

Literature Reviews: Child Welfare, Curriculum Design and Child Development



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Literature Review on Child Maltreatment

Child abuse and maltreatment is an alarming problem nationwide with 702,000 victims reported to child protective services (CPS) in 2014 alone (U.S. Department of Health & Human Services). The Child Abuse and Prevention Treatment Act (CAPTA), passed by Congress in 1974, provides guidance for state and county child welfare systems by identifying a set of acts or behaviors that define child abuse and neglect (Child Welfare Information Gateway, 2016). However, many cases of abuse and neglect are not reported because adults are unable to recognize immediate signs of the harm and children do not have appropriate social cues to express the problem (Hopper, 2015). A recent U.S. study found the total lifetime estimated financial costs (childhood health care, productivity losses, child welfare, criminal justice, special education, and cost per death) associated with just one year of confirmed cases of child maltreatment is approximately \$124 billion. (Centers for Disease Control and Prevention, 2014; Fang et. al, 2012). Thus, child abuse and child maltreatment remain an ongoing problem for the United States.

Under Title 8 of the Arizona Revised Statutes, the State of Arizona recognizes these types of abuse: physical, emotional, sexual, as well as neglect. Broadly defined, physical abuse is the infliction of physical injury by various methods, even if the perpetrator does not intend harm. Child neglect is the failure to provide for the child's basic needs and can be physical, educational, or emotional. Sexual abuse is defined as sexual conduct with a minor, child molestation, and exploitation including prostitution and pornography (A.R.S. § 8-201). Emotional abuse is the infliction or allowing another person to cause serious emotional damage as

evidenced by severe anxiety, depression, withdrawal or untoward aggressive behavior and which emotional damage is diagnosed by a medical doctor or psychologist and is caused by the acts or omissions of an individual who has the care, custody and control of a child, (A.R.S. § 8-201), causing serious behavioral, cognitive, emotional, or mental disorders (Thomas et al., 2004). Bullying, intentional physical and/or emotional harm repeatedly and over time, can be inflicted by peers, older children or adults (CDC, 2014). Of the children who experienced maltreatment or abuse, nearly 80% suffered neglect; 18% suffered physical abuse; and 9% suffered sexual abuse. Approximately 80% of reported child fatalities are a result of abuse and neglect caused by one or more of the child victim's parents. The United States has one of the worst records among industrialized nations losing between four and seven children every day to child abuse and neglect (U.S. Department of Health and Human Services, 2014).

The impact of child abuse and neglect is far ranging and depends on a variety of factors including: (a) age and developmental stage of the child; (b) extent and type of abuse or neglect; (c) the child's relationship to the abuser; (d) how the abuse or neglect was responded to if discovered or disclosed; (e) the child's personality traits and inner strength; (f) support received by those around him/her; and, (g) the child's perceptions of threat at the time of and following the event (Lamont, 2010). Children who experience physical abuse may or may NOT have visible signs of abuse; however, their behaviors may include learning difficulties, brain damage, fear of adult contact, arriving early at school and staying late, mistreating animals, becoming aggressive or self-destructive (Child Welfare Information Gateway, 2013).

Physical indicators are generally symptomology of the emotional trauma associated with sexual abuse including shame, guilt and fear of potential repercussions of disclosure.

Most sexually abused children experience this abuse at the hands of a trusted adult who is often skilled at manipulating and frightening the child into silence (Snyder, 2000). Child victims of emotional abuse may display speech delays, lack of attachment to parents or caregivers, frequent somatic complaints, overeating, substance abuse, depression, and/or suicide attempt (Child Welfare Information Gateway, 2013). Children are more likely to be victims of neglect than other types of abuse and may display a wide range of behaviors based on the type of neglect they experience such as unmet physical or medical problems, poor hygiene, hunger, lack of supervision, and/or learning difficulties (Spratt et al., 2012).

Children of neglect and/or abuse perform more poorly than their non-maltreated peers, including being rated lower by their teachers, scoring lower on cognitive assessments and standardized tests of academic achievement (language arts and mathematics), obtaining lower grades, getting suspended from school and held back more frequently (Slade & Wissow, 2007). At school, the behavioral consequences of abuse and neglect will most likely be the most problematic; some children may have difficulty following rules, being respectful, staying in their seats and on task, paying attention, controlling their tempers, and establishing healthy peer relationships.

