer with the correct response.
6. At the end of a Page, go on to the next item at the following page.
   Do Not Stop until you come to the end of a complete block of material.
7. Do not SKIP anything unless you are specifically told to do so.
8. Do not use the QUESTION-ANSWER REVIEW until the lesson is completed and you are told to move.
UNIT I

THE PHYSICAL DEVELOPMENT AT BIRTH
Except for the fact that the new born baby has difficulty getting around during the first months of his life, he is actually rather well equipped. He has his own way of letting others know when he is dissatisfied or hungry; he can grip and cling; he can suck and swallow. All these things have been practiced for months; none of these need to be learned at once when he arrives into this world.

Figure I
1. Write below briefly the actions of the infant that illustrate each of the reflexes known to you:

When finished proceed to next page.
This is a picture of a new born baby illustrating the Reflexes and Motor Ability present at birth. Tests of Motor Ability are used as intelligence tests in the young infant, absence of these reflexes and the motor ability is indicative of Mental Retardation or other neurological problems. Figure 2 provides an overview of all the reflexes and motor development visible to the eye and which are presented in detail from pages 13 to 20. Early detection of Inactive Reflexes will avoid complications.

Underline the reflexes identified in Figure 2 with which you are familiar.

- Sucking Reflex
- Rooting Reflex
- Moro/Startle Reflex
- Tonic Neck Reflex
- Grasp Reflex
- Plantario Foot Reflex

Figure 2
2. Label the reflexes of the New Born Baby in the Figure below. Whenever necessary refer to Panel 2 , figure 2, page 9, while labeling this diagram.

Figure 3

When finished proceed to next page.
Refer to Panel 2 when necessary while answering the following questions:

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

3. Write down the main reflexes with which the infant is born.
   1. __________ 
   2. __________ 
   3. __________ 
   4. __________ 
   5. __________ 
   6. __________ 
   7. __________

4. If the infant was born without the motor ability, this could be an indication of
   __________ 
   __________

5. Early detection of inactive reflexes will avoid complications
   True 
   False

   True

   If your answers are correct turn to next page.

   If you missed go back to page 9.
EXERCISES FOR LEARNING THE
DIFFERENT REFLEXES
### REFLEXES OF THE INFANT AT BIRTH

<table>
<thead>
<tr>
<th>Name</th>
<th>Reflex Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moro or Startle Reflex</td>
<td>The new born has one great unlearned reaction to strong stimuli; this is the Startle or Moro Reflex, Fig. 4, and it is aroused at birth or soon after by any sudden loud noise or loss of support. The reaction is generalized, aimless muscular activity. The Moro Reflex demonstrates an awareness of equilibrium in the new born and is observed during the first month or two of life.</td>
</tr>
</tbody>
</table>

![Figure 4](image)

When finished proceed to next page.
Reflexes of the Infant at Birth

<table>
<thead>
<tr>
<th>Name</th>
<th>Reflex Description</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasp Reflex</td>
<td>The Grasp Reflex is present in both hands and feet at birth, Fig. 5, and this enables the infant to grasp any object put into hands.</td>
<td>Figure 5</td>
</tr>
</tbody>
</table>

When finished proceed to next page.
Refer to pages 13 & 14 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. is aroused in the new born infant by sudden loud noise or loss of support.</td>
<td>Moro Reflex</td>
</tr>
<tr>
<td>7. The Moro Reflex demonstrates an awareness of in the infant.</td>
<td>Equilibrium</td>
</tr>
<tr>
<td>8. The Moro Reflex is observed during the first month or of life.</td>
<td>Month, two</td>
</tr>
<tr>
<td>9. Where is the Grasp Reflex present in the new born baby?</td>
<td>Both hands &amp; feet</td>
</tr>
<tr>
<td>10. What reflex is aroused by strong stimuli?</td>
<td>Moro Reflex</td>
</tr>
<tr>
<td>11. The Moro Reflex is also called the</td>
<td>Startle Reflex</td>
</tr>
</tbody>
</table>

If your answers are correct turn to next page.
If you missed go back to pages 13 & 14.
### Reflexes of the Infant at Birth

<table>
<thead>
<tr>
<th>Name</th>
<th>Reflex Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooting Reflex</td>
<td>The Rooting Reflex causes the infant to turn his head towards anything that touches his cheeks. This is one way by which the infant reaches for food, Fig. 6. The Rooting Reflex helps him to locate the nipple with his mouth when the breast touches his cheek.</td>
</tr>
<tr>
<td>Sucking Reflex</td>
<td>The Sucking Reflex provokes sucking movements when anything touches the lips, Fig. 7. It is present at birth and usually accompanied by Swallowing and the Gagging Reflexes.</td>
</tr>
</tbody>
</table>

Figure 6

Figure 7

When finished proceed to next page.
Refer to page 16 while answering the following questions if necessary.

Please cover the answer column with the mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. What reflex causes the infant to turn his head toward anything that touches his cheek?</td>
<td>Rooting Reflex</td>
</tr>
<tr>
<td>13. How does the Rooting Reflex assist the infant?</td>
<td></td>
</tr>
<tr>
<td>1. ____________  2. ____________</td>
<td>Locating the nipple. Reaching for food.</td>
</tr>
<tr>
<td>14. The sucking movements are provoked by the _______ Reflex.</td>
<td></td>
</tr>
<tr>
<td>15. The Sucking Reflex is usually accompanied by _______ and _______ Reflexes.</td>
<td>Swallowing, Gagging</td>
</tr>
</tbody>
</table>

If your answers are correct turn to next page. If you missed go back to page 16.
## Reflexes of the Infant at Birth

<table>
<thead>
<tr>
<th>Name</th>
<th>Reflex Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonic Neck</td>
<td>The Tonic Neck Reflex is a postural reflex in which the infant when lying on his back can turn his head to one side and extend the arms and legs on the same side to which the head is turned at right angles from his body. Fig. 8. Also the Tonic Neck Reflex enables the infant at birth, or little after, to lift his head slightly from the floor while on his stomach. Fig. 9.</td>
</tr>
</tbody>
</table>

**Illustration**

![Figure 8](image-url)  
**Figure 8**

![Figure 9](image-url)  
**Figure 9**

When finished proceed to next page.
Reflexes of the Infant at Birth

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantario</td>
<td>The Plantario Reflex causes the movement of the foot. This reflex is also demonstrated when the infant is held under the arms, then the feet dangle in a movement similar to dancing movements, Fig. 10.</td>
<td>Figure 10</td>
</tr>
</tbody>
</table>

When finished proceed to next page.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

16. What kind of reflex is the Tonic Neck Reflex?  

| Postural reflex |

17. State briefly the action of Tonic Neck Reflex.  

| a. Extends legs and arms to the side to which the head is turned. |
| b. Enables infant to lift his neck when lying on his stomach. |

18. What Reflex causes the foot movement?  

| Plantario Reflex |

19. The Plantario movement is similar to __________ movements.  

| Dance |

20. What is the best demonstration for the dancing movements?  

| When infant is held dangling. |

If your answers are similar turn to next page.  
If you missed go back to pages 18 & 19.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

REFLEXES OF THE INFANT AT BIRTH

21. Label the following pictures with the names of the appropriate reflexes:

Figure 11
1. ________________ __

1. Grasp reflex

Figure 12
2. ________________ __

2. Moro reflex

If your answers are correct turn to next page.
If you missed go back to pages 18 & 19.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

3. Tonic neck reflex

4. Sucking reflex

If your answers are correct turn to next page.
If you missed go back to pages 18 & 19.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

5. Rooting reflex

6. Dangling reflex

If your answers are correct turn to next page. If you missed go back to pages 18 & 19.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

REFLEXES OF THE INFANT AT BIRTH

22. Match the following reflex names with the relative description.

1. Moro startle reflex
2. Rooting reflex
3. Tonic neck reflex
4. Sucking reflex
5. Plantario reflex
6. Grasp reflex

   A. Present in both hands and feet.
   B. Ability to turn head to one side.
   C. Enables infant to locate the nipple.
   D. Foot movement.
   E. Accompanied by swallowing and gagging reflexes.
   F. Aroused by sudden noise and loss of support.

   1. F
   2. C
   3. B
   4. E
   5. D
   6. A

If your answers are correct turn to next page. If you missed go back to pages 18 & 19.
23. Name and describe the reflexes shown in the following pictures.

1. Rooting reflex.
   Enables the infant to locate the nipple.

2. Grasp reflex is strong.
   Present in both hands and feet.

If your answers are correct turn to next page.
If you missed go back to pages 18 & 19.
Refer to pages 18 & 19 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

3. **Tonic neck reflex.**
   
   Ability to turn head to one side.

4. **Startle reflex.**
   
   Aroused by sudden noise and loss of support.

If your answers are correct turn to next page.
If you missed go back to pages 18 & 19.
UNIT II

THE EMOTIONAL NEEDS AND RESPONSES AT BIRTH
THE EMOTIONAL RESPONSES AT BIRTH

The signs of emotions in the newborn infant are extremely difficult to interpret. Perhaps all that can be said is that two emotional states are evident; first, the peaceful state (figure 21), second, the discomfort state (figure 22). Some authorities consider the STARTLE REFLEX as a third emotional state.

When finished proceed to next page.
THE INFANT'S EMOTIONAL NEEDS AT BIRTH

The infant is in need for love, cuddling, affection and physical as well as emotional support.

When finished proceed to next page.
The kind of Parental care given during infancy and early childhood is of great importance to the Physical and Mental Health of the individual. During Infancy and Early Childhood, specially the first Six Months, the infant should have an intimate, warm and continuous relationship with his mother or his permanent mother-substitute in order to develop the Basic Trust and Self-Worthiness. Rejection or separation of mother or mother-substitute might lead to pessimism and mistrust.
Refer to pages 28 - 30 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

<table>
<thead>
<tr>
<th>24. What are the two emotional states present at birth?</th>
<th>a. Lives peaceful b. Discomfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. _________ b. _________</td>
<td></td>
</tr>
</tbody>
</table>

25. Some authorities consider the Reflex as a third state present at birth.  
Startle

26. Name the emotional needs of the infant.  

| a. _________ b. _________ c. _________ d. _________ |
|------------------------------------------------------|---------------------------------|
| a. Love b. Affection c. Emotional support d. Physical support |

If your answers are correct turn to next page.
If you missed go back to pages 28 - 30.
The kind of person the infant will become depends in part upon the characteristics of his parents, their relationships to each other, and the emotional atmosphere of the home in general. Affection, warmth and understanding accompanied by a consistent mode of approach is necessary for the infant.

When finished

proceed to next page.
At six months of age the normal infant starts to take Initiative and seeks adult contact other than with the mother.
Refer to pages 28 - 33 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is most correct go on to the next question or frame. Choose the most correct answer.

27. The kind of person the infant will become as an adult depends on:
   a. Setting no limits
   b. Fulfilling his basic needs
   c. Punishment for bad behavior
   d. Emotional stability and characteristics of his parents.

   28. The emotional states present at birth are:
       a. Sucking reflex and sexuality
       b. Hunger and thirst
       c. Tranquility and irritability

   29. In order for the infant to develop well emotionally, the mother must:
       a. Give him a great deal of love and cuddling
       b. Put him in a day center
       c. Carry him as little as possible
       d. Expect the infant to take the initiative in seeking other adult contact.

