Chapter 1 Notes

I. Introduction
   a. For you to become the kind of educator children deserve, you should begin by believing that most infants are able and natural communicators from birth onward, unless some life circumstance has modified their natural potential
      i. When families find infant care facilities with well planned, positive and growth-producing environments that are staffed with skilled, knowledgeable and well trained adults who offer developmentally appropriate activities, infants can and do thrive
   b. Each child is a unique combination of inherited traits and environmental influences
      i. Structural, hormonal, and chemical influences that are present during pregnancy can affect the growth and development of the fetus
      ii. From birth, infants can be described as communicators interested in their surroundings
   c. Researchers confirm that newborns seem to assimilate information immediately and are interested in their surroundings
      i. Some suggest an infant possesses "the greatest mind" in existence and the most powerful learning machine in the universe
   d. Technology can now monitor the slightest physical changes in breathing, heartbeat, eye movement, and sucking rhythm and rates
      i. Tronick suggests that babies begin learning how to carry on conversations quickly and sucking patterns produce a rhythm that mimics give-and-take dialogues
         1. Notes that infants respond to very specific maternal signals, including:
            a. Tone of voice
            b. Looks
            c. Head movement
   e. Babies gesture and make sounds and seem to hold up their ends of conversations
      i. Infants often appear to suppress and channel their energy into seeing and hearing
   f. Young infants’ eye contact with their mothers is believed to be one of the first steps in establishing communication and is called gaze coupling
      i. Infants can shut off background noises and pay attention to slight changes in adult voice sounds

II. Genetic Inheritance and Emerging Behaviors
   a. Qualities an infant inherits from parents and the events that occur in the child’s life help shape the child’s language development
      i. Genetic given includes:
1. Gender
2. Temperament
3. Timetable for the emergence of intellectual, emotional, and physical capabilities
   ii. In the short 4 to 5 years after birth, the child’s speech becomes purposeful and similar to adult speech
      1. This growing language skill is a useful tool for satisfying needs and exchanging thoughts, hopes, and dreams with others
      2. As ability grows, the child understands and uses more of the resources of oral and recorded human knowledge and is well on the way to becoming a literate being

b. Natural capacities to categorize, invent, and remember information aids the child’s language acquisition
   i. Human beings are not the only ones who can communicate
      1. Birds and animals imitate sounds and signals and are believed to communicate
   ii. A basic difference between human beings and other species exists
      1. Development of the cerebral cortex sets humans apart from less intelligent animals
      2. Our advanced mental capabilities, such as thought, memory, language, mathematics, and complex problem solving, are unique to human beings
   iii. Humans have the unique species-specific ability to test hypotheses about the structure of language
      1. Can also develop rules for a particular language and remember and use them to generate appropriate language
      2. Within a few days after birth, human babies recognize familiar faces, voices, and even smells and prefer them to unfamiliar ones

   c. In recent decades, infant research has advanced by leaps and bounds to reveal amazing newborn abilities
      i. Long before they can talk, babies remember events and solve problems
         1. They can:
            a. Recognize faces
            b. See colors
            c. Hear voices
            d. Discriminate speech sounds
            e. Distinguish basic tastes
      ii. When you combine the psychological and neurological evidence, it is hard not to conclude that babies are just plain smarter than adults, at least if being smart means being able to learn something new
III. Infant Actions Prompt Caregiver Behaviors
   a. The human face becomes the most significantly important communication factor for the infant
      i. Facial expressions, which are varied and complex, eventually will influence infant body reactions (interior and exterior)
      ii. Parents and caregivers strive to understand the infant’s state of well-being by interpreting the infant’s face and postures, as infants also search faces in the world around them
   b. Researchers are studying the roles of facial expressions, gestures, and body movements in human social communication
      i. Early smile-like expressions that look like smiling may occur minutes after birth and are apparent in the faces of sleeping babies, whose facial expressions seem to constantly change
      ii. Researchers studying infant smiling during an infant’s first week of life suggest infants smile in various behavioral states including during brief alertness, drowsiness, active sleep, and quiet sleep but they also confirm what many parents have noticed--that smiling happens most in deep sleep
      iii. Caregivers observe that infants search for the source of the human voice and face
           1. Infant may become wide-eyed and crane his neck and lift his chin toward the source
           2. Body tension increases as he becomes more focused and somewhat inactive
           3. Most caregivers respond to these signals and pick up the infant and cuddle him

IV. Definitions
   a. Language
      i. Refers to a system of intentional communication and self-expression through sounds, signs, or symbols that are understandable to others
         1. Language-development process includes both sending and receiving information
         2. Input (receiving) comes before output (sending)
            a. Input is organized mentally by an individual long before there is decipherable output
   b. Communication
      i. Broader term, defined as giving and receiving information, signals, or messages
         1. Person can communicate with or receive communications from animals, infants, or foreign speakers in a variety of ways
   c. Speech is much more complex than simple parroting or primitive social functioning
      i. Power of language enables humans to dominate other life forms
ii. Ability to use language creatively secured our survival by giving us a vehicle to both understand and transmit knowledge and to work cooperatively with others

iii. Language facilitates peaceful solutions between people

V. Influences on Development

a. Child’s ability to communicate involves an integration of body parts and systems allowing:
   i. Hearing
   ii. Understanding
   iii. Organizing thoughts
   iv. Learning
   v. Using language

b. Most children accomplish the task quickly and easily, but many factors influence the learning of language

c. Research suggests that babies instinctively turn their heads to face the source of sound and can remember sounds heard before birth
   i. Has promoted mothers talking to, singing to, and reading classic literature and poetry to the unborn
   ii. Research has yet to document evidence of the benefits of these activities

d. Of all sounds, nothing attracts and hold the attention of infants as well as the human voice—especially the higher-pitched female voice
   i. Dietrich, Swingley, and Werker note that infants begin to acquire their language by learning phonetic categories
      1. At birth infants seem to distinguish most of the phonetic contrasts used by the world’s languages
         a. Over the first year, this “universal” capacity shifts to a language-specific pattern in which infants retain or improve categorization of native-language sounds but fail to discriminate many non-native sounds
   ii. Rhythmic sounds and continuous, steady tones soothe some infants
   iii. Many commercial sound-making products that attempt to soothe can be attached to cribs or are imbedded in plush stuffed animals
      1. Most emit a type of staticlike or heartbeat sound or combination of the two
   iv. Too much sound in the infant’s environment, especially loud, excessive, or high-volume sounds, may have the opposite effect
      1. Excessive household noise can come from televisions or other sources
      2. Many have described sensory-overload situations when infants try to turn off sensory input by turning away and somehow blocking that which is at the moment
overwhelming, whether the stimulus is mechanical or human
e. Although hearing ability is not fully developed at birth, newborns can hear moderately loud sounds and can distinguish different pitches
   i. Auditory acuity develops swiftly
   ii. Infants inhibit motor activity in response to strong auditory stimuli or when listening to the human voice and attempt to turn toward it
      1. Seen by some researchers as an indication that infants are geared to orient their whole bodies toward any signal that arouses interest
      2. Infants’ body responses to human verbalizations are a rudimentary form of speech development
f. Sensory-motor development
   i. Involves the use of sense organs and the coordination of motor systems (body muscles and parts), is vital to language acquisition
   ii. Sense organs gather information through seeing, hearing, smelling, tasting, and touching
      1. These sense-organ impressions of people, objects, and life encounters are sent to the brain, and each perception (impression received through the senses) is recorded and stored, serving as a base for future oral and written language
g. Newborns and infants are no longer viewed as passive, unresponsive “mini” humans
   i. Instead, infants are seen as dynamic individuals, preprogrammed to learn, with functioning sensory capacities, motor abilities, and a wondrous built-in curiosity
   ii. Parents and caregivers can be described as guides who open opportunity and act with newborns rather than on them
h. Beginning socialization
   i. A child’s social and emotional environments play a leading role in both the quality and quantity of beginning language
   ii. Human children have the longest infancy among animals
      1. Our social dependency is crucial to our individual survival and growth
      2. Much learning occurs through contact and interaction with others in family and social settings
      3. Basic attitudes toward life, self, and other people form early, as life’s pleasures and pains are experienced
   iii. The young child depends on parents and other caregivers to provide what is needed for growth and equilibrium (a balance achieved when consistent care is given and needs are satisfied)
      1. This side of a child’s development has been called the affective sphere

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a. Refers to the affectionate feelings, or lack of them, shaped through experience with others
b. Greenspan believes that each time a baby takes in information through the senses, the experience is double-coded as both a physical/cognitive reaction and as an emotional reaction to those sensations

iv. Textbooks often speak indirectly about the infant’s need to feel loved consistently, using words like nurturance, closeness, caring, and commitment
   1. Primary goal of parents and caregivers should be handling the infant and satisfying the child’s physical needs in a way that leads to mutual love and a bond of trust
   2. This bond, often called attachment, is an event of utmost importance to the infant’s progress
      a. Developmental milestone is reached when a baby responds with an emotional reaction of his own by indicating obvious pleasure or joy in the company of a parent or caregiver
      b. Attachment is formed through mutual gratification of needs and reciprocal communication influenced by the infant’s growing cognitive ability
      c. Two-way nature of the attachment process is also referred to as bonding

v. The special feelings an infant develops for a main caregiver later spreads to include a group of beloved family members
   1. If an attachment bond is evident and consistent care continues, the child thrives
   2. Social interaction with an emphatic and attuned caregiver plays the major role in the growth and regulation of the child’s nervous system and it helps the infant develop the strength needed to become socially competent

vi. Newborns seem to have an individual preferred level of arousal, a moderation level (neither too excited nor too bored)
   1. They seek change and stimulation and seem to search out newness
   2. Each human may possess an optimal level of arousal—a state when learning is enhanced and pleasure peaks
   3. Mothers and experienced caregivers try to keep infants at moderate levels of arousal, neither too high nor too low
   4. One can perceive three states during an older infant’s waking hours:
      a. State in which everything is all right and life is interesting
b. Reactive state to something familiar or unfamiliar, when an observer can see an alert “what’s that?” or “who’s that?” response

c. Crying or agitated state

5. One can observe a switch from feeling safe or happy to unsafe or unhappy in a matter of seconds

a. Loud noises can startle the infant and elicit distressed crying

b. Infants control input and turn away or turn off by moving their eyes and head or body and by becoming fussy or falling asleep

6. Greenspan urges parents and caregivers of infants to improve their observational skills

i. Parent and caregiver attitudes and expectations

   i. Research indicates that parents’ and caregivers’ attitudes and expectations about infants’ awareness and sensory abilities may be predictive of developmental growth

j. Growing intellect

   i. Other important factors related to the child’s mental maturity or ability to think are:

      1. Ages
      2. Stages
      3. Sequences of increased mental capacity that are closely related to language development

   ii. Language skill and intellect seem to be growing independently, at times, with one or the other developing at a faster rate

      1. Relationship of intelligence and language has been a subject of debate for a long time
      2. Most scholars agree that these two areas are closely associated
      3. Researchers suspect the mind’s most important faculties are rooted in emotional experiences from very early in life

   iii. Curiosity

      1. Can be defined as a compulsion (drive) to make sense of life’s happenings
      2. Over time, exploring, searching, groping, and probing by infants shift from random to controlled movements
      3. Period starting at about eight months of age is an age when infants possess insatiable appetites for new things—touching, manipulating, and trying to become familiar with everything that attracts them
      4. Increasing motor skill allows greater possibilities for exploration
      5. Skilled caregivers of infants are kept busy trying to provide novelty, variety, and companionship while monitoring safety
6. Curiosity of infants seems to wane only when they are tired, hungry, or ill

iv. Cultural ideas concerning infant communication
   1. Cultural and social forces affect language acquisition
      a. Influence young lives through contact with group attitudes, values, and beliefs
         i. Some cultures expect children to look downward when adults speak, showing respect by this action
         ii. Other cultures make extensive use of gestures and signaling
         iii. Others seem to have limited vocabularies or feel holding conversations with infants inappropriate

VI. Theories of Language Emergence
   a. Behaviorist/environmentalist (or stimulus-response) theory
      i. As parents and main caregivers reward, correct, ignore, or punish the young child’s communication, they exert considerable influence over both the quantity and quality of language usage and the child’s attitudes toward communicating
      ii. Under this theory, the reactions of the people in a child’s environment have an important effect on a child’s language development
         1. Positive, neutral, and/or negative reinforcement plays a key role in the emergence of communicational behaviors
      iii. Child’s sounds and sound combinations are thought to be uttered partly as imitation and partly at random or on impulse, without pattern or meaning
         1. Child’s utterances may grow, seem to stand still, or become stifled, depending on feedback from others
   b. Maturational (normative) theory
      i. The writings of Arnold Gesell and his colleagues represent the position that children are primarily a product of genetic inheritance and that environmental influences are secondary
         1. Children are seen as moving from one predictable stage to another, with “readiness” the precursor of actual learning
      ii. Was widely accepted in the 1960s, when linguists studied children in less-than-desirable circumstances and discovered consistent patterns of language development
      iii. Using this theory as a basis for planning instruction for young children includes:
         1. Identifying predictable stages of growth in language abilities
2. Offering appropriate readiness activities to aid children’s graduation to the next higher level

c. Predetermined/innatist theory
   i. Under this theory, language acquisition is considered innate (a predetermined human capacity)
      1. Each new being is believed to possess a mental ability that enables that being to master any language to which he has been exposed from infancy
      2. Chomsky, a linguistic researcher, theorizes that each person has an individual language acquisition device (LAD)
         a. Also theorizes that this device (capacity) has several sets of language system rules (grammar) common to all known languages
            i. As the child lives within a favorable family climate, his perceptions spark a natural and unconscious device, and the child learns the “mother tongue” Imitation and reinforcement are not ruled out as additional influences
         b. Notes two- and three-year-olds can utter understandable, complicated sentences that they have never heard
   3. More current theory also suggests young children are equipped with an implicit set of internal rules that allows them to transform the sequences of sounds they hear into sequences of ideas—a remarkable thinking skill
      a. Theorists who support this position note the infant’s ability to babble sounds and noises used in languages the child has never heard

d. Cognitive-transactional and interactionist theory
   i. Language acquisition develops from basic social and emotional drives
      1. Children are naturally active, curious, and adaptive and are shaped by transactions with the people in their environment
      2. Language is learned as a means of relating to people
         a. Others provide social and psychological supports that enable the child to be an effective communicator
   ii. L. S. Vygotsky’s major work, Thought and Language, suggests children’s meaningful social exchanges prepare them for uniting thought and speech into “verbal thought”
      1. Theorizes that this inner speech development promotes oral communication and is the basis for written language
2. Drives stem from a need for love and care, and the need prompts language acquisition

iii. Children are described as reactors to the human social contact that is so crucial to their survival and well-being
   1. They are natural explorers and investigators
   2. Adult’s role is to prepare, create, and provide environments and events
   3. Children’s views of the world consist of their mental impressions, which are built as new life events are fit into existing ones or as categories are created for new events
   4. Language is an integral part of living
      a. Consequently, children seek to fit language into some pattern that allows understanding
      b. With enough exposure and with functioning sensory receiving systems, children slowly crack the “code” and eventually become fluent speakers

iv. Vygotsky
   1. Argued that language learning is, in part, biological but that children need instruction in the zone between their independent language level and the level at which they can operate with adult guidance
   2. Bodrova and Leong list four basic principles underlying the Vygotskian framework:
      a. Children construct knowledge
      b. Development cannot be separated from its social context
      c. Learning can lead development
      d. Language plays a central role in mental development
   3. Early childhood practitioner adopting Vygotsky’s ideas would believe both teacher behaviors and the child’s active physical manipulation of the environment influence and mediate what and how a young child learns or “constructs” mentally
   4. Without the teacher’s social interaction, a child does not learn which characteristics are most important or what to notice and act upon
   5. Teacher’s role is to find out through thoughtful conversation, observation, and collaboration what concept a child holds during a jointly experienced happening and to aid the child to further mental construction(s)
   6. Under Vygotskian theory, teachers can affect young children’s cognitive processes (the way they think and use language)
Other individual and societal features that affect children’s thinking are:

i. Family
ii. Other children and people in their lives
iii. Society at large, including:
   1. Language
   2. Numerical systems
   3. Technology.

7. Children learn or acquire a mental process by sharing or using it when interacting with others
   a. Once gained, the child’s learning (the acquired mental tool) is used by the child in an independent manner

e. Constructivist theory
   i. Proposes that children acquire knowledge by constructing it mentally in interaction with the environment
   ii. Children are believed to construct theories (hypothesize) about what they experience and then put happenings into relationships
      1. Later, with more life experiences, revisions occur and more adequate explanations are possible
      2. Constructivists point to young children’s speech errors in grammar
         a. Internal rules have been constructed and used for a period of time, but with more exposure to adult speech, these rules change and speech becomes closer to adult-like forms
         b. The rules young children used previously were their own construct and never modeled by adult speakers
   iii. Planning for language development and early literacy using a constructivist perspective would entail offering wide and varied activities while emphasizing their interrelatedness
      1. Teachers and parents are viewed as being involved jointly with children in literacy activities from birth onward
      2. Overall objective of a constructivist’s approach is to promote children’s involvement with interesting ideas, problems, and questions
         a. Teachers would also help children:
            i. Put their findings and discoveries into words
            ii. Notice relationships
            iii. Contemplate similarities and differences
         b. Children’s hands-on activity is believed to be paired with mental action
iv. A secure, unstressed environment encourages the development of children’s ability to:
   1. Cooperate
   2. Respect one another
   3. Exercise curiosity
   4. Gain confidence in themselves
   5. Figure things out on their own

v. Children become autonomous learners

f. Other theories
   i. No all-inclusive theory of language acquisition substantiated by research
      1. Many relationships and mysteries are still under study
   ii. Current teaching practices involve many different styles and approaches to language arts activities
      1. Some teachers may prefer using techniques in accord with one particular theory
         a. One goal common among educators is to provide instruction that encourages social and emotional development while also offering activities and opportunities in a warm, language-rich, supportive classroom, center, or home
         b. Educators believe children should be included in talk and treated as competent language partners
   iii. This text promotes many challenging activities that go beyond simple rote memorization or passive participation
      1. Offers an enriched program of literary experience that encourages children to think and use their abilities to relate and share their thoughts
   iv. The text is based on the premise that children’s innate curiosity, desire to understand and give meaning to their world, and their predisposition equips them to learn language
      1. Language growth occurs simultaneously in different yet connected language arts areas and all other curriculum offerings
      2. Children continually form, modify, rearrange, and revise internal knowledge as experiences, activities, opportunities, and social interactions are encountered
   v. Children’s unconscious mental structuring of experience proceeds in growth spurts and seeming regressions, with development in one area influencing another

VII. Research on Infant’s Brain Growth
   a. Rich early experience and time with caring and loving families or early childhood educators has become even more important as researchers of neurolinguistics make new discoveries about infants’ and young children’s brain growth
i. Although awed by the brain’s exceptional malleability, flexibility, and plasticity during early years and its ability to “explode” with new synapses (connections), scientists also warn of the effects of abuse or neglect on the child’s future brain function

b. Estimated that at birth, each neuron in the cerebral cortex has approximately 2,500 synapses, and the number of synapses reaches its peak at two to three years of age, when there are about 15,000 synapses per neuron.

c. New discipline called cognitive science has appeared, uniting psychology, philosophy, linguistics, computer science, and neuroscience.

d. New technology gives researchers additional tools to study:
   i. Brain energy
   ii. Volume
   iii. Blood flow
   iv. Oxygenation
   v. Cross-sectional images

e. Neuroscientists have found that throughout the entire process of development, beginning even before birth, the brain is affected by environmental conditions, including the kind of nourishment, care, surroundings, and stimulation an individual receives.
   i. Brain is profoundly flexible, sensitive, and plastic and is deeply influenced by events in the outside world.
   ii. New developmental research suggests that humans’ unique evolutionary trick, their central adaptation, their greatest weapon in the struggle for survival, is precisely their dazzling ability to learn while they are babies and to teach when grown-ups.

f. Early experience has gained additional importance and attention.
   i. New scientific research does not direct parents to provide special “enriching” experiences to children over and above what they experience in everyday life.
      1. Does suggest that a radically deprived environment could cause damage.
   ii. Gould believes that various types of unpredictable, traumatic, chaotic, or neglectful environments can physically change the infant’s brain by over activating the brain’s neural pathways.
      1. These changes may include:
         a. Change in the child’s muscle tone
         b. Profound sleep difficulties
         c. Increased startle response
         d. Significant anxiety
      2. Life experiences are now believed to control both how the infant’s brain is “architecturally formed” and how intricate brain circuitry is wired.
a. Infant sight and hearing acuity need to be assessed as early as possible given this new information.
b. If a newborn’s hearing disability is diagnosed and treated within 6 months, the child usually develops normal speech and language on schedule.
c. With new technology, hearing tests are far more accurate and can pinpoint the level of hearing loss in babies who are only a few hours old.
   i. American Academy of Pediatrics recommends that all infants be examined by six months of age and have regular checkups after age three.
g. Wingert and Brant
   i. State that science is now giving us a much different picture of what goes on inside babies’ hearts and heads in that very early on, babies are already mastering complex emotions such as jealousy, empathy, and frustration.
      1. These emotions were once thought to be learned much later in toddlerhood.
   ii. Also believe that babies are far more sophisticated intellectually than we once thought.
      1. Babies as young as 4 months have advanced powers of deduction and an ability to decipher intricate patterns.
         a. They have a strikingly nuanced visual palette, which enables them to notice small differences, especially in faces, that adult and older children lose the ability to see.
      2. Until a baby is 3 months old, he can recognize a scrambled photograph of his mother just as quickly as a photograph in which everything is in the right place.
h. Older debate about nature versus nurture are outdated.
   i. The two are inseparably intertwined, and innate endowments enable babies to use their powerful learning mechanisms to take advantage of the information they receive from grown-ups.
   ii. Interaction and interplay between both is now viewed as critical in determining brain development and which neural pathways and circuitry will diminish, possibly disappear, or grow stronger and become permanent.
   i. Nash describes a growth spurt that occurs in the infant’s brain shortly after birth.
      i. States that the brain experiences a second growth spurt after birth as the axons and dendrites explode with new connections.
      1. Electrical activity fine-tunes the brain’s circuitry, determining which connections will be retained and which will be pruned.
ii. Every time the child uses his or her senses, tiny bursts of electricity shoot through the brain, knitting neurons into circuits as well defined as those etched onto silicon chips
   1. Results are those behavioral mileposts that never cease to delight and awe parents
j. Many scientists believe that in the first few years of childhood there are a number of critical or sensitive periods, or “windows,” when the brain demands certain types of input
   i. If a child’s brain is not stimulated during a specific window of time, consequences occur
      1. These periods are described as “critical periods” or “plastic periods” in neurobiological literature
   ii. Chugani believes this is one of nature’s provisions for us to be able to use environmental exposure to change the anatomy of the brain and to make it more efficient
   iii. Bialystok and Hakuta are skeptical and observe clear evidence of differential abilities to learn language during certain time periods is not easily forthcoming
   iv. Gopnik, Meltzoff, and Kuhl are uncertain whether critical periods exist (in the case of language learning) or only seem to exist because brain structures have already developed through early experiences, affecting the way in which one perceives and interprets the world
k. One thing is clear—children who learn a second language between three and seven years of age perform like native speakers on various tests, whereas children learning a second language after puberty speak it with a foreign accent
   i. Wardle believes brain research also supports early second language learning, for it suggests that young children have the brain capacity and neural flexibility to undertake the challenging task
      1. Observes that second language learning creates new neural networks that increase the brain’s capacity for all sorts of future learning, not just language learning
l. What specific courses of action do brain researchers recommend?
   i. Providing excellent child care for working parents
   ii. Talking to babies frequently
   iii. Cuddling babies and using hands-on parenting
   iv. Using “parentese,” the high-pitched, vowel-rich, singsong speech style most adults readily undertake when interacting with babies that helps babies connect objects with words
   v. Giving babies freedom to explore within safe limits
   vi. Providing safe objects to explore and manipulate
   vii. Giving babies regular eye examinations and interesting visual opportunities
viii. Providing loving, stress-reduced care for the child’s emotional
development

m. Cowley describes “red flag behaviors” that should alert parents to
possible child learning difficulties:
   i. 0-3 months: Does not turn when you speak or repeat sounds
      like coos
   ii. 4–6 months: Does not respond to the word no or changes in
      tone of voice;
      1. Does not look around for sources of sound like a
         doorbell, or make babbling in speechlike sounds similar
         to adult speech such as p, b, and m
   iii. 7–12 months: Does not recognize words for common items, turn
      when you call his name, imitate speech sounds, or use sounds
      other than crying to get your attention