As children become older, they are more likely to engage in self-destructive behaviors such as stealing, truancy, smoking, sexual risk-taking, alcohol and

substance use, and/or suicidal ideation or attempts (Slade & Wissow, 2007). Data show that children who experience child abuse and neglect are about 9 times more likely to become involved in criminal activity; 60% more likely to be arrested as juveniles; and 30% more likely to be involved with violence by entering into violent relationships as teens and adults or abusing their own children. Fourteen percent of all men in prison and 36% of women in prison in the U.S. were abused as children, about twice the frequency seen in the general population (National Council on Child Abuse and Family Violence, 1998).

Risk factors for child abuse and neglect include individual risk factors such as parents' lack of understanding children's needs, parents' history of child maltreatment in family of origin, substance abuse and/or mental health issues, parental characteristics such as young age, low education, single parenthood, large number of dependent children, and low income. Additionally, there are family and community risk factors such as social isolation, intimate partner violence, parenting stress, community violence, and concentrated neighborhood disadvantage. While not studied as extensively or rigorously as risk factors, numerous protective factors have shown evidence of buffering children from maltreatment. According to the CDC (2014), these protective factors include supportive family environment, nurturing parenting skills, stable family relationships, access to health care and social services, caring adults outside the family who serve as role models or mentors, and communities that support parents and take responsibility for preventing abuse.

Research shows that child sexual abuse (CSA) prevention efforts consist primarily of school-based programs, with more than 85% of the elementary school districts in the United States offering programs yet there is very limited rigorous research evaluation of their efficacy (Pulido et al., 2015), especially “attempts at establishing relationship between acquisition of knowledge about child sexual abuse and subsequent behavior change in children” (Thomas et al., 2004, p. 16). For example, second and third graders who participated once in a 50-minute workshop showed significantly greater improvement than the control group on knowledge of inappropriate touch in a study conducted in New York City (Pulido et al. 2015). In addition to targeting children in primary prevention, “awareness must be integrated into our social-ecological framework” (Pulido, 2015, p. 1349). “Longitudinal studies must be developed to measure the impact of prevention efforts across social-ecological domains, including families and the education, public health, and criminal justice systems” (Pulido et al., 2015, p. 1349).

Thomas et al. (2004) acknowledge that much progress has been made in the idea of prevention as a concept, yet prevention efforts in the field of child maltreatment are still limited in scope and results.

New technologies have also allowed abuse to flourish, including online cyberbullying affecting approximately 34% of 11-15 year olds (Cyberbullying Research Center, 2015). It is estimated that 95% of teens are online with three in four teens access the internet on cell phones, tablets, and other mobile devices. (Pew Research Center, 2014). A study funded by Macy’s Inc. showed that “investments in prevention support healthy child development and lower the number of children

affected by abuse and neglect, and the financial cost to our nation in turn” (Gelles et.al, 2012, p. 1).

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Literature Review on Curriculum Design

Curriculum is “anything and everything that teaches a lesson, planned or otherwise” (Wilson, 1990, “Types of Curriculum,” para. 5). It can be deductive, going from the general to the specific; or it can be inductive, starting with the development of curriculum materials and leading to generalization. Some researchers use the “four families of learning theories to classify curriculum: social, information processing, personalist, and behavioral” (Wilson, 2006, “Types of Curriculum,” para. 3). “Longstreet and Shane (1993) use curricular orientations: child-centered, society-centered, knowledge-centered, or eclectic” (Wilson, “Types of Curriculum,” 2006, para. 3). “Philosophical orientations include idealism, realism, perennialism, essentialism, experimentalism, existentialism, constructivism, and reconstructivism” (Wilson, 2006, “Types of Curriculum,” para. 3). Curriculum in the U.S. has been impacted by all of the above at some time or another making it hard to describe because “it is multi-layered and highly eclectic” (Wilson, 2006, “Types of Curriculum,” para.3).

Multiple models of curriculum have been identified by researchers. In Olivia and Gordon’s book, *Developing the Curriculum* (2012) three models commonly used for curriculum are identified: (1) Tyler Model – deductive, general objectives gathered from learners, contemporary life outside school and subject matter and filtered through philosophical and psychological screens; (2) Taba Model – inductive approach, created by teachers rather than handed down by higher authority using specific teaching-learning units; (3) Oliva Model – deductive model, designed by an

entire faculty that recognizes the needs of students of its particular community with focus on interdisciplinary programs.

Additionally, Wilson (2006) describes eleven types of curricular models used in schools: (1) Overt, explicit or written curriculum – that which is written (found in a curriculum document, including texts, films, supportive teaching materials); (2) Societal curriculum - that which includes family, peer groups, neighborhoods, churches, organizations, mass media, and social media; (3) Hidden or covert curriculum – the kinds of learning children acquire from the structure or organizational design of schools as well as from behaviors and attitudes of teachers and administrators; (4) Null curriculum – that which is not taught, sending a message that it is not important; (5) Phantom curriculum – messages presented in and through any type of media; (6) Concomitant curriculum – what is taught or emphasized at home, including values, ethics, morals, based on family’s preferences; (7) Rhetorical curriculum – ideas offered by policy makers, school officials, administrators, and professionals involved in updating content and pedagogy, often based on national and state reports; (8) Curriculum-in-use – the actual curriculum that is taught; (9) Received curriculum – what the students actually take out of the classroom, what they learn and remember; (10) Internal curriculum – processes, content, and knowledge combined with experiences and realities of the learner to create new knowledge; and (11) Electronic curriculum – what students learn through searching the Internet or using e-forms of communication (Wilson, 2006, “Types of Curriculum,” para.6).

Brain-based Learning and Learning Theory

Adapted from the 2010 book, *How Learning Works: Seven Research-Based Principles for Smart Teaching*, the Eberly Center at Carnegie Mellon developed a list of foundational principles for effective learning. The first, *students' prior knowledge can help or hinder learning*, focuses on the notion that students come to courses with "knowledge, beliefs, and attitudes" that they have acquired in other courses and in their life experiences (Eberly Center, 2010, "Principles of Learning," para. 1). Their perspectives influence how they filter new learning. When students come with strong and accurate prior knowledge, they can more easily build on it; when their prior knowledge is weak, inaccurate, or non-existent, it can interfere with new learning. A second principle, *how students organize knowledge influences how they learn and apply what they know*, refers to how students make connections between pieces of knowledge (Eberly Center, 2010, "Principles of Learning," para. 2). Knowledge structures that are accurate and meaningfully organized help students retrieve and apply what they are learning appropriately; if students' organization patterns are random, it is more difficult for them to make connections between new and prior learning. The third principle is *students' motivation determines, directs, and sustains what they do to learn* (Eberly Center, 2010, "Principles of Learning," para.3). When students find value in what they are learning, expect to be able to accomplish the outcome successfully, and are supported positively in their environment, they become motivated to learn. *To develop mastery, students must acquire component skills, practice integrating them, and know when to apply what they have learned* is the fourth principle (Eberly Center, 2010, "Principles of

Learning,” para. 4). Students must know what the skills are, practice combining and integrating them to develop fluency and automaticity, and learn when and how to apply them. The fifth principle is *goal-directed practice coupled with targeted feedback enhances the quality of students’ learning* (Eberly Center, 2010, “Principles of Learning,” para. 5) When practice and feedback are aligned and focused on a specific goal or task, students are more likely to meet learning targets. A sixth principle, *students’ current level of development interacts with the social, emotional, and intellectual climate of the course to impact learning*, recognizes developmental characteristics of students and highlights the role of the teacher in creating a positive learning climate that promotes learning (Eberly Center, 2010, “Principles of Learning,” para. 6). The final principle, *to become self-directed learners, students must learn to monitor and adjust their approaches to learning*, refers to the meta-cognitive processes that learners engage in to monitor and control their learning (Eberly Center, 2010, “Principles of Learning,” para. 7). These processes often have to be taught and practiced until they become ingrained as students work to improve their performance and effectiveness as learners (Ambrose et.al, 2010); Leinhardt, 1992).

Curriculum Development Process

“Curriculum development is a complex process marked by divergent and convergent thinking processes” (Wilson, 2006, “The Instructional Design,” para.1). In addition to identifying the philosophy(ies) and model(s) that will be used in curriculum design, there are three specific components to consider. The first is *content* – *what* knowledge, skills, processes, and attitudes will students learn and

develop? (Wilson, 2006). This encompasses aims, goals, and objectives as well as various taxonomies such as Bloom's (1964) revised for the cognitive domain, Krathwohl's (1964) for the affective domain, and Harrow's for the psychomotor domain. The second component is *organization* – how the curriculum is best laid out to be delivered, identifying minimal components for implementation and who should be involved in creating the tone of the curriculum or selecting the learning theories that drive it (Wilson, 2006). Curriculum assessment focuses on *evidence* - what students will do to demonstrate their learning. (Wilson, 2006). This aspect includes how best to assess, identifying data traditional tests and quizzes, performance tasks and projects, observations and dialogues, as well as students' self-assessments gathered over time) that indicates the curriculum is effective, who is responsible for collecting the data and determining how to use it to improve future curriculum development (Wilson, 2006).

For the past 20 years, the backward-by-design method of curriculum development espoused by Wiggins and McTighe (2005) has become very popular and is used across the nation by educators as a framework in crafting curriculum. It begins with a vision in mind of learners at the end of an educational experience. Curriculum developers engage in three stages during the process although they may move back and forth between stages: (1) they begin the process by determining what is “worthy and requiring of understanding;” (2) next they identify evidence of understanding and methods of gathering it; and (3) finally, they plan learning experiences and instruction to promote understanding, interest, and excellence (Wilson, 2006, “Creating Curriculum,” para.3). It refocuses instructors on learning

first, not teaching; results instead of a content-driven design. Rather than using an activity-based or coverage-based-approach, curriculum designers using this model have to think about assessment first before deciding what and how they will teach.

Models of Teaching

Models of teaching are “the ways in which learning environments and instructional experiences can be constructed, sequenced, or delivered” (Wilson, 2006, “Models of Teaching,” para.1). There are hundreds of models that help educators to increase their teaching repertoires, reach more students effectively, provide curricular focus by matching learning outcomes to targeted learning populations, identify why some methods work with some learners and others do not, and modify or redesign teaching and instructional methods to better meet the needs of their students (Wilson, 2006; Joyce et al., 2014). The models provide “theoretical or instructional frameworks, patterns, or examples for any number of educational components” (i.e., curricula, teaching techniques, instructional groupings, and others), with some being discipline or student-population specific” (Wilson, 2006, “Models of Teaching,” para.1).

A wide array of teaching systems, each based on a distinctive philosophical foundation or theory of learning with related pedagogical methodologies, is represented by these teaching models (Wilson, 2006). “Most models fit *loosely* into one of five families of educational psychology: social, information-processing, personal, behavioral, or constructivist” (Wilson, 2006, “Models of Teaching,” para.4). While there is no one-size fits all model of teaching, no one particular model is

appropriate for all instructional purposes either (Wilson, 2006). Teachers must examine and practice using multiple models in order to reach their students successfully. Cooperative learning, group investigation, jigsaw, laboratory method, role playing, and social inquiry are examples of models that fit the social learning category (Wilson, 2006). Examples from the information processing category include advance organizers, concept attainment, learning styles, multiple intelligences, inductive thinking/inquiry training, synectics, and Taba's inductive reasoning models (Wilson, 2006). Nondirective teaching, developing positive self-concepts, relaxation and stress reduction, and selection, detection, connection model comprise the personal category of models of teaching (Wilson, 2006). Behavioral models are comprised of direct teaching, direct training, Hunter model, mastery learning, and self-control (Wilson, 2006). Constructivist models can be problem- or project-based models where learners construct their own understanding which is enhanced by social interaction, authentic learning tasks, and attention to connections between learners' prior knowledge and the new learning (Wilson, 2006). Holistic learning, Paideia, positive interdependence, problem solving, and Socratic Method are examples from this category (Wilson, 2006). Teaching models can be used in combination or as stand-alone formats for instructional delivery.

Making Instructional Decisions

Teachers make hundreds of instructional decisions before, during, and after a teaching event. They have to engage in a reflective process of asking and answering

questions about what they are doing to help students learn. Wilson notes four important considerations that require specific answers from teachers: (1) their end vision of the learner (what students will know, be able to do, understand, and the level of mastery); (2) the nature of the content and concepts they are responsible for teaching; (3) their own teaching style (what they are comfortable doing); and (4) knowledge of their students (learning styles, instructional preferences, educational, social, cultural backgrounds) (Wilson, 2006, "Making Instructional Decisions," para.3). Teachers also need to think about the size of their class, time allotments, importance of the information or skill in the relation to the bigger picture of the curriculum, and availability of ancillary materials. (Wilson, 2006). Finally, teachers must choose the best methods of instructional delivery, selecting the appropriate model(s) of teaching to use (Wilson, 2006).