   If your answers are correct turn to next page. If you missed go back to pages 28 - 33.
UNIT III

THE AVERAGE LEVELS OF DEVELOPMENT
THE AVERAGE DEVELOPMENT AT ONE YEAR

An Introductory Overview

Development during infancy is very rapid. The Motor Control reaches a plateau where the child can stand alone, sit for an indefinite period of time, and walk with help. His vocabulary is very limited due to his interest and preoccupation with walking.

By one year of age the infant grows into a high powered, willful creature who is always investigating and exploring everything within his reach in an active manner. He grasps any object and directs it to the mouth to taste and chew on. Therefore, parents and those concerned with the child's rearing should always keep unsafe objects such as medicines, poisons, insecticides and cleansing detergents out of his reach.

Socially the infant progresses from a blank, unblinking individual to one who smiles at people, demands company, and participates actively in social games. By the end of the first year emotions of fear, rage, jealousy, love, excitement, anger and joy become recognizable. Facial expression, vocalization and body movement become part of the child's emotional equipment. Yet, the child is still egocentric, self-centered, preferring to play by himself.

The development of the ability to oppose the thumb to the fingers in picking up objects is preceded by reaching, grasping and raking movements. Early attempts in reaching also involve eye-hand coordination. Effective use of the hands is called prehension or adaptivity. This enables the child at one year to hold a crayon and to scribble, to eat with a spoon alone, to dress and to undress.

Prehension (adaptivity) and locomotion (movement) develop independently of any teaching. Knowledge of these motor abilities "just comes," Each skill follows an orderly sequential course whose rate is little
effected by environmental factors. Thus as each skill develops, opportunity to practice and use it is necessary. This means that the child needs plenty of space for walking, objects safe enough to pick up, handle, manipulate, chew and taste on as well as explorative items. Most of all the infant is in need of freedom and encouragement to venture.
Motor control of a child at one year of age is such that he can bring his hands to his face and peek-a-boo, play with rattle and grasps small objects.

When finished proceed to next page.
SOCIAL EMOTIONAL GROWTH

At one year of age the child communicates with himself and those around him. Due to his limited vocabulary the child depends a great deal on nonverbal communication. He shows a great deal of affection, jealousy, anger as well as other emotions. At this age the child goes through a negative stage.

Figure 29
At one year the child is **Egocentric**—concerned **Only** with himself.

When finished
proceed to next page.
LEVELS OF ACHIEVEMENT AT ONE YEAR

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor</td>
<td>At one year of age the child is able to hold small objects and play simple games such as grasping the ball and letting it go. He will pick up anything and put it directly into his mouth. Therefore, lead painted toys, insecticides, detergents, and other poisonous or dangerous materials must be placed out of his reach. Fig. 31.</td>
</tr>
</tbody>
</table>

Figure 30

Figure 31

When finished proceed to next page.
**Levels of Achievement at One Year**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Ability</td>
<td>At one year of age the child is able to stand alone for a moment or two. Whenever he falls down, he gets up and tries to stand again; he becomes very amused with his achievement. Fig. 32. He also can walk with support, and he is able to sit steadily for indefinite periods of time. Fig. 33.</td>
</tr>
</tbody>
</table>

---

![Figure 32](image1)

![Figure 33](image2)

When finished, proceed to next page.
Refer to pages 38, 39, 40, & 41, while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

30. Match the following names of levels of development with their relative description.

<table>
<thead>
<tr>
<th>Levels of development</th>
<th>Cover Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ability to walk</td>
<td>1. (B)</td>
</tr>
<tr>
<td>2. Adds 15 pounds</td>
<td>2. (D)</td>
</tr>
<tr>
<td>3. Adds 8 inches</td>
<td>3. (D)</td>
</tr>
<tr>
<td>4. Picks up objects</td>
<td>4. (C)</td>
</tr>
<tr>
<td>5. Turns at sound of bell</td>
<td>5. (A)</td>
</tr>
<tr>
<td>6. Has six teeth</td>
<td>6. (D)</td>
</tr>
<tr>
<td>7. Cooperates in dressing</td>
<td>7. (C)</td>
</tr>
<tr>
<td>8. Shows jealousy and anger</td>
<td>8. (E)</td>
</tr>
<tr>
<td>9. Plays with rattle</td>
<td>9. (B)</td>
</tr>
<tr>
<td>10. Sits erect</td>
<td>10. (B)</td>
</tr>
<tr>
<td>11. Recognizes his own name</td>
<td>11. (A)</td>
</tr>
<tr>
<td>12. Egocentric (self-centered)</td>
<td>12. (E)</td>
</tr>
<tr>
<td>13. Scribbles with crayons</td>
<td>13. (C)</td>
</tr>
</tbody>
</table>

Relative description

A. Language/vocalization
B. Motor control
C. Adaptivity
D. Physical growth
E. Emotional/Social growth

If your answers are correct turn to next page. If you missed go back to pages 38, 39, 40, & 41.
Refer to pages 40 & 41 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is similar or equivalent go on to the next question or frame. Choose similar or equivalent answer.

31. What are some of the things the child is able to accomplish at one year of age if his Motor development is normal?
   a. ____________________
   b. ____________________
   c. ____________________
   d. ____________________

32. Why is it dangerous to leave poisonous materials or lead painted toys near his reach?
   He picks any article indiscriminately and puts it into his mouth.
   a. Sits alone
   b. Stands alone
   c. Walks with help
   d. Plays peek-a-boo and/or others

If your answers are similar or equivalent turn to next page.
If you missed go back to pages 40 & 41.
### ADAPTABILITY AND COORDINATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptable Coordination</td>
<td>The child at 12 months can play more systematically, if he is given a crayon he will scribble with it.</td>
<td>Figure 34</td>
</tr>
<tr>
<td></td>
<td>Between 10 months and one year of age the child plays with cubes and other manipulative toys.</td>
<td>Figure 35</td>
</tr>
<tr>
<td></td>
<td>Now he is more cooperative in undressing. He can put his arm through a sleeve by himself.</td>
<td>Figure 36</td>
</tr>
</tbody>
</table>

When finished proceed to next page.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability &amp; Coordination Cont'd</td>
<td>He is able to hold a cup to drink.</td>
<td>Figure 37</td>
</tr>
<tr>
<td></td>
<td>He is able to eat with a spoon without assistance even though finger feeding is his preferable choice.</td>
<td>Figure 38</td>
</tr>
</tbody>
</table>

When finished proceed to next page.
Refer to pages 44 & 45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is the most correct go on to the next question or frame. Choose the most correct answer.

33. The adaptability of the child at one year is developed enough so that he can:
   a. Write the first letter of his name
   b. Put his shoes on
   c. Scribble with a crayon.

34. The one year old child will be able to:
   a. Align 20 cubes
   b. Walk up the stairs
   c. Feed himself with a spoon

35. The child's muscles at one year are not well adapted to enable him to hold a cup and drink.
   True
   False

If your answers are correct turn to next page. If you missed go back to pages 44, & 45.
Refer to pages 39–45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

36. Write briefly each figure the nature of adaptability or motor control that the child has reached at the age of one year. Specify whether it is adaptive or motor development.

1. Stands momentarily and walks with support—Motor control.

If your answers are correct turn to next page.
If you missed go back to pages 39–45.
Refer to pages 39-45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.


3. Plays Peek-a-boo - Motor control.

If your answers are correct turn to next page.
If you missed go back to pages 39-45.
Refer to pages 39-45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question or frame.

4. Sits for indefinite period – Motor control.

5. Holds a crayon and scribbles – Adaptive.

If your answers are correct turn to next page. If you missed go back to pages 39-45.
Refer to pages 39-45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is most correct go on to the next question or frame.

37. For each of the following descriptions write down the level of achievement.

<table>
<thead>
<tr>
<th>Description</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. At one year the child is able to play simple games such as holding the ball and letting it go.</td>
<td>Motor control</td>
</tr>
<tr>
<td>b. Cooperative in dressing and undressing, takes off his socks.</td>
<td>Adaptivity</td>
</tr>
<tr>
<td>c. Expression of jealousy, affection and anger.</td>
<td>Emotional growth</td>
</tr>
</tbody>
</table>

If your answers are correct turn to next page. If you missed go back to pages 39-45.
Refer to pages 39-45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is most correct go on to the next question or frame.

d. By one year the child has tripled his weight.

<table>
<thead>
<tr>
<th>Normal physical growth</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Motor control</th>
</tr>
</thead>
</table>

e. Most one year olds can walk with help.

<table>
<thead>
<tr>
<th>Vocalization</th>
</tr>
</thead>
</table>

f. Says "Mama" and "Dada"

If your answers are correct turn to next page. If you missed go back to pages 39-45.
Refer to pages 39-45 while answering the following questions if necessary.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is most correct go on to the next question or frame.

38. Choose the right answer.

Mrs. Smith will celebrate Jim's first birthday in one week, yet she noticed that little Jimmy is unable to stand, even for a short period of time; nor can he walk with support.

If she asks your advice, which of the following answers will you give Mrs. Smith?

a. Do not worry Mrs. Smith, Jimmy is quite normal.
b. Jimmy's motor development probably requires that you consult with his pediatrician.
c. Jimmy is mentally retarded.

If your answers are correct turn to next page.
If you missed go back to pages 39-45.
Choose the correct answer for the following questions for motor activity.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question.

39. A. Grasping ability or behavior is coordinated with eye movement at the beginning.  

B. Jimmy who is one year old reaches for objects without the need of looking at objects before reaching for them. (A)

40. A. Mrs. Smith, who believes that the child will only develop his motor skills through teaching, confined Janice to a small space and left her in the play pen long hours with one object. Mrs. Smith leaves Janice a great deal of the time and is afraid to let her wander around lest anything should happen.

B. Mrs. John did not make any effort to teach her child (1 year) any aspect of motor development believing that knowledge of these motor abilities "just comes," but Mrs. John provided opportunity for the child to use and practice each skill as it develops. Mrs. John made sure that there was plenty of space for crawling and walking; and objects to pick up and handle to encourage her child to venture and explore. (B)

When finished proceed to next page.
Choose the correct answer for the following questions for motor activity.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question.

41. A. As soon as she went home, Mrs Smith began planning a procedure for teaching baby Janice to grasp, move, and walk. By the age of six months, due to Mrs. Smith's efforts, Janice was able to stand and sit alone.

B. At one year, Jimmy has developed the ability to grasp objects and move around without the need for teaching which means Prehension and locomotion develop independently of any teaching. (B)

When finished proceed to next page.
Choose the correct answer for the following questions for motor activity.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question.

42. A. At about six months, Mrs. Singer noticed her baby daughter began to produce speech sounds. Then Mrs. Singer began to use a great deal of language around her, always talking to her while feeding, changing diapers or playing. She emphasized the necessity of talking and interpreting because it will develop the child's language and motivates her to communicate and grow.

B. Mrs. J. was a very protective and a loving mother, thus she always made sure that her ten months old child was always clean, tidy and well-fed, and made sure that everything is always quiet and peaceful around him; thus she handled him very quietly with few words.

When finished proceed to next page.
Choose the correct answer for the following questions for motor activity.

Please cover the answer column with the Mask. Do not expose it before you have written down your answers. Compare your answer with those given. If the answer is correct go on to the next question.

43. A. Mrs. Jackson, who took one year of nursing, was well aware of the communicable disease germs which could be transmitted to others through communication and interaction. Thus, Mrs. J. made sure that her child during his first year did not come into contact with adults except on certain occasions, also she instructed his father to put a mask on his mouth in order not to breathe in the baby's face.