n. Educators and families agree that infant care should be provided by
knowledgeable adults who realize that early experiences and
opportunities may have long- term developmental consequences and
who provide rich, language-filled experiences and opportunities
   i. “Excessive pressure” for inappropriate skills at early ages may
      cause problems
      1. Adults’ enthusiasm for creating “super babies” may
         motivate them to offer meaningless age-inappropriate
         activities
   ii. Greenspan believes observations make clear that certain kinds
      of emotional nurturing propel infants and young children to
      intellectual and emotional health and that affective experience
      helps them master a variety of cognitive tasks
      1. States that as a baby’s experience grows, sensory
         impressions become increasingly tied to feelings
         a. It is the dual coding of experience that is the key to
            understanding how emotions organize intellectual
            capacities and indeed create the sense of self
   iii. Cole also points out that growing evidence suggests that
      thinking is an inseparable interaction of both cognition and
      emotion
      1. Interactive emotional exchanges with care- givers and
         their reciprocal quality are increasingly viewed as critical
         to human infants’ growth and development, including
         language development
      2. Early childhood caregivers realize that the adult a baby
         will someday become is the end result of the interactions
         he or she has with caregivers
   iv. Importance of environmental feedback is considerable
      1. Feedback by caregivers includes words of praise and
         providing caregiver attention and also promotes the
emotional satisfaction an infant feels when he is successful in doing something he set out to do

v. Some developers of infant materials, equipment, books, and services suggest they can speed brain development, "lock-in a baby's smarts," and promote emotional well-being
1. Families may feel they are under considerable pressure to find ways to accelerate early childhood experiences and that it is up to them to find products and services
   a. Most educators feel this is unnecessary and suggest spending time with infants and providing natural parenting, such as playing, engaging in baby talk, and simply putting plastic mixing bowls on the floor
2. Honig concurs and points out when an infant shakes a bell or pulls a toy in a string making it move he is delightedly learning he can get a specific effect
   a. Notes that scientists use these same strategies in their laboratories every day

VIII. Additional Communicative Abilities in Infancy
a. Newborns quickly make their needs known
   i. For example, they cry and their parents or caregivers respond
   ii. Babies learn to anticipate as the sense perceptions they receive begin to be connected to stored impressions of the past
b. Infants are very powerful in shaping relationships with significant caregivers
   i. Newborns are a wonderful combination of development, potential development, and cognitive flexibility
   ii. An infant can perceive from maternal behavior a willingness to learn from the infant and respond to his patterns of behavior and rhythms of hunger
   i. Accomplished by close observation of infant vocal and body clues, which indicate the child's state of being
   ii. At some point, the caregiver notices a pattern of mutual gazing is established
      1. Then a type of proto-conversation begins with caregiver vocalizations followed by infant response and noise making
d. Two developmental tasks that confront infants:
   i. Learning to regulate and calm themselves
      1. May be difficult for some infants
   ii. Learning to interact and "play" with caregivers
      1. Seems to come naturally
e. Infant is a noisemaker from birth
   i. Child's repertoire includes:
      1. Sucking noises
      2. Lip smacking
3. Sneezes
4. Coughs
5. Hiccups
6. Different types of cries

ii. As an infant grows, he makes vocal noises such as cooing after feeding
   1. Cooing seems to be related to a child’s comfort and satisfaction
      a. Sounds are relaxed, pitches low, and vowel sounds are made in an open-mouthed way
      b. Infant appears to be in control of this sound making
   2. Discomfort, by comparison, produces consonant sounds, made in a tense manner with the lips partly closed and the tongue and the ridge of the upper or lower jaw constricting air flow

iii. Families who attend to infant crying promptly and who believe that crying stems from legitimate needs rather than attempts to control tend to produce contented, trusting infants
   1. Parents of colicky babies are advised to hold and carry the infant more frequently in an effort to soothe

f. Infants differ in numerous ways from the moment of birth
   i. Greenspan notes that swaddling is soothing for most babies, while others enjoy a body massage in which their limbs are gently flexed and extended
   ii. Up until recently, scientists assumed that all human beings experienced sensations in similar ways
      1. We now know that individuals perceive the same stimulus very differently
   iii. Individual pace of development varies whether an infant reaches development milestones on the early or late side of normal seems to bear little relation to either cognitive skills or future proficiency
      1. In most cases, milestones in language development are reached at about the same age and in a recognizable sequence

   g. Babies learn quickly that communicating is worthwhile because it results in action on the part of another
   i. Greenspan warns that unless a child masters the level we call two-way intentional communication, normally achieved by an eight-month-old infant, the child’s language, cognitive, and social patterns ultimately develop in an idiosyncratic, piecemeal, disorganized manner
   ii. There is a high degree of relationship between a caregiver’s responsiveness and her child’s language competence
1. By 9 to 18 months of age, the more responsive mothers promoted greater language facility and growth

h. Infants quickly recognize subtle differences in sounds
   i. Believes this helps babies calm down and pay attention, in other words, listen. Infants move their arms and legs in synchrony to the rhythms of human speech
   ii. Random noises, tapping sounds, and disconnected vowel sounds do not produce this behavior

i. There is a difference between people in an infant’s life
   i. Some talk and touch, while others show delight
   ii. Some pause after speaking and seem to wait for a response
   iii. Child either “locks on” to the conversationalist, focusing totally, or breaks eye contact and looks away
      1. Almost as though the infant controls what he wants to receive
      2. Hunger, tiredness, and other factors also influence this behavior and may stop the child’s interest in being social

j. Special people in the infant’s life adopt observable behaviors when “speaking” to the child, just as the child seems to react in special ways to their attention
   i. Talking to babies differs from other adult speech in that the lyric or musical quality of speech seems more important than words
      1. Honig points out that infants listening to these long, drawn-out vowels experience an increase in heart rate
      2. At the same time it speeds up the brain’s ability to recognize connections between words and objects
   ii. Educators believe that “baby-talk” speech modifications may reflect social conventions and can vary among cultures
      1. Attention-holding ability of this type of adult speech may help the infant become aware of the linguistic function of vocalizations
         a. Mothers sometimes:
            i. Raise their voice pitch to a falsetto
            ii. Shorten sentences
            iii. Simplify their syntax and vocabulary
            iv. Use nonsense sounds
            v. Use a slower tempo
            vi. Use longer pauses than in adult conversation
            vii. Maintain prolonged eye contact during playful interchanges
      2. Most infants are attracted to high-pitched voices, but a few infants seem to overreact and prefer lower speech sounds
         a. Infants can pick up higher-pitched sounds better than lower-frequency ones, which may be why
they are entranced by the high-pitched coos and singsong nature of parentese

b. Parents’ voices when talking to their infants can be described as playful, animated, warm, and perhaps giddy

c. Falk proposes that “parentese” forms a scaffold for infants’ language acquisition, and human caregivers often use vocal means to placate and reassure
   i. They attempt to control their infant’s state of well-being
   ii. Falk notes vowels are lingered over, phrases are repeated, and questions carry exaggerated inflections

k. Mutual readiness to respond to each other appears built-in to warm relationships
   i. Infant learns that eye contact can hold and maintain attention and that looking away usually terminates both verbal and nonverbal episodes
      1. They learn a great deal about language before they ever say a word
      2. Most of what they learn at a very early age involves the sound system of language

l. Crying
   i. One of the infant’s primary methods of communication
      1. Cries can be weak or hardy, and they provide clues to the infant’s general health
      2. Only way an infant can affect his situation of need or discomfort
   ii. Infants begin early in life to control the emotional content of their cries
      1. Many parents believe they can recognize different types of crying, such as sleepy, frightened, hungry, etc., especially if infant body movements are observed concurrently
      2. Researchers have discovered that parents do indeed accurately infer the intensity of an infant’s emotional state from the sound of the cry itself, even if the baby is not visually observed
         a. Even adults inexperienced with infants seem to possess this ability
   iii. Child development specialists advise adult alertness and responsiveness to minimize crying
      1. Crying will take place in the best of circumstances, and research has indicated that there are some positive aspects of crying, including:
a. Stress reduction
b. Elimination of toxin in tears
c. Reestablishment of physical and emotional balance

2. Although crying may have its benefits, it is not recommended that infants be left to cry, but rather that adults continue to attempt to soothe and satisfy infant’s needs

iv. Baby’s crying may cause strong feelings in some adults, including:
   1. Anger
   2. Frustration
   3. Irritation
   4. Guilt
   5. Rejection

v. Successful attempts at soothing the infant and stopping the crying give both the infant and the caregiver satisfaction, feelings of competence, and a possible sense of pleasure
   1. When out-of-sorts infants cease crying, alertness, attentiveness, and visual scanning usually happen and/or the infants fall asleep
   2. Infant-caregiver interaction has been described as “a rhythmic drama,” “a reciprocal ballet,” and “a finely tuned symphony”
      a. All of these touch on the beauty and coordination of sound-filled moments between the parent and child

vi. Emotions are expressed frequently in crying as the infant nears his first birthday
   1. Fear, frustration, uneasiness with novelty or newness, separation from loved ones, and other strong emotions can provoke crying through childhood and beyond

vii. Infant care providers in group programs engage in frank staff discussions concerning infant crying
   1. Normal and natural staff feelings concerning crying need open discussion so that strategies can be devised in the best interests of both the infants and staff members
   2. Many techniques exist to minimize crying and also to monitor the crying levels of individual infants so that health or developmental problems can be spotted quickly

m. Smiling and Laughing
   i. True smiling can occur before six months of age and is usually associated with a caretaker’s facial, auditory, or motor stimuli
      1. Laughter may occur as early as four months of age and is believed to be a good predictor of cognitive growth
a. Some developmental experts suggest that the earlier the baby laughs, the higher the developmental level

2. In the second half of the first year, infants smile at more complex social and visual items
   a. Laughter at this age may be full of squeals, howls, hoots, giggles, and grins. Incongruity may be noticed by the infant, and laughter follows
   b. If an infant laughs when he sees the family dog in the driver’s seat with its paws on the wheel, the child may be showing recognition of incongruity—the child has learned something about car drivers

ii. Responsive caregivers promote infant smiling
   1. Ainsworth and Bell concluded that responsive mothers (those who are alert in caring for the infant’s needs) had babies who cried less frequently and had a wider range of different modes of communication
      a. These responsive mothers created a balance between showing attention and affording the infant autonomy (offering a choice of action within safe bounds) when the infant became mobile
         i. Also provided body contact and involved themselves playfully at times
   2. Gonzalez-Mena notes that there may be times when infants’ needs are met and the infant still cries
      a. Recommends that if you’ve done all you can to meet the needs and the baby’s still crying, it is not a reflection on you, your caring, or your skills—it’s about allowing emotions to be expressed instead of repressed
         i. When babies understand that what they feel is okay with the people around them, they have a better chance of learning to calm themselves—or in technical terms, learn self-regulation, a problem solving skill
      b. Doesn’t mean for the adult to exit completely and let the infant “cry it out,” but instead, one should make periodic contact and continue to reassure
         i. Most caregivers will have tried checking for possible discomfort and used past successful calming strategies

iii. Infant imitation
   1. Acredolo and Goodwyn suggest that infants as young as one or two days old may imitate parent head movements and facial behaviors
a. State that this inborn push to mimic others gets babies into a problem-solving mode from the very beginning
b. Babies thrive on problem solving
   i. Payoff is such a pleasant one—Dad sticks around to interact some more, and baby is amused. Imitation is such an important developmental component that Mother Nature has not left it up to chance
      1. She has made sure that each of us begins life’s journey with a necessary tool in hand

n. Babbling
   i. Early random sound-making
   ii. Infants the world over babble sounds they have not heard and will not use in their native language
      1. Has been taken to mean that each infant has the potential to master any world language
   iii. Close inspection shows repetitive sounds and “practice sessions” present
      1. Babbling starts at about the fourth to sixth month and continues in some children through the toddler period
      2. Peak in babbling is usually reached between 9 and 12 months
      3. Periods before the first words are spoken are marked by a type of babbling that repeats syllables, as in dadadadadada
         a. Called echolalia
         b. Infants seem to echo themselves and others
      4. Babbling behavior overlaps the stages of making one and two or more words, which ends for some children at about 18 months of age
   iv. Infants who are deaf also babble
      1. In play sessions, they will babble for longer periods without hearing either adult sound or their own sounds, as long as they can see the adult responding
      2. These children stop babbling at an earlier age than do hearing children
         a. Not clearly understood why babbling occurs, either in hearing or nonhearing impaired children, but it is thought that babbling gives the child the opportunity to use and control the mouth, throat, and lung muscles
         b. Researchers trying to explain babbling suggest that infants are not just exercising or playing with their vocal apparatus
Instead, they may be trying out and attempting to control their lips, tongues, mouths, and jaws to produce certain sounds.

Child’s babbling amuses and motivates the child, acting as a stimulus that adds variety to the child’s existence.

In time, the child increasingly articulates clear, distinct vowel-like, consonant-like, and syllabic sounds.

- Ba and da are acquired early because they are easy to produce, whereas el and ar are acquired late because a sophisticated ability to articulate sounds control is required.
  - Although babbling includes a wide range of sounds, as children grow older they narrow the range and begin to focus on the familiar, much-heard language of the family.
  - Other sounds are gradually discarded.

Almost any feature of environment may promote verbal attempts.

Physical contact continues to be important.

- Touching, holding, rocking, and engaging in other types of physical contact bring a sense of security and a chance to respond through sound making.
- Cooing and babbling sounds infants may also draw caregivers into “conversations” with them.
- Babies learn to wait for the adult’s response after they have vocalized, and both infants and adults are constantly influencing one another in establishing conversation-like vocal interactions.
- Active receiving of perceptions is encouraged by warm, loving parents who share a close relationship.
- Secure children respond more readily to the world around them.
- Children who lack social and physical contact or those who live in insecure home environments fall behind in both the number and range of sounds made.
  - Differences start showing at about six months of age.

Sound imitation eventually becomes syllable imitation, and short words are spoken near the end of the child’s first year.

Stages of vocalization.

- Stoel-Gammon outlines stages in infants’ production of sounds and notes that vocalization types typically overlap from one stage to another.
- Stage 1 (birth to 2 months)
  - Reflexive vocalization
2. Characterized by crying, fussing, vegetative sounds like coughing, burping, sneezing, and some vowel-like sounds

iii. Stage 2 (2–4 months)
   1. Cooing and laughter
   2. Characterized by comfort-state vocalizations, and chuckles

iv. Stage 3 (4–6 months)
   1. Vocal play
   2. Characterized by very loud and very soft sounds, yells and whispers, very high and low sounds—squeals and growls, raspberries (bilabial trills), and sustained vowels

v. Stage 4 (6 months and older)
   1. Canonical babbling
   2. Appearance of sequences of consonant-vowel syllables similar to adult timing, close to a word utterances, reduplicated babbles (bababa), and variegated babbles (bagidabu)
   3. Infant’s ability to hear his own and others’ vocalization takes on increased importance
   4. Vocalization of babies with deafness decreases

vi. Stage 5 (10 months and older)
   1. Jargon stage
   2. Babbling overlaps the early period of meaningful speech and is characterized by strings of sounds and syllables uttered with a rich variety of stress and intonation
   3. Sound play, containing recurring favorite sequences, or even words, may occur

p. A shared joint attention milestone
   i. By the last half of the first year, children begin to take part in a new type of interaction with their caretakers
      1. They share attention given to objects with another person by following that individual’s gaze or pointing, responding to the individual’s emotional reaction to an event, and imitating that person’s object-directed actions
      2. This gives adults who notice this behavior a chance to pair words with objects
   ii. First words or sounds are usually simple associates of objects or situations
      1. The infant simply voices a shared reference
   iii. Nelson and Shaw note that the leap from shared reference associations to meaningful language requires the child to integrate these skills with communicative patterns and conceptual knowledge
      1. Child is then standing on a first communicative step

IX. Infant Signaling/Signing
a. During the latter part of the first year, alert caregivers notice hand and body positions that suggest the child is attempting to communicate.
b. Researchers suggest parents pair words with easy-to-do gestures:
   i. At the age of one, children cannot gain enough mastery over their tongues to form many words.
   ii. Gesturing with their fingers and hands is simpler.
   iii. Use of signs continues until the child’s ability to talk takes off, and the researchers believe signing may spark other critical thinking skills and better intelligence quotient (IQ) scores when testing begins.
c. Toward the end of the child’s first year, pointing becomes goal-oriented:
   i. Infant will point to a desired object.
   ii. As time progresses, more and more infant body signaling takes place:
      1. Signals are used over and over, and a type of sign-language communication emerges.
      2. It can be a “signal and sound system” understood by caregivers.
      3. When caregivers respond appropriately, the infant easily progresses to word use and verbal aptitude.
d. Signing by infants and young toddlers is believed to stimulate brain development, particularly brain areas involved in language, memory, and concept development.
e. Some studies of communication gestures note that infants with more advanced gestures had larger vocabularies and that girls seem slightly more advanced in gesturing than boys.
f. Well-meaning parents or caregivers may choose not to respond to infant gestures and signals, thinking this will accelerate or force the use of words:
   i. Opposite is thought to be true.
g. Alert parents who try to read and receive signals give their infant the message that communication leads to fulfillment of wishes:
   i. Successful signaling becomes a form of language—a precursor of verbal signals (words).
   ii. Some experts believe baby signers by age two are better at both expressing themselves and understanding others’ speech and, on average, have slightly larger vocabularies than their peers who do not sign.
   iii. Sitting down at the child’s level at times when the infant is crawling from one piece of furniture to another may facilitate the adult’s ability to pick up on signaling.
   iv. Watching the infant’s eyes and the direction the infant’s head turns gives clues.
   v. Infants about eight months old seem fascinated with the adult’s sound-making ability.
1. They often turn to look at the adult’s lips or want to touch the adult’s mouth
2. Early childhood educators employed by infant-toddler centers need to know their center’s position regarding expected educator behaviors
3. Most centers expect educators to actively pair words with adult or child signs, encourage child use of signs, and learn and respond to each child’s individual sign language

X. Understanding
   a. Most babies get some idea of the meaning of a few words at about six to nine months
      i. At about ten months of age, some infants start to respond to spoken word clues
      ii. Somewhere between eight and thirteen months, the child’s communication, whether vocal or a type of gesture, becomes intentional as the child makes a connection between responses, his behavior, and parent or early childhood educator responses
         1. Game such as Pat-a-cake may start the baby clapping, and “bye-bye” or Peek-a-boo brings about other imitations of earlier play activities with the parents
         2. Child’s language is called passive at this stage, for he primarily receives (or is receptive)
         3. Speaking attempts will soon become active (or expressive)
         4. Vocabulary provides a small portal through which adults can gauge a little of what the child knows
         5. There is a point at which children expand nonverbal signals to true language
   b. Older infants still communicate with their caregivers through many nonverbal actions
      i. One common way is by holding up their arms, which most often means, “I want to be picked up”
      ii. Other actions include facial expression, voice tone, voice volume, posture, and gestures such as “locking in” by pointing fingers and toes at attention-getting people and events
      iii. Although infants at this stage can respond to words, changes in caregiver facial expressions, voice tone and volume, and actions and gestures also carry feelings and messages important to infants’ well-being
         1. Understanding the tone caregivers’ speech comes before understanding words

XI. First Words
   a. Before an understandable, close approximation of a word is uttered, the child’s physical organs need to function in a delicate unison and the child must reach a certain level of mental maturity
b. Close to 12 months of age, the speech centers of the brain have developed the capacity to enable the infant to produce his first word—a great accomplishment and a magical milestone
   i. Child’s respiratory system supplies the necessary energy
      1. As the breath is exhaled, sounds and speech are formed with the upward movement of air
      2. Larynx’s vibrating folds produce voice (called phonation)
      3. Larynx, mouth, and nose influence the child’s voice quality (termed resonation)
      4. Last modification of the breath stream is articulation—a final formation done through molding, shaping, stopping, and releasing voiced and other than voiced sounds that reflect language heard in the child’s environment

c. Repetition of syllables such as ma, da, and ba in a child’s babbling occurs toward the end of the first year
   i. If mama or dada or a close copy is said, parents and caregivers show attention and joy
   ii. Language, especially in the area of speech development, is a two-way process
      1. Reaction is an important feedback to action

d. Term protoword is often used for the invented words a child may use during the transition from pre-speech to speech
   i. During this transition, a child has acquired the difficult concept that sounds have meaning and is unclear only about the fact that one is supposed to find out what words exist instead of making them up

e. Generally, first words are nouns or proper names of foods, animals, or toys
   i. Words may also include “gone,” “there,” “uh-oh,” “more,” and “dat” (what’s that?)
   ii. Greetings, farewells, or other social phrases, such as “peek-a-boo,” are also among first recognizable words

f. Monolingual (one language) children utter their first words at approximately 11 months of age
   i. Range is from about 9 months to about 16 months
   ii. At about a year and a half, the child learns about one word every 3 days
   iii. Most experts believe that talking alone shows no link to mental development at age 2, but a child’s comprehension of words is paramount
   iv. Experts conclude little scientific evidence suggests that late talkers will become less fluent than early talkers
      1. Some children acquire large numbers of object names in their first 50 to 100 words
2. First spoken words usually contain p, b, t, d, m, and n (front of the mouth consonants), which require the least use of the tongue and air control.
   a. They are shortened versions, such as da for “daddy,” beh for “bed,” and up for “cup”
3. When two-syllable words are attempted, they are often strung together using the same syllable sound, as in dada, beebee.
   a. If the second syllable is voiced, the child’s reproduction of the sound may come out as dodee for “doggy” or papee for “potty”
4. At this stage, words tend to be segments of wider happenings in the child’s life.
   a. Child’s word ba may represent a favorite, often-used toy (such as a ball)
   b. As the child grows in experience, any round object seen in the grocery, for instance, will also be recognized and called ba.
   c. This phenomenon has been termed overextension.
      i. Child has embraced “everything round,” which is a much broader meaning for ball than the adult definition of the word.
g. Words frequently understood between 8 and 12 months of age:
   i. Mommy
   ii. Daddy
   iii. Bye-bye
   iv. Baby
   v. Shoe
   vi. Ball
   vii. Cookie
   viii. Juice
   ix. Bottle
   x. No-no
   xi. Child’s own name
   xii. Names of family members
h. Child finds that words can open many doors.
   i. Help the child get things and cause caregivers to act in many ways.
ii. Vocabulary quickly grows from the names of objects to words that refer to actions.
   1. Slowly decreases the child’s dependence on context (a specific location and situation) for communication and gradually increases the child’s reliance on words—the tools of abstract thought.
2. Children learn very quickly that words not only name things and elicit action on another’s part but also convey comments and express individual attitudes and feelings

XII. Toddler Speech

a. Toddlerhood begins, and the child eagerly names things and seeks names for others
   i. Child echoes and repeats to the best of his ability
   ii. At times, the words are not recognizable as the same words the caregivers offered
   iii. When interacting with young speakers, an adult must listen closely, watch for nonverbal signs, scan the situation, and use a good deal of guessing to understand the child and respond appropriately
   iv. Child’s single words accompanied by gestures, motions, and intonations are called holophrases
      1. Usually represent a whole idea or sentence

b. While the child is learning to walk, speech may briefly take a back seat to developing motor skill
   i. At this time, the child may listen more intently to what others are saying

c. Slow-paced learning of new words is followed by a period of rapid growth
   i. Child pauses briefly, listening, digesting, and gathering forces to embark on the great adventure of becoming a fluent speaker

XIII. Implications for Infant-Center Staff Members

a. Importance of understanding the responsive, reciprocal nature of optimal care giving in group infant centers cannot be overestimated
   i. Soothing, calming, swaddling, rocking, sympathizing, and responding behaviors of infant care specialists help infants maintain a sense of security and a relaxed state, calmness, and equilibrium

b. Weissbourd states that all children should have a continuous relationship with a consistently attentive and caring adult who treats them as special— and not just another inhabitant of this world—who is able to stimulate and engage
   i. Responsive mothers (those who ignore few episodes and respond with little delay) have infants with more variety, subtlety, and clarity in non-crying communications
   ii. Mothers who vocalize and smile frequently have been found to have infants who vocalize and smile frequently

c. Emotional well-being of infants has been given increased attention as research on infant development uncovers its importance
   i. Physician Chet Johnson states that the research shows how powerful emotional well-being is to a child’s future health
1. Baby who fails to meet certain key “emotional milestones” may have trouble learning to speak, read, and later, do well in school
2. By reading emotional responses, doctors have begun to discover ways to tell if a baby as young as 3 months is showing early signs of possible psychological disorders, including depression, anxiety, learning disabilities and perhaps autism
3. Instead of just asking if they’re crawling or sitting, we’re asking more questions about how they share their world with their caregivers

ii. At about four months, babies begin to gaze in the direction in which caregivers are looking
   1. Caregivers are able to follow the line of vision of babies as well
   2. Well-trained caregivers will naturally comment and offer language labels and a running commentary
   3. Process is known as “joint attentional focus”
      a. When the adult knows the infant does not yet understand language, most adults behave as if a child’s response is a turn in the conversation

iii. Adult caregivers need to read both nonverbal and vocalized cues and react appropriately
   a. They need to be attentive and loving
   1. Learning to read each other’s signals is basic to the quality of the relationship
      b. Liberal amounts of touching, holding, smiling, and looking promote language and the child’s overall sense that the world around him is both safe and fascinating
   2. Recognizing the child’s individuality, reading nonverbal behaviors, and reacting with purposeful actions are all expected of professional infant specialists, as is noticing activity level, moods, distress threshold, rhythms of the body, intensity, sense of adventure, distractibility, adaptability, and attention span

iv. There are many skills that well-trained caregivers possess beginning with holding the infant firmly yet gently, and making soft, gentle sounds while moving smoothly and holding the infant close
   1. An attuned adult:
   2. Talks in a pleasant, soothing voice
      a. Use simple language
      b. Make frequent eye contact
   3. Emphasizes and expect two-way “conversation”
      a. Hesitates
b. Pauses for an infant response
4. Makes a game out of the infant’s smiles, sounds, and movements when the infant is responsive
5. Speaks clearly
6. Explains what is happening and what will happen next
7. Is consistently attentive
8. Does not interrupt vocal play, jargon, or self-communication
9. Engages in word play, rhyme, chants, and fun-to-say short expressions
10. Is an animated speaker and a responsive companion
11. May with an older infant attempt to offer simple finger plays
12. Plans real and concrete, participatory activities with textures, sights, and sounds
13. Encourages sound making and provide noise-making and musical toys
14. Labels objects, happenings, actions, and emotions
15. Uses highly intonated speech that may be high-pitched at times with very young infants
16. Speaks distinctly with clear enunciation to help children identify phonemes
17. Emphasizes one word in a sentence at times
18. Uses repetition but avoids overdoing it
19. Gives feedback by responding with both words and actions
20. Creates and pursues game-like strategies and techniques
21. Serves as a co-explorer
d. Being playful and initiating “singing conversations” with infants can be enjoyable and may lay the foundation for later music activities
  i. Both recorded and live musical sounds are part of an auditory-rich environment for infants
e. Williams urges caregivers to explore the world outside the classroom or home with older infants and toddlers
  i. States that teachers can support children’s explorations and interactions with the natural world much as they support other learning:
    1. With the belief and hope that each child will be encouraged to become a geologist, biologist, zookeeper, veterinarian, or preschool teacher, regardless of how dirty the job may be
f. Think about watching or feeling raindrops, experiencing mud, or touching a caterpillar, or smelling flowers, and hearing birds
i. Reality and beauty of natural landscapes surrounds us and there are multiple ways to experience it safely with infants and toddlers

g. Remember that infants are alike yet uniquely different
   1. Some sensitive infants may appear overwhelmed and require little stimuli to maintain equilibrium
   2. Others will thrive in an environment that provides a multitude of people, sights, sounds, and new activities
   3. Each infant provides a challenge one must “puzzle out” to decide best courses of action—what works, what does not work, and what is best

ii. Because infants’ first sensory experiences are part of emotional relationships with caregivers, caregivers’ efforts to provide developmental care go hand in hand with providing positive emotional support in daily reciprocal exchanges between the child and adult
   1. Terms child-centered and child-focused need to be coupled with reactive, observant, playful, and nurturing adult behaviors
   2. This type of infant care is nearly impossible when adult-infant ratios in out-of-home care are inadequate

iii. Generally, the types of adults who promote language are those who are alert to the child’s achievements, notice them, and enjoy interacting, as well as adults who can offer novelty, assistance, and enthusiasm in addition to focusing on the child’s interests

iv. Clark suggests adults view young children as being actively engaged in search for meaning
   1. Besides being increasingly competent communicators, they are also avid researchers and explorers of their environment

XIV. Baby Games and Explorations

a. Almost daily, infants seem to increase the ways they can explore and enjoy verbal-physical games
   i. Most mothers or infant educators create their own games and activities that are enjoyable to both infants and caregivers
      1. They become aware of their infants’ focus and reactions to people, toys, and other environmental features
      2. They then build activities and interactions on child interest

b. Games that deal with child anticipation often elicit smiles or giggles
   i. Playing classics such as Peek-a-boo or Johnny Jump Up or hiding an object under a cloth has delighted generations of children
   ii. Tying a soft tinkling bell to the wrist or leg of an infant or connecting a soft ribbon from an infant’s ankle to an overhead
mobile (under adult supervision) are more newly devised activities
c. Experts recommend that, from a baby’s earliest days, caregivers begin with simple imitation games during face-to-face interaction, making sure to pause long enough for the infant to take in the information and mount a response
   i. Best distance for these games is 8-12 inches from the child’s face
d. Imitation of the baby’s movement is also suggested, as is rewarding the baby’s efforts with attention or smiles
e. Caregivers spend considerable time supervising active infants, and it usually takes little effort to supply brief running remarks
   i. Pausing is as important as talking
      1. A caregiver who has primarily a policing orientation that is full of “no-no’s” and little else, misses tremendous language building opportunities
f. Obvious that infants six months and older watch, imitate, and attempt physical and verbal contact with other infants and children
   i. There is a strong attraction to other small people and animals
   ii. Most young infants prefer to be in the same room with a favored caregiver
      1. Only as they become mobile and older do they explore other people, adjacent rooms and areas on their own
g. Most-enjoyed play activities include:
   i. Tickling
   ii. Bouncing
   iii. Lifting with accompanying words and rhymes

XV. Play Activities
a. This Little Piggy
b. Pat-a-cake
c. So Big
d. Musical play
   i. Music, singing, and musical expression appear to be a central part of the crucial interaction that occurs between caregivers and infants as infants develop over the first year of life
   ii. Two types of musical and singing interactions by adults usually takes place:
      1. Lullaby style and/or soothing go-to-sleep variety
         a. Seen as caregiver attempts to regulate or promote a particular infant state
      2. Playful, upbeat adult behavior which might be described as rhythmic, and joyful
         a. Seen as communication of emotional information
   iii. Common sense tells us certain musical experiences enrich infants’ lives and may soothe both infants and caregivers
1. Experts believe babies as young as three months can distinguish between certain melodies.

2. Musical infant babbling may be described as both “tonal babble and rhythmic babble”
   a. Tonal babble is babbling in a single pitch, the babble sounding like a monotone singer.
   b. In rhythmic babble, the child’s body or voice displays a rhythmic beat or quality.

iv. Much of the music offered to infants may be accompanied by the mother’s singing:
   1. Nursery, cultural, and folk tunes can be introduced in intimate, pleasant settings.
   2. Simple, safe musical instruments are enjoyed, and moving to music is natural to young children.
   3. Wolf suggests educators start with songs they love, ones sung to them as children.
      a. Others suggest recorded children’s music, and well-known performers and producers of young children’s music.
      b. Names like Raffi, Ella Jenkins, Hap Palmer, Tom Hunter, and others are familiar to most early childhood educators.

4. Some educators recommend Bach preludes and Vivaldi’s “Springtime Symphony” along with other classical pieces.

v. One benefit of musical activities for older preschoolers and primary children is enhanced abstract and spatial-temporal reasoning.

vi. Scientists are finding that the human brain may be “pre-wired” for music.
   1. Suspect that some forms of intelligence are enhanced by music.

vii. Although controversial at present, some educators believe learning musical skills in childhood can help children do better at mathematics.
   1. Only more studies with more children will prove whether music produces lasting benefits in cognition.

XVI. Reading to Infants:
   a. Some parents read books during a mother’s later stages of pregnancy
      believing the practice will affect some positive results.
      i. Research findings suggest that infants remember and give greater attention to stories read to them before their birth.
      ii. Conclusive research evidence is yet to verify this.
   b. Zambo and Hansen suggest from birth to three months read-alouds are purely an emotional connection between infant and caregiver.
i. Being held, feeling good, and having a familiar, conforming voice are more important than the kind of book or the content of the story
ii. Lullabies, singsong stories, and other repetitive, rhythmic experiences bring joy and comfort to infants and establish a special time together for child and caregiver

c. Between 6 and 12 months, some infants will sit and look at a picture book with an adult
   i. In the sound of the reader’s voice that gets the young child’s attention even before the child’s focus shifts to the pictures
   ii. Warmth and security of being held and the reader’s voice make for a very pleasurable combination
   iii. Child may want to grab pages and test the book in his mouth or try to turn pages
   iv. His or her head may swivel to look at the adult’s mouth
   v. If the child has brought a book to the adult, he will usually want to sit on the adult’s lap as both go through the book
   vi. Child gets ever more adept at turning pages as his first birthday nears
   vii. Familiar objects in colorful illustration set on white or plain backgrounds and large faces seem to be particularly fascinating
   viii. Infants seem to respond well to and enjoy the rhyme they hear
d. Adults reading to infants younger than 12 months of age is increasingly recommended for researchers believe the infant is learning about the sound patterns in words and how words are formed
e. Book-reading techniques
   i. Reading something the adult enjoys with average volume and expression
   ii. Using gesturing or pointing when called for
   iii. Promoting child imitation
   iv. Letting the child turn sturdy pages
   v. Making animal or sound noises
   vi. Stopping before the child’s interest wanes
f. Adults may find that many infants enjoy repeated reading of the same book during the same sitting
   i. Some parents are very adept at sharing picture books
      1. These parents find cues in book features such as familiar objects, events depicted, sounds, colors, etc. that give the infant pleasure
   ii. Skilled early childhood educators realize it is the colorful illustrations that attract, so they name and point to features
      1. They also attempt to make illustrations relevant to the child’s past experience
      2. Colorful books with sturdy or plastic-coated pages or cardboard books are plentiful
3. Books of cotton fabric and ones with flaps to lift and peek under, soft furry patches to feel, rough sandpaper to touch, and holes to look through or stick a finger through are books that include enjoyable sensory exploration
4. Homemade collections of family photographs have delighted many young children
5. A picture book with simple, large illustrations or photos that are set against a contrasting background, or a book that is constructed to stand on its own when opened are also popular

iii. There are a number of literary classics that most children in our culture experience
   1. Many of these involve rhyme and rhythm and have, over time, become polished gems passed on to succeeding generations, such as:
      a. “Here We Go Round the Mulberry Bush”
      b. “One, Two, Buckle My Shoe”
      c. “Hush-a-Bye Baby”
      d. “Twinkle, Twinkle, Little Star”
      e. “Rock-a-Bye Baby”
      f. “Ba Ba Blacksheep”

XVII. Recordings
   a. Growing numbers of CDs, tapes, and videos are being produced for infants. Infants listen and sometimes move their bodies rhythmically
   b. Research is yet to confirm the educational or language-developing benefits claimed by manufacturers of infant recordings whether audio or visual
      i. Interlandi reports that a new study suggests watching babies fared worst with DVDs than with several other types of programming studied
         1. Exposure to educational shows, like “Sesame Street,” and non-educational ones, like “SpongeBob SquarePants,” had no net effect on language
            a. But for every hour that infants 8 to 16 months spent watching the baby DVDs, they understood six to eight fewer words, out of a set of 90, than infants who didn’t watch
            b. For 17- to 24-month-olds, there was no net effect

XVIII. Early Experience with Writing Tools
   a. As early as 10 to 12 months, infants will watch intently as someone makes marks on a surface or paper
      i. They will reach and attempt to do the marking themselves
      ii. Large chalk and thick crayons or large crayon “chunks” are recommended for exploring, but caregivers are reminded to supervise closely because of infants’ tendency to put small objects in their mouths
iii. Large-sized paper (torn apart grocery brown bags) taped at the edges to surfaces and chalk-boards work well

b. Child may not realize the writing tool is making marks but may imitate and gleefully move the whole arm
   i. Many believe it is simply not worth the effort to supervise very young children during this activity and save this activity until the children are older

XIX. Monitoring Infant Development
   a. Stark and associates point out normal paths of development within various domains serve as reference points to assess infant competence
      i. Number of factors in an infant’s life influence the child’s overall development, communication abilities, and language growth
   b. Early educators are aware that a mother’s prenatal health, diet, the home environment, and other life circumstances may have caused biological problems such as premature birth, low birth weight, a disability, or a regulatory disorder
      i. After birth, factors such as maternal depression, poverty, family homelessness, stress, family care giving behaviors, and lack of family support systems, may affect children’s emotional, physical, intellectual, social development and competence
      ii. Early childhood programs recognize family-school communications and interactions can be crucial.
         1. Establish working relationships with families and a variety of community network and support agencies
   c. Infant assessments undertaken by educators try to identify strengths and developmental areas where the infant and/or family may need supportive assistance to promote optimal infant growth
      i. Maternal health histories sometimes provide clues, as do home visits, and daily or periodic educator-family interactions
      ii. Examination of whether the school’s schedules, activities, staff and curriculum need to change or adapt takes place frequently so that each child’s individual needs have every chance of being met
   d. Daily monitoring with an eye to each infant’s developmental milestones and mental and physical health is necessary, as is, educator of knowledge of ages and stages
   e. In a busy center, taking dated notes is suggested as new, questionable, or important behaviors are observed
      i. Notepad in a handy pocket is recommended, as is, frequent staff meetings to discuss individual infant language behaviors and developments
      ii. This is followed by planning sessions that create individual learning plans and family consultation when necessary
   f. Eiserman and associates note hearing loss may be an ‘invisible’ condition especially for infants and toddlers with moderate, mild, or
unilateral hearing losses because these children may not exhibit observable symptoms of loss until they are older

i. Before the use of physiologic screening tools, infants with hearing loss typically remained unidentified until 2 ½ years of age, far too late for optimal language development

ii. Dramatic improvements in hearing screening technology and growth in the number of hospitals that do at-birth screenings have occurred in the past ten years

iii. Educators realize hearing loss can occur at anytime either swiftly or gradually

iv. American Speech-Language-Hearing Association estimates approximately 35% of preschoolers (including infants) will have repeated episodes of ear infection that nearly always cause a temporary loss that can significantly disrupt language acquisition
   1. Screening hearing during infancy and beyond is a recommended practice, as is, caregiver vigilance

XX. Implications for Families

a. Family attitudes about their infant’s communicating abilities may influence the infant’s progress
   i. Family expectations and feelings shape their responses to infants
   ii. These attitudes are the early roots of the critical partnership between adult and child, and the child’s sense of feeling lovable and powerful
   1. Consequently, they influence the child’s assessment of self

b. Special infant projects that have promoted later school success have provided information in this area
   i. Positive home factors mentioned include:
      1. A lot of attention by socially responsive caregivers
      2. Little or no disruption of bonding attachment between the infant and his primary caregiver during the first year
      3. Availability of space and objects to explore
      4. Good nutrition
      5. Active and interactive exchanges and play time
      6. Parent knowledge of developmental milestones and the child’s emerging skills
      7. Parent confidence in infant handling
      8. Maintenance of the child’s physical robustness
      9. Positive attention and touching in play exchange

b. Parent (or family) stress and less-than-desirable quality in child-parent interactions seem to hinder children’s language development
   i. Because most families face stress, a family’s reaction to stress, rather than stress itself, is the determining factor
ii. In today’s busy families, parent time spent with babies and young children needs to remain a family priority

iii. Good advice for parents and families includes not worrying about teaching as much as providing a rich and emotionally supportive home atmosphere

1. A rich atmosphere is one that offers opportunity, rather than expensive toys and surroundings
   a. Current research indicates that parents who spontaneously speak about what the child is interested in and who zoom in and out of the child’s play as they go about their daily work are responsive and effective parents
   b. Families should know that early and late “talkers” usually show little difference in speaking ability by age three
   c. Variation between children with respect to the onset and accomplishment of most human characteristics covers a wide range when considering what is normal and expected

iv. Munier and Rose state that healthy infants as young as 6-8 months do communicate and respond nonverbally to social cues

1. Most look up or turn at the sound of their name
2. By 12 months, they typically babble and point at objects
3. By 16 months, they say single words
4. By 24 months, two-word phrases
5. In contrast, children with autism seldom make meaningful eye contact or respond to familiar voices
   a. They may never speak
   b. Their play is often repetitive and characterized by limited imagination
   c. Others may simply flap their hands in excitement or disappointment.
   d. On their own, none of these signs means a child has autism or another development disorder
      i. Nevertheless, if a child has any of these signs, he or she merits evaluation

v. Regardless of the setting, the experts agree the primary need of infants and toddlers is emotional connection

   a. Human relationships are the key, and emotional development is critical for growth

vi. Children of the poor, who are considered to be at-risk, may escape at-risk status if they share the following commonalities:

1. They live in large, extended families that provide supportive language-stimulation and encouragement
2. No other social/biological risks are present
3. Their families manage to safeguard their infants’ and older children’s health
4. Intervention and social service programs may also have been accessible
vii. It is the isolated poor families with multiple risk factors, including abusive home environments, whose children are the most negatively affected