Student Engagement Principles

Student engagement is a central aspect of effective teaching – no student engagement, no learning! When students come to a learning task, they think about and ask themselves questions that determine whether or not they participate. The first set of questions, "How do I feel? Am I interested?" is about attention, a short-term phenomenon, ranging in a couple of seconds to a few minutes. (Marzano et al., 2011) The second set of questions, "Is this important? Can I do this?" deals with the student's perception of the course/task goals as related to his/her own personal goals and sense of self-efficacy. (Marzano et al., 2011) Affirmative answers to these questions activate engagement. The teachers' roles include asking themselves parallel questions: Do I have their attention? Are they engaged? Teachers can raise

the emotional tone of the class by showing interest, structuring game-like activities, providing unusual information, and using effective questioning strategies to garner students' attention. To help participants recognize the importance of the content and raise their sense of efficacy related to content, teachers can ask participants to clarify or justify their assertions, provide connections leading to real-world application, and/or use practice and roll plays where participants see themselves using the strategies and skills in the near future (Marzano et al., 2011).

Components of Effective Prevention Curricula

Researchers conducted a meta-analysis across four domains (substance abuse, risky sexual behavior, school failure, and juvenile delinquency and violence) and identified and grouped characteristics of effective prevention program into three categories: (1) program characteristics; (2) program match to target population; and (3) implementation and evaluation (Nation et al., 2003). Under the first category, they noted that programs needed to be comprehensive (having multiple interventions addressing problem behaviors and multiple settings such as community, family, school, peer group); program curricula need to involve “interactive instruction and provide active, hands-on experiences,” (Nation et al., 2003, p. 451); be of sufficient dosage (length, number of sessions, spacing of sessions, duration of whole program); be theory driven, looking at both etiological and intervention theories; and provide children opportunities to “develop strong, positive relationships consistent with positive outcomes” (Nation et al., 2003, p. 453). In the second category, interventions need to be appropriately timed, taking

place when they will have the most impact in a child's life, and they also need to be socioculturally relevant, focusing on the norms, values, and beliefs of the local community (Nation et al., 2003). Characteristics of effective programs in the third category include program evaluation which needs to be on-going to determine effectiveness and provide feedback to improve the quality of the intervention as well as having staff members who are competent and well-trained. These characteristics of effective programs can be used as guidelines for future prevention efforts.

Another factor that impacts prevention program effectiveness is teacher fidelity of implementation of curricula. In a study conducted by Ringwalt et al. (2003), the authors found that only about 15% of the teachers followed a guide closely while teaching a substance use prevention curriculum, while about 20% did not use a curriculum guide at all. Factors associated with adherence to the guide included teachers' beliefs concerning the effectiveness of the training they received and the curriculum, and the level of support they received from their administrator regarding the importance of the program. This has implications for prevention program implementer training and how programs are championed in a school or district if that is the setting for implementation.

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Literature Review on Child Development

There is a vast amount of research linking the importance of nurturing children from infancy through adolescent years in positive, supportive environments to ensure healthy growth and development. Parents are a child's first teacher and they have a significant role on their children's short-term and long-term learning outcomes. Children who receive responsive and consistent care early in life are more likely to develop secure attachments to their parents and/or caregivers. These positive relationships are crucial because they positively impact their children's social, emotional and cognitive development. Each stage of a child's life presents significant levels of development that require adult care and attention to ensure that children thrive and grow.

Early childhood years are generally thought of as those from birth to eight years of age. It is a period of rapid growth in all domains of development - physical, cognitive, social, and emotional. Between birth and three years of age, a child typically doubles in height and quadruples in weight and is developing gross and fine motor skills. He/she is also rapidly developing language skills so that by the age of five the child has a vocabulary of about 1500 words and is able to produce five - seven word sentences. Children in this stage move from concrete understanding to some understanding of less concrete concepts like time. Between the ages of five and eight, they also begin to develop longer-lasting friendships and have a stronger sense of others (The Institute for Human Services for The Ohio Child Welfare Training Program, 2008).

Middle childhood years (eight to twelve) are characterized by slow and steady growth physically until the onset of puberty and slow and steady growth cognitively as young people develop reasoning skills. Children this age still require concrete learning activities while their understanding of abstract concepts increases. They gain competence in developing interpersonal and social relationships, especially with their peers, yet their families still have a strong influence on all aspects of their development. This is the time frame when best friends become important and influential in their social world (The Institute for Human Services for The Ohio Child Welfare Training Program, 2008).

Adolescence is the time frame from approximately twelve to twenty-one years of age, separated into categories of early, middle, and late adolescence. Physical growth, both height and weight, is accelerated and sexual maturity is complete. Youth in this phase of development gain the ability to grasp more abstract concepts and problems, including generating and testing hypotheses systematically, and to use executive functions such as organizing and decision-making with more thoughtfulness and success (American Academy of Child and Adolescent's Psychiatry Facts for Families, 2015; Spano, 2004; Steinberg, 2008; Teipel, 2005). Additionally, adolescence is a complex period for the formation of the brain's regulatory systems (Steinberg, 2008). Adolescents try on new roles as they rely less on family and more on their peer groups for direction in their search for identity and independence. They also experience mood swings and struggle emotionally with issues of self-esteem, often exhibiting contradictory behaviors. (The Institute for Human Services for the Ohio Child Welfare Training Program, 2008; Spano,

2004; Yurgelun-Todd, 2007). Furthermore, the U.S. Department of Health and Human Services (2011) accounts for the paradox that exists among adolescents; although healthy, the changing brain of an adolescent creates risk factors that correlate with premature injury and death. “Rates of death by injury between ages 15 to 19 are about six times that of the rate between ages 10 and 14” (U.S. Department of Health and Human Services: National Institutes of Health, 2011).

A child will more likely be a successful, productive member of society if he or she grows up in a safe, stable and supportive environment with positive experiences. These beneficial experiences help produce healthy brain cells and chemical signatures essential for building a child’s resiliency. Perry (2015) references six core strengths in building resiliency: (1) Attachment (2) Self-Regulation: (3) Affiliation: (4) Attunement: (5) Tolerance: understanding and accepting differences in others; and (6) Respect. It is essential these strengths are developed within a nurturing environment, among healthy relationships to ensure optimal capacity for future growth.

Unfortunately, when a child’s world is “chaotic, threatening, and devoid of kind words and supportive relationships” (Perry, 2005, p 1), it can have long-term negative effects on his/her learning, behavior, physical and mental health. Due to the nature of their environment and experiences, a neglected or abused child is forced to respond to a stressful environment. These responses and behaviors are usually different than those developed in a resilient child. Perry claims that these experiences can disadvantage maltreated children unaccustomed to a structured

classroom because they lack tools to manage the stress of school. “Resilient children are likely to stay calm when faced with a challenging task while vulnerable children will react with fear or terror” (Perry, 2005, p. 2-3).

Stress is a given in life; yet how a person responds to it is affected by its degree and the environment in which a person is raised. Three types of stress have been identified by researchers. When momentary increases in heart rate and hormonal levels occur this is called *positive* stress. A child might experience this when she is first left with a new caregiver or is given a shot by a doctor or nurse. When a child experiences something like the loss of a family member his body’s “alert system” is activated significantly. If there is a responsive adult who provides the child with a sense of security and protection, this stress becomes *tolerable*, allowing the child’s brain and other organs to recover from potentially harming effects. On the other hand, when a child is exposed to extreme poverty, physical or emotional abuse, or neglect without adequate intervention from adults, stress can be *toxic* leading to “stress-related diseases or deficits in learning and behavior across the lifespan” (Center on the Developing Child at Harvard University, 2014., p.9; Shonkoff et al., 2012).

From birth through late adolescence, genetics and environments play a crucial role in how a child develops cognitively, emotionally, and socially. Children who grow up in an environment supported by adults who provide nurturing, age appropriate experiences are most likely to become healthy, productive adults who repeat the cycle for their own children. Research indicates that exposure to toxic

stress disrupts healthy child development and can lead to permanent mental and physical illnesses that “increase the prevalence of unhealthy lifestyles that lead to widening health disparities” (Shonkoff et al., 2012, p. e243). These effects which produce burdensome lifelong costs to our society should be addressed earlier rather than later. “Brain plasticity and the ability to change behavior decrease over time, so getting things right the first time produces better outcomes and is less costly, to society and individuals, than trying to fix them later” (Center on the Developing Child at Harvard University, 2014, p.7; Child Welfare Gateway, 2015).

“Contrary to popular belief, severe neglect appears to be at least as great a threat to health and development as physical abuse—possibly even greater” (National Scientific Council, 2012, p.10). Although studies demonstrate that substantial neglect in early childhood may be more damaging to the developing construction of the brain than physical trauma as well as the most common reason for involving protective services, there is disproportionately less attention given to neglect over physical and sexual abuse (National Scientific Council, 2012). Thus despite advances in understanding adverse effects of neglect on child development, there is a critical need to further investigate current and future strategies. Thus it is important to understand the risk factors for behavior that can have serious consequences and how all these factors act in the context of a brain that is changing. “A breakdown in these reciprocal, serve and return interactions between adult caregivers and young children can be the result of a multitude of predisposing factors” (National Scientific Council, 2012, p.1). Children and adolescents who experience toxic stress are often at risk for long-term learning and behavioral

problems as well as physical and mental health issues. As a person ages, the brain becomes less malleable resulting in decreased changes in behavior. Therefore, it is crucial that children are raised in a nurturing environment because it “produces better outcomes over time and is less costly, to society and individuals, than trying to fix them later” (National Scientific Council, 2012, p.7).


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Child Development Chart

	AGE	SOCIAL/EMOTIONAL	COGNITIVE	PHYSICAL
INFANT		<ul style="list-style-type: none"> ♥ Begins to develop social smile ♥ Enjoys playing with people ♥ More communicative ♥ More expressive with face & body ♥ Shy or anxious with strangers ♥ Imitates some movements & expressions 	<ul style="list-style-type: none"> ♥ Explores objects in different ways ♥ Finds hidden objects ♥ Explores with hands and mouth ♥ Imitates gestures ♥ Begins to use objects correctly 	<ul style="list-style-type: none"> ♥ Gets to sitting position without help ♥ Crawls forward on belly ♥ Assumes hands-and-knees position ♥ Gets from sitting to crawling position ♥ Pulls self-up to stand ♥ Walks holding on to furniture
EARLY CHILDHOOD		<ul style="list-style-type: none"> ♥ Imitates behavior of others, especially adults and older children ♥ Aware of himself as separate from others ♥ Increasingly enthusiastic about company of other children ♥ Demonstrates increasing independence ♥ Tests parental response 	<ul style="list-style-type: none"> ♥ Says words, phrases, and sentences ♥ Understands simple directions ♥ Finds objects even when hidden ♥ Sorts by shape and color ♥ Plays make-believe ♥ Short attention span 	<ul style="list-style-type: none"> ♥ Walks alone ♥ Pulls toys behind when walking ♥ Begins to run ♥ Stands on tiptoe ♥ Kicks a ball ♥ Good balance
PRESCHOOL		<ul style="list-style-type: none"> ♥ Imitates adults and playmates ♥ Shows affection for familiar playmates ♥ Can take turns in games ♥ Understands "mine" and "his / hers" ♥ Cooperative play ♥ Develops friendships 	<ul style="list-style-type: none"> ♥ Makes mechanical toys work ♥ Matches an object in hand to picture in book ♥ Observes rules ♥ Tells stories ♥ Carries out direction ♥ Asks meaning of words 	<ul style="list-style-type: none"> ♥ Climbs well ♥ Walks up and down stairs ♥ Kicks ball ♥ Runs easily ♥ Pedals tricycle ♥ Bends over without falling
SCHOOL AGE		<ul style="list-style-type: none"> ♥ Signs of growing independence ♥ Self-conscious and critical of body image ♥ Develops fears around failure, school and relationships with family and friends ♥ Influenced by family and friends 	<ul style="list-style-type: none"> ♥ Begins to read and write ♥ Can focus attention ♥ Develops plan to meet a goal ♥ Begins to build self-image ♥ Master sequencing /ordering and forming hypotheses 	<ul style="list-style-type: none"> ♥ Growth is slow and steady ♥ Body starts to change in approaching puberty ♥ Recognizes difference between boys and girls
ADOLESCENCE		<ul style="list-style-type: none"> ♥ Searches for identity and interdependence ♥ Relies more on peer groups for direction ♥ Pulls away from reliance on family ♥ Emotional mood swings ♥ Struggles with self-esteem ♥ Risk-taking behaviors 	<ul style="list-style-type: none"> ♥ Gains ability to solve more abstract and hypothetical problems ♥ Have abilities to generate and test hypotheses ♥ Abilities to think and plan for the future ♥ Reflects on own thoughts ♥ Stronger "self" than social awareness 	<ul style="list-style-type: none"> ♥ Growth in height, weight, muscle mass, and body hair accelerates ♥ Changes in hormonal activity ♥ Develops secondary sexual characteristics and matures sexually ♥ Changes to voice