B. Mrs. S had also had a one year child, but she wasn't so fearful of germs, in fact she never thought of those unseen creatures, so she always urged her husband to carry the baby, talk to her and play with her. If Mrs. S. was busy, she allowed her younger sister to play and socialize with the one year child. (B)
QUESTIONNAIRE

EARLY CHILDHOOD
FROM BIRTH TO ONE YEAR

Each of the following questions or incomplete statements is followed by several suggested answers or completions. Answer by choosing the most appropriate answer.

1. Look at Figure 1 and write down the reflexes of the newborn baby.

2. Figure 2 illustrates the:
   a) Plantario reflex
   b) Falling sensation response
   c) Moro reflex
3. The newborn baby at birth is able to:

   a) Suck and swallow
   b) Hold objects for a few seconds and let go
   c) Lift his head

4. Figure 3 illustrates the:

   a) Moro reflex
   b) Tonic neck reflex
   c) Grasp reflex

5. Figure 4 illustrates the:

   a) Swimming reflex
   b) Plantario reflex
   c) Tonic neck reflex
6. Label the following figures with the names of the relative reflexes.

Fig. 5

Fig. 6

Fig. 7

Fig. 8
7. Intelligence tests in young infants are tests of:
   a) Social adaptability
   b) Motor ability
   c) The use of infant’s toys
   d) Adaptive behavior

8. Match the following reflex names with the relative description.

   DESCRIPTION                                                                 | REFLEX NAME
   1. Present in both hands and feet.                                            | A. Moro startle reflex
   2. Ability to turn head to one side.                                          | B. Rooting reflex
   3. Enables infant to locate nipple.                                           | C. Tonic neck reflex
   4. Foot movement                                                             | D. Sucking reflex
   5. Accompanied by swallowing and gagging reflex                              | E. Plantario reflex
   6. Aroused by sudden noise                                                   | F. Grasp reflex

9. The baby will take a spoon by the handle and can dip it into a bowl and up to his mouth at:
   a) Forty weeks
   b) Two years
   c) Twelve months
10. The best and most comprehensive indicator of developmental status in an infant is:
   a) Anatomical and physiological measurements
   b) Apgar test
   c) Comparison to norms of his age level
   d) Behavior

11. Which of the following will have the most impact on the infant as a person:
   a) Understanding of the individual needs of the child
   b) Love and consistency
   c) Democratic environment
   d) Strict discipline

12. The first and most crucial component of the healthy personality to develop in the child is:
   a) Sense of belonging
   b) Sense of trust
   c) Feeling of physical satisfaction
13. "Puts objects into mouth" is a positive sign of developmental behavior at one year which cautions parents to:

   a) Keep baby in his play pen
   b) Watch child at all times
   c) Keep medicines and poisons out of reach

14. By twelve months the baby is able to:

   a) Use a push or pull toy with ease
   b) Transfer a toy from one hand to another
   c) Grasp a ball and let it go

15. The baby is able to hold a cup and drink at the age of:

   a) 12 months
   b) 16 months
   c) 8 months
16. Motor Skills acquired by the one year old usually include:
   a) Hopping on one foot
   b) Walking with support
   c) Lacing his shoes

17. The grasp reflex is:
   a) Developed after 24 hours of birth
   b) Present at birth
   c) Disappears after the first 24 hours

18. The emotional needs of the infant are:
   a) Love, affection and physical support
   b) Quiet and peaceful environment
   c) Ample supply of toys and nourishment

19. The child at one year can bring his hands up to his face and peek-a-boo, play with a rattle and grasp small objects. These kinds of activities are ascribed to:
   a) Moro reflex
   b) Adaptivity
   c) Social learning
   d) Motor reflex
20. The one year old is able to scribble with a crayon. This is due to normal development of:
   
a) Social-emotional growth  
b) Motor control  
c) Adaptivity and coordination