

PART 1



FOUNDATIONS IN CHILD DEVELOPMENT

Chapter 1

Making a difference in the lives of children and adolescents 2

Chapter 2

Using research to understand children and adolescents 32

Chapter 3

Family, culture and community 58

Sample pages

CHAPTER 1



Making a difference in the lives of children and adolescents

LEARNING OBJECTIVES

By the end of this chapter you should be able to:

- LO 1.1** Identify key features of the field of child development
- LO 1.2** Describe and explore the three key questions that are important to understanding child development
- LO 1.3** Compare and contrast essential features of each theory of child development
- LO 1.4** Distinguish different approaches to education that are important at different ages
- LO 1.5** Discuss general suggestions as to how to apply an understanding of child development in centres, classrooms and the community

CASE STUDY

Rosanne



Rosanne had only recently graduated as a teacher when she accepted a position at a school that was just opening. Her first day coincided with the school's first ever assembly, complete with government minister and media scrum. Amid the chaos, Rosanne was 'handed' a 7-year-old Somali boy: 'This is Bedri, and we think he's blind.'

Over the next few days, Bedri exhibited an array of behaviours Rosanne found 'incomprehensible' even though she was familiar with the disordered behaviour shown by some autistic children. He hurt other children; he denied responsibility for acts Rosanne watched him do; he blamed other children for his own acts; and he maliciously broke toys and other objects. Classmates became frightened of him, and came to blame him for negative occurrences even when he was not in the room.

As he was a refugee child beginning his education in a school still establishing its filing systems, Rosanne had no previous records or other information to help her understand Bedri. She commented, 'Not only was he supposedly blind, but I was flying blind, too.' She was unsure whether his undesirable behaviours were related to visual impairment, limited grasp of English, or other factors.

Faced with all sorts of questions, Rosanne started systematically to gather what information she could. She talked to Bedri's middle-aged father and, despite his limited English, learned that Bedri behaved in the same way

at home. Agencies for refugees and the visually impaired confirmed that Bedri's disruptive behaviour was occurring everywhere. So she was able to exclude it as a reaction to school or to herself.

Her immediate response was to institute a program of consistent firm and enforced instruction on acceptable behaviour. Positive responses led to positive consequences; disruptive behaviour elicited immediate targeted sanctions. Rosanne also interacted with Bedri's father on matters such as dress (Bedri consistently wore soccer boots to school). She was not really comfortable with this approach but felt it necessary to bring Bedri's behaviour under control. Bedri responded to this consistent consequential behavioural regime with increased compliance but without engagement in the learning process.

As Rosanne gathered additional information, a more complex picture emerged. When he was age 3, Bedri's mother died in Somalia after a prolonged illness. Just six months ago, a new young wife for Bedri's father had arrived from Somalia but had not adopted a mothering role with Bedri. He had also been handled by a variety of different agencies and their staff. About this time, a visitor from one agency for the visually impaired commented to Rosanne that Bedri was becoming 'attached' to her.

It became clear to Rosanne that this very disturbed little boy lacked stable nurturant attachment figures, and that much of his resistant and disruptive behaviour stemmed from this. Calling on her understanding of the holistic nature of children's development, she decided to specifically address this issue rather than relying solely on behavioural control techniques. She believed that Bedri's learning potential could not be tapped until his emotional difficulties were addressed.

Rosanne came to view Bedri as a 7-year-old with the emotional maturity of a toddler, possibly frozen at the time of his mother's death. She saw that in this child's case, the school's policy of 'putting the child at the centre' meant providing an adult on whom he could centre. She also recognised the strong need of children to belong and Bedri's alienation from his setting and peers.

Consequently, after a few weeks, having integrated her understanding of Bedri's developmental needs, she instituted a process based on considering him as a 'whole child' and not just a 'learner'. She assumed the role of an accepting 'attachment' figure for Bedri and made special efforts to integrate him with the other children in the classroom.

For instance, school disciplinary policy was to apply sanctions that progressively removed the child further from the class setting to avoid disruption to other children. Rosanne determined that in disciplining Bedri, she would always keep him within the class so that he was never left with a sense of exclusion. She also constantly reaffirmed his 'belonging': being part of the class group, being important to the other children, and being needed as part of classroom activities. One strategy was to address his refusal to wear his glasses; he would lose them, break them or just refuse to use them. Rosanne began to wear her own, and to persuade Bedri that the other children wanted him to participate with them but needed him to be able to see what they saw so that he could join in with what they were doing.

Over the length of the first term, the change in Bedri was rapid and sustained. While there were lapses, his behaviour progressively improved. He stopped blaming others and denying his own responsibility. Though he was still behind other children in basic abilities, he began to show a great capacity to learn and considerable problem-solving skill. He became accepted by, and even popular with, other children.

As an example of his improvement, Rosanne recounts an incident that occurred late in the term when she took the class on a field trip to a museum. After she explained the reason for the trip, Bedri approached her and asked if he could take a notebook to write down his thoughts. She sees such changes as indicative of the way her understanding of attachment, the holistic nature of development, and the importance of group identity for children has allowed her to make a real difference in the life of a very troubled child.

Rosanne made a difference in Bedri's life. By drawing on her knowledge of child development, Roseanne was able to understand that Bedri could grow and change if given secure attachments and a sense of identity. By providing clear and consistent behavioural expectations, she repaired Bedri's damaged reputation with the other children and helped him earn their acceptance. Feeling accepted and secure, Bedri was better prepared to tackle academic challenges. Thanks, in part, to Rosanne's knowledgeable and thoughtful intercession, Bedri was given a chance to thrive.

LO 1.1

Identify key features of the field of child development

child development

Encompasses the predictable patterns and individual courses of persistent and cumulative changes in all aspects of individuals between conception and the end of adolescence.

physical development

Systematic biological and functional changes to the body and the nervous system, and related changes in motor skills.

cognitive development

Systematic changes in reasoning, concepts, memory, language and problem-solving.

social-emotional development

Systematic changes in how children understand, relate to and control their internal world and relationships with others.

► THE FIELD OF CHILD DEVELOPMENT

Studying human development helps us understand how people change from the time of their conception, through childhood into adulthood, and into old age and death. This book covers the early part of the human journey—including conception and prenatal growth, birth, infancy, childhood and adolescence. The field of **child development** seeks to identify and explain persistent, cumulative and progressive changes in children and adolescents. In doing so it recognises that the course of development is not a simple linear pathway. It is multi-causal; each change results from a number of factors acting independently or interdependently. The same change can be achieved via a number of different pathways. Sometimes development may plateau and even regress before resuming progress (Smith, 2013).

Children's developmental journeys are guided by the interactions of three factors:

- ▶ *Nature or heredity*—the genetic inheritance with which each child is born.
- ▶ *Nurture or environment*—the influence of the settings in which each child lives.
- ▶ *Agency*—each child's choices, mental processes, emotional responses and behaviours.

Development includes changes common to most children and adolescents, and those specific to particular groups and individuals. We will talk about changes that nearly everyone undergoes, such as acquiring complex language skills and developing consideration for other people's feelings. We will also discuss changes that differ considerably among children. For example, some children spontaneously develop effective study skills; others do not unless explicitly taught such strategies.

To describe the many factors that contribute to children's growth, students of child development draw from many academic disciplines. In this book, our descriptions of children's development draw primarily on research in psychology but also in biology, sociology, anthropology, and the applied fields of early intervention, education, child and family studies, juvenile justice, counselling, social work and medicine. We emphasise research that is relevant to children's education and experiences in educational settings.

Our principal goal is to help you support healthy, optimal development in children and adolescents. We pursue this by focusing on two specific objectives:

1. We want you to learn how children and adolescents think, feel and act at various ages to help you understand the individuals with whom you work.
2. We want you to be able to apply what you learn in your classroom, school and community.

As Rosanne showed, practical ideas from the field of child development can assist your teaching, organisation, and relationships with students.

DEVELOPMENTAL DOMAINS

The study of child development can be organised into domains, or broad areas of study, though which domains people identify do vary. The most common domains are: physical, cognitive, and social-emotional development. **Physical development** comprises biological and functional changes to the body and the nervous system, including genetics, prenatal growth, birth, neural development, growth in size and strength, and the acquisition of such motor skills as throwing a ball and using scissors. It encompasses environmental factors and behaviours that influence health and physical growth. **Cognitive development** refers to changes in children's reasoning, concepts, memory and language, whether caused by biological changes or cultivated by children's experiences. **Social-emotional development** includes changes in self-concept, social relationships, emotions, motivation, morality and spirituality.

There are other ways of classifying domains of development; some scholars identify aesthetic development, moral development and spiritual development as independent domains. For instance, in a New Zealand study, Sewell (2009) says: 'I was surprised to find data that could not be

explained within my coding framework. I began to code data as “spiritual” when the examples appeared to be beyond the realm of intellectual, social or emotional connections.’

Although the domains described above may appear to be independent areas, they are closely interrelated. For example, an increase in ability to look at situations from multiple perspectives (a cognitive ability) enhances social skills. Educators consistently address more than one domain at a time. For instance, a high school chemistry teacher raises both scientific and moral issues when discussing global warming; and by addressing Bedri’s emotional needs, Rosanne affected not just his social relationships but also his learning.

EFFECTS OF CONTEXT ON DEVELOPMENT

All areas of development depend on the **context** of children’s lives—children’s experiences in families, schools, neighbourhoods, community organisations, cultural and ethnic groups, and society at large. Child development research has shown, for example, that some sort of ‘family’—a cluster of close, caring relationships—is a critical condition for optimal development. Educational settings also play a significant role in development, not only by fostering cognitive skills but also by communicating messages about children’s abilities and worth and by providing an arena in which children can practise social skills.

In preparing to teach or care for children, you become a vital part of the developmental context of young people. Your role will be sustained by a thorough foundation in child development. As Figure 1.1 shows, this book provides such a foundation in its coverage of the three domains of development, the contexts in which children and adolescents grow, and the research methods that reveal children’s developmental journeys.

context The broad social and cultural environment, including households, schools, neighbourhoods, organisations, ethnicity, society and historical era.

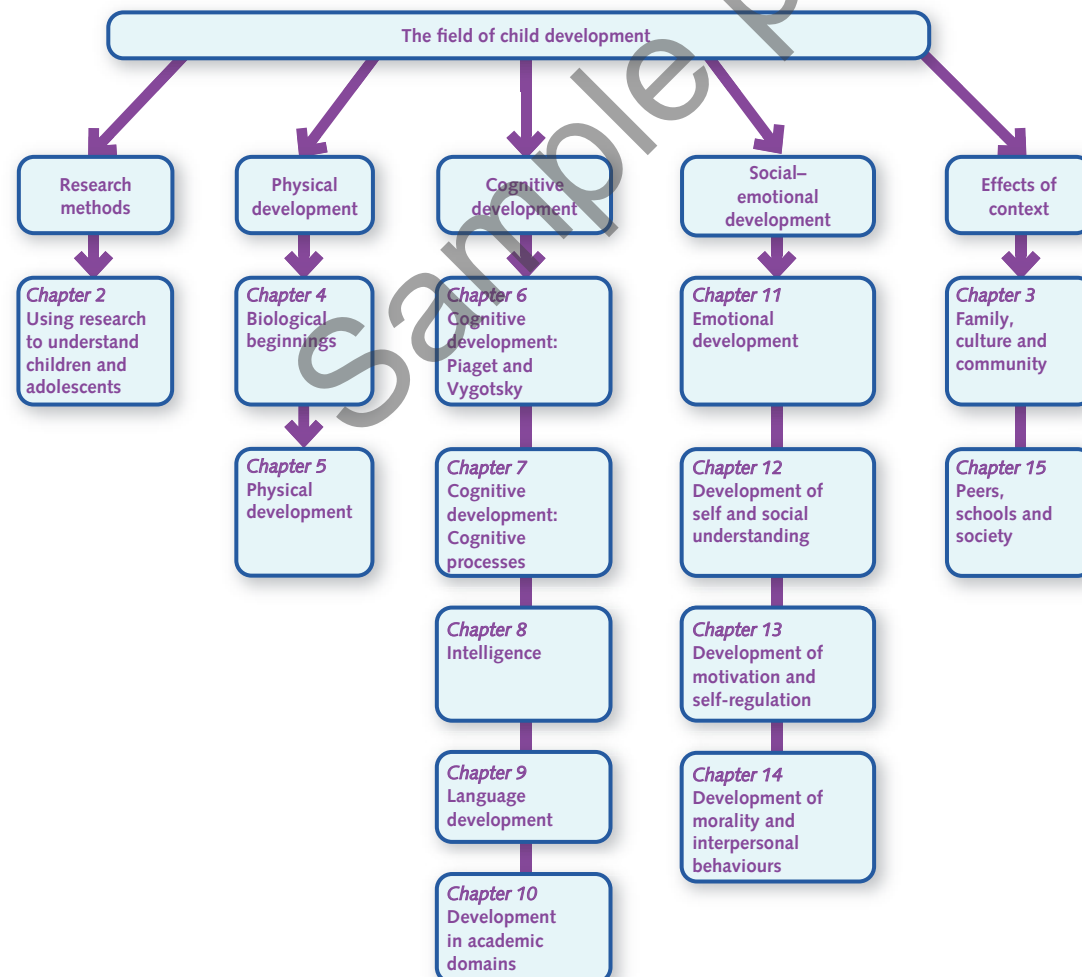


FIGURE 1.1 Overview of the book

LO 1.2

Describe and explore the three key questions that are important to understanding child development

► BASIC QUESTIONS IN DEVELOPMENT

To explain the changes taking place during childhood, child developmentalists have grappled with three key questions:

1. How do heredity and environment influence development?
2. Are developmental paths true for everyone, or unique to individuals?
3. Should developmental changes be characterised as rapid transformations or as gradual transitions?

In earlier thinking these issues have been referred to as conflicting: (a) nature versus nurture, (b) universality versus diversity, and (c) qualitative versus quantitative change. However, they are now seen as complementary.

NATURE AND NURTURE

In the study of influences on development, **nature** refers to inherited (genetic) characteristics and tendencies, while **nurture** refers to environmental conditions.

Their genetic make-up contributes to both common traits and individual differences in children as well as adults. Some characteristics are inherited by virtually everyone. For instance, almost all children walk, use language, imitate, and draw inferences about other people's perspectives. Other inherited characteristics, such as stature, eye colour and facial appearance, vary among children. Children's individual genetic make-up seems also to partially affect their **temperaments**—their characteristic ways of responding to life events (Sanson, Hemphill, Yagmurlu, & McClowry, 2010)—as well as their quickness to learn (Kan, Wicherts, Dolan, & van der Maas, 2013) and whether and to what degree they are affected by autism spectrum disorder (Tick, Bolton, Happé, Rutter, & Rijdsdijk, 2015).

Hereditary effects are powerful but are constrained by children's developmental level, health, activity and environmental influences. Whereas some hereditary instructions, such as those that determine gender, function from the beginning, others emerge only gradually through the process called **maturation**—genetically guided changes that appear later in development. For example, the development of secondary sexual characteristics (e.g. breasts and pubic hair) begins to occur at the onset of puberty when the pituitary gland in the brain releases specific hormones. The timing of maturation, including puberty, is also affected by environmental factors, and the most recent research is directed towards identifying how different environments affect whether, how and when genes are expressed; a field called *epigenetics* (Oberlander et al., 2008; Skinner, Guerrero-Bosagna, & Haque, 2015; Yehuda et al., 2016; and see www.epialliance.org.au).

Children's experiences in the environment affect all aspects of their being, from their health to their curiosity. Nurture influences children's development through multiple channels such as nutrition, activities, stress, affection, informal experiences and formal teaching, adult role models and peer relationships. With environmental support, most children thrive. However, nurture is constrained. Even the best environments cannot overcome every defective gene. And environments are not always nurturing; children may experience abuse, neglect, discrimination, accidents or disease.

Historically, many theorists saw nature and nurture as acting independently. Some believed that biological factors were ultimately responsible for growth. Others assumed that children were entirely shaped by their environment. In recent decades, developmentalists have realised that nature

nature Characteristics and tendencies inherited as a result of one's genetic make-up.

nurture Characteristics and tendencies resulting from environmental conditions to which one is exposed.

temperament A child's characteristic ways of responding to emotional events, novel stimuli and personal impulses.

maturation Genetically guided changes that appear later in development. (This is not the same as 'maturing', which includes changes guided both by nature and by nurture.)



Expert coaching (nurture) can enhance children's inherited abilities (nature).

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and nurture intermesh dynamically in the lives of children. Consider the following principles of how nature and nurture influence development:

- ▶ *Nature and nurture are only part of the developmental process.* Nature and nurture are insufficient to explain the complex sequence of events we call development. The complexity itself, created by the myriad interactions of innumerable genetic and environmental influences, plays out in different ways for each child, whose decisions at critical choice points can also send development cascading off into new pathways.
- ▶ *The relative contributions of heredity and environment vary for different aspects of development.* Some abilities are strongly genetically influenced; for example, the ability to distinguish various speech sounds and grammatical structures develops without formal training and under a wide range of environmental conditions (Archer & Curtin, 2011; Pakulak & Neville, 2010). By contrast, school subject areas (e.g. reading, programming) and advanced artistic and physical skills (e.g. keyboard playing, netball) rely heavily on instruction and practice (Ericsson, 2003; Schraw, 2006).
- ▶ *Genetic and environmental influences affect how responsive children are.* Because of their genetic make-up, some children are more affected by particular environments than others (Bugental, 2009; La Greca, Lai, Joormann, Auslander, & Short, 2013). For example, when compared with those who inherit more-extravert temperaments, who are sociable regardless of social exposure, children who inherit an inhibited nature may become less shy if encouraged to make friends, expected to act in age-appropriate ways, or experience the social interactions of childcare (Arcus, 2001; Kagan & Fox, 2006).
- ▶ *The roles of heredity and environment vary depending on conditions.* Certain environments, such as extreme deprivation, can prevent heredity playing its usual role (Arseneault et al., 2011). In less-challenging environments, hereditary influences are not disrupted. However, children deprived of adequate nutrition and stimulation may fail to develop intellectual skills for which they had the genetic prerequisites (Atkinson, 2013; Hedges & Woon, 2011). Notice how Bedri's refugee background and family disruption limited his ability to develop intellectually until Rosanne's changes to his environment allowed his natural ability to begin to be expressed.
- ▶ *Some genes exert their effects only in certain environments.* Children are sometimes born with particular genes that exacerbate their risk of developing psychological problems. Serotonin, a chemical produced in the brain, influences a person's mood. Some people have difficulty recycling serotonin because they have a short form of the gene 5-HTT. Consequently, insufficient amounts of serotonin are available for maintaining positive emotions, and these individuals are at risk of becoming chronically sad and irritable. However, this problem only occurs if these individuals are also maltreated as children or grow in a stressful environment (Caspi et al., 2003). Being raised in a potentially traumatising environment is associated with later depression mainly in individuals with this short gene.
- ▶ *Timing of environmental exposure matters.* When areas of children's bodies are changing rapidly, they are especially vulnerable to influence by the environment. Early in pregnancy, a mother's use of certain drugs can damage her future offspring's quickly growing organs and limbs. Just prior to birth, exposure to the same drugs can adversely affect the baby's brain while it is forming neurological connections necessary for survival and the ability to learn.

In a few cases, in what is called a *critical period*, environmental stimulation *must* occur during a particular interval to ensure that an emerging ability becomes functional (Dettman & Dowell, 2010; Hardy, King, Farrell, Macniven & Howlett, 2010). For example, at birth virtually all infants encounter adequate stimulation to activate brain circuits reserved for processing visual patterns: lines, shapes, contours, depth, etc. However, when cataracts present at birth are not removed for a few years, these circuits lose some of this capacity (Bruer, 1999).

However, in most developmental areas, children are most receptive to a certain stimulation at one period of their lives but will still benefit from it to some degree later. The term **sensitive period** refers to an extended phase of heightened sensitivity to particular environmental experiences. During early childhood, children are predisposed to attend to the sounds, structure

sensitive period A period when children are more responsive to certain stimuli and quicker to learn particular skills.



Although some developmental states are universal, others (e.g. tastes in clothing and music) reflect diversity in children's talents, temperaments and experiences. Art by Ricco, age 13.

universality Developmental pathways common to virtually all individuals.

diversity Developmental pathways that vary between individuals and groups.

qualitative change

Development that results in the appearance of new characteristics not previously exhibited.

and meaning of language, suggesting a sensitive period for learning language. Sensitive periods are more common than critical periods, extending the period when children can learn those skills. Educators frequently work with children delayed in literacy and other academic competencies, knowing that they can realistically make meaningful progress by addressing missed experiences, monitoring children's progress and communicating that they expect children to succeed.

- ▶ *Children's choices affect their environment.* As well as nature and nurture, children's growth is influenced by their own agency. They make many choices, seek information and gradually refine their knowledge and beliefs (Mashford-Scott & Church, 2011). For example, children request information ('Why did Nanny die?') and experiences ('Uncle, can I use your Notebook?'). Children even help to create environments that reinforce their genetic tendencies, increasingly so as they become older. For example, a tall child might suggest playing basketball, while one who is not athletic might ask a teacher to start a chess club.

UNIVERSALITY AND DIVERSITY

Developmental changes that occur in just about everyone are said to reflect **universality**. Unless physical disabilities are present, all young children learn to sit, walk and run, almost invariably in that order. Highly individual developmental changes, and those related to particular groups (e.g. one gender or one cultural group), reflect **diversity**. Some children's first words are social signals such as 'bye-bye'; others initially learn words for objects ('ball') and actions ('get').

Theorists differ over the degree to which developmental patterns are universal among human beings or diverse among individuals. Early developmentalists proposed that the common human genetic blueprint creates universality in development (e.g. Gesell, 1928), pointing out that despite widely varying environments, virtually all human beings acquire fundamental motor skills, proficiency in language, the ability to inhibit immediate impulses, and so on. Consistencies in children's environments also drive universality. Children everywhere observe that objects always fall down and that people often get angry when someone intentionally hurts them.

Other theorists have been impressed by diversity in child development, viewing both genetic and environmental differences as weighing heavily on how children develop. Variations in genes affect facial features, physical characteristics and intellectual abilities, and factors as broad as the historical period of one's upbringing and as specific as one's family relationships also create developmental diversity (Baltes, Lindenberger & Staudinger, 2006; Bornstein & Lansford, 2010; Giallo, Cooklin, Wade, D'Esposito, & Nicholson, 2014). Some see culture as one significant source of diversity, the competencies that children acquire being based on the tools, communication

systems and values that surround them (Robinson, Eickelkamp, Goodnow, & Katz, 2008; Rogoff, 2003).

There is truth in both views. Some development, particularly aspects of physical development such as the sequence of steps through which puberty unfolds, tends to be more universal. However, in some aspects diversity is more common, for instance in cognitive and social-emotional development. Yet there is diversity in physical development and universality in parts of the cognitive domain.

Throughout the book there are instances of both developmental universality and developmental diversity.

QUALITATIVE AND QUANTITATIVE CHANGE

Sometimes development consists of dramatic changes in the character of an attribute. Such major reorganisations are called **qualitative changes**. When children learn to run they do not simply move faster; they propel their bodies in a way that is distinctly different from walking. When they



Teachers need to keep in mind not only typical age trends but also diversity in children's abilities and developmental progress.

begin to talk in two-word, rather than single-word, utterances, they are, for the first time, using rudimentary forms of grammar. But rather than involving dramatic change, some development occurs as a gradual progression with many small additions and modifications to behaviours and thought processes. These are called **quantitative changes**. Children grow gradually taller, and with age and experience they slowly learn about such diverse realms as mathematics and acceptable public behaviour.

In child development, the term **stage** is used to refer to an extended period during development that is characterised by ways of behaving not often seen earlier or later. This is narrower than its use in everyday speech. Caregivers sometimes make comments like ‘He’s at the terrible twos stage’, suggesting that the child is behaving typically for the age group. However, when developmentalists talk about stages, they usually mean a series of age-related qualitative transformations. According to what are called **stage theories** of development, individuals progress through a series of qualitatively different stages.

Some stage theories include hierarchical levels where each stage is seen as necessary for stages that follow. After observing children in a wide variety of logical tasks and thought-provoking situations, Jean Piaget proposed a stage theory of logical reasoning (Piaget, 1928). He concluded that there were four stages:

- ▶ Infants primarily demonstrate trial-and-error behaviour.
- ▶ In early childhood, children begin to represent, symbolically ‘manipulate’, and make mental predictions about objects and action; for example, they know that a rubber ball will bounce on a wooden floor.
- ▶ In later childhood, they begin to derive logical deductions about concrete, real-world objects and situations, such as that the ball bounces because it is ‘bendy’.
- ▶ By adolescence, they become capable of thinking systematically about abstract ideas; for instance, thinking about unseen physical factors (e.g. momentum, gravity) influencing a ball’s bounce.

Another eminent stage theorist, Erik Erikson, described development as a series of socio-emotional tasks to be resolved (Erikson, 1963). For instance:

- ▶ Infants learn how trustworthy their world and the people in it are.
- ▶ Toddlers discover whether they can act autonomously or face shame and doubt.
- ▶ Adolescent issues centre on identity.
- ▶ Young adults focus on intimacy.

Outcomes of all such conflicts may be positive or negative.

Erikson’s stages are ‘soft’; people do not necessarily replace earlier tasks with new ones. Unless successfully resolved, earlier struggles persist and sometimes complicate new challenges. An infant who learns distrust may find it hard to trust a romantic partner in adulthood. However, negative resolutions of a stage may be revisited and resolved more positively later in life. Having failed to develop trustfulness in her earlier years, a woman spent the first 10 years of her marriage convinced that her husband would desert her. Eventually, his constant reliability allowed her to trust that their marriage was secure.

Many stage theories assume that all children go through the same sequence of changes. In some theories the ages of progression are fixed, but for others the ages can vary depending on the influences of their environment. Piaget strongly believed in universal progressions; Erikson was prepared to be more flexible.

Over the years, developmental psychologists have offered a variety of stage theories to explain children’s development. However, research does not support the idea that young people proceed through one stage at a time, or that they always ‘progress’ (e.g. Fischer & Bidell, 2006). For example, a 9-year-old may show advanced ability to plan ahead while playing an electronic game (a hobby), but have difficulty planning ahead while writing a complex story (an imposed activity). There is contention as to whether stage progressions are universal across cultures and educational contexts (e.g. Karasik, Adolph, Tamis-Lemonda, & Bornstein 2010; Keller, 2011;

quantitative change

Development that results in gradual modification of existing characteristics.

stage A period of development characterised by a qualitatively distinct way of behaving or thinking.

stage theory Theory that describes development as involving a series of qualitatively distinct periods.

McCrae et al., 2005). For example, children raised in different cultures may learn to think in significantly different ways. Given such research findings, few contemporary developmental theorists support strict versions of stage theories (Stanton, 2002).

Many theorists now believe that qualitative changes do occur, not as inevitable, universal and hierarchical patterns but as dynamic states that most children are drawn to as they mature. Adolescents differ from toddlers, not simply by being taller and more knowledgeable but in consistent and qualitatively different ways. When confronting influence from persisting gradual pressures to change, children may initially resist but then suddenly switch to express entirely new ways of dealing with the world (Lewis, 2000). Under parental encouragement children may initially resist walking, then suddenly begin to walk and continue to do so. So, changes can be both gradual and occasionally dramatic (Barrouillet, Gavens, Vergauwe, Gaillard, & Camos, 2009; Morra, Gobbo, Marini, & Sheese, 2008).

APPLYING BASIC LESSONS FROM CHILD DEVELOPMENT




Throughout this book, the developmental issues of nature and nurture, universality and diversity, and qualitative and quantitative change will surface periodically within individual chapters and, where appropriate, in *Basic developmental issues* tables. The first of these tables, 'Illustrations in the three domains', provides examples of basic developmental issues reflected in the domains of physical, cognitive and social–emotional development.

Much of our knowledge and understanding of development reflects these three issues. And these basic ideas also have general implications for working with children:

- ▶ *To best help children, we keep in mind the influences of both nature and nurture on growth and development. A child's fate is never sealed by heredity—it always depends on care from adults and the child's own decisions. Nor is it sealed by environment. How children respond to education depends also*

BASIC DEVELOPMENTAL ISSUES

Illustrations in the three domains

Issue	Physical–motor development	Cognitive development	Social–emotional development
Nature and nurture 	Nature and nurture work together to control the process of child development. Genetic factors predominate for certain characteristics, such as body form. The environment predominates for characteristics shaped by nutrition, exercise, training, etc. (Chapters 4 and 5).	Intelligence, learning and language have a strong genetic basis and are also shaped by children's environments (Chapters 3, 5, 6, 7, 8, 9 and 10).	Individual differences in temperament evidence both hereditary and environmental influences, for example in the development of self-esteem and motivation (Chapters 11, 12, 13 and 14).
Universality and diversity 	The emergence of key physical features (e.g. walking, sexual characteristics) is universal. Diversity is evident in the timing and specifics of these (e.g. age of first steps, gender) (Chapter 5).	Basic components of human language (e.g. using grammatical rules) and cognition (e.g. meaning-making) are universal. Diversity means that children speak and make meaning in different ways (Chapters 6, 7, 8 and 9).	Some social–emotional aspects of development, like a need for friendship, are universal. The nature of children's friendships can be very diverse (Chapter 15).
Qualitative and quantitative change 	Birth and puberty are examples of qualitative transformations. Height and running speed demonstrate incremental quantitative changes (Chapters 4 and 5).	Sudden use of more-sophisticated problem-solving evidences qualitative change. Quantitative change can be seen as children gradually gain a knowledge base (Chapters 6, 7 and 10).	A qualitative social–emotional change occurs as infants reveal a sense of 'self'. Children's gradually increasing understanding that other people differ from themselves is a quantitative change (Chapters 12 and 14).

on their genetic inheritance. So, we can foster children's natural capacities and provide extra support where children have natural limitations. We can also cooperate with positive environments and compensate where children's environments limit their potential.

- ▶ *To better understand children's capabilities and needs, we become familiar with general developmental trends and common variations.* General trends at a particular age affect the daily work of educators. Primary school teachers who know that young children struggle with abstract ideas will arrange many concrete, hands-on experiences when teaching concepts. At the same time, they expect many variations in the timing, appearance and nature of developmental pathways. By recognising developmental diversity among children, we tailor our support to their individual needs.
- ▶ *When considering children's development, we identify both quantitative and qualitative change.* As we introduce children to new concepts, give them practice in physical activity, help them to relate to peers, and so on, we find that children often learn in a quantitative fashion, becoming gradually more proficient in existing skills. On other occasions, entirely new capacities emerge. The momentum for qualitative change comes from the child, but educators can promote this by modelling these novel ways of responding, for example by partnering a child lacking a particular skill with a child who already demonstrates it.

Working with children, we marvel at the complex ways in which these basic developmental issues interact. Trying to make sense of the complexity, some scholars have proposed theoretical models to explain children's development. We turn now to a number of influential theories.

▶ THEORIES OF CHILD DEVELOPMENT

To guide their research questions, methods and interpretations of data, developmentalists construct **theories**—organised systems that explain how development occurs. Several theoretical approaches have dominated academic discussions of child development. We examine each here, and then refer to them selectively in later chapters as they become relevant to particular topics.

BIOLOGICAL THEORIES

Biological theories focus on the way children's bodies adapt to support their survival, growth and learning. Evolutionary theory says that tendencies expressed in genes are more likely to transfer to the next generation if they promote children's chances of survival and reproduction. For example, children with genes that convey greater resistance to disease are more likely to survive and so pass resistance to the next generation.

Historically, early biological theorists emphasised the maturation of children's bodies and motor abilities (e.g. Gesell, 1928), and compiled detailed charts of 'developmental milestones'—typical times when children sat, crawled, reached for objects, and so forth. According to this view, children walk when physiologically ready, puberty begins when a biological clock triggers appropriate hormones, etc. In some instances, maturation establishes sensitive periods for learning. Maria Montessori noticed that infants focus on order and detail in the physical world, and young children attend to details about language (Montessori, 1936/1966, 1949). In Montessori schools, teachers carefully observe children's natural tendencies and provide stimulating materials that engage children in activities specifically suited to their current developmental needs.

Early biological perspectives overlooked the effects of children's experiences on development. Contemporary biological theorists are more balanced in their regard for nature, nurture and children's choices, describing genes as flexible instructions that interact with environmental experiences (Carnel, Kim & Pryor, 2012; Gottlieb, Wahlsten & Lickliter, 2006; Szyf & Bick, 2013).

Two key principles a practitioner can take away from biological theories are that: (a) biological norms provide a guide to what we might expect at different ages; and (b) variation from such norms is to be expected. Understanding developmental norms helps educators provide appropriate activities, structure and guidance; recognising individual variation allows them to tailor their approach for particular children.

LO 1.3

Compare and contrast essential features of each theory of child development

theory Organised set of concepts that explain a phenomenon.

biological theory Perspective that focuses on inherited structures of the body and brain as the basis for development.

BEHAVIOURISM AND SOCIAL LEARNING THEORIES

Whereas biological theories identify heredity (nature) as the driving force behind development, behaviourism and social learning theories assign that role to environmental influences (nurture). Conducting research with humans and other species (e.g. dogs, rats, pigeons), behaviourists have shown that environmental stimuli can modify many behaviours. A proponent of **behaviourism**, B. F. Skinner suggested that children will behave in ways that produce rewards, such as food, praise or physical contact, and avoid negative outcomes, such as deprivation, pain or isolation (Skinner, 1953, 1957). Other behaviourists revealed how the process of classical conditioning produces learned and sometimes very powerful emotional responses, for example learning to be fearful of dogs after receiving a painful bite (Pavlov, 1927/1960).

In the case study above, Rosanne recognised that focusing exclusively on children's visible, external behaviours seriously limits behaviourism by ignoring how internal processes influence those behaviours. While she initially used behavioural techniques, she then sought to understand dynamic factors underlying the behaviours.

In contrast to classic behaviourism, **social learning theories** portray children's beliefs and goals as crucial influences on their actions. Social learning theorists have shown that children can anticipate the consequences of their actions and choose behaviours accordingly, without ever being rewarded or punished for those actions. Moreover, children learn by observing other people's actions and their consequences, as can be seen when Rosanne wore glasses as an example for Bedri. As social learning theory developed, it increasingly incorporated thought processes into explanations of learning; being renamed *social cognitive theory* (Bandura, 2012; Schunk, 2012).

Numerous practical applications presented throughout this book have originated from behaviourism, social learning theory and social cognitive theory. For now, we consider two overarching principles. First, environmental stimuli, such as rewards and punishments, influence children's actions and feelings. Bedri's behaviour was improved by Rosanne's behavioural techniques. Second, children imitate what they see others doing, whether desirable (e.g. the marking of an AFL champion) or undesirable (e.g. the same player's head-high tackling).

PSYCHODYNAMIC THEORIES

Psychodynamic theories claim that internal conflicts shape development and early experiences are critical in social and personality development, primarily pathological development.

The earliest psychodynamic theorist, Sigmund Freud, argued that young children are torn between unconscious sexual and destructive impulses, the need to survive, and the desire for approval from parents and society (Freud, 1905, 1910/1965, 1923/1960). He proposed that children progress through a series of sexually based, universal and qualitatively distinct stages, where they learn to channel impulses in socially approved ways or become 'stuck' with ongoing destructive outcomes. Erik Erikson focused less on unconscious sexual impulses and more on conscious 'psychosocial crises', such as the need to feel competent and sure of one's identity (Erikson, 1963).

Psychodynamic perspectives have made a lasting contribution by highlighting the significance of children's social-emotional needs, particularly that early social experiences can affect later development; particular issues are focused at certain ages; and redirecting children from an unhealthy path may require repeated, powerful efforts (Josephson, 2013; Ludwig-Körner, 2012).

Psychodynamic theories lack research data to support their claims. It is difficult to verify what internal conflicts a child might suffer, especially if these are not available to conscious thought. The clinical studies that theorists themselves conducted are difficult to generalise from: Freud extrapolated from memories of disturbed Austrian patients whose Victorian-era childhoods were not necessarily typical. Critics indicate that not all people are dominated by the need to restrain sexual urges (Freud) or define their personal identity (Erikson). Moreover, research has refuted several central psychoanalytical ideas. Freud recommended performing mildly aggressive acts to discharge destructive tendencies, yet research indicates that such acts actually increase aggressive inclinations (Schaefer & Mattei, 2005; Smith, Fischer, & Watson, 2009).

behaviourism Perspective that confines itself to the development of observable behaviours and excludes subjective phenomena like emotions or motives.

social learning theory Perspective that focuses on how children learn by observing and imitating others.

psychodynamic theory Perspective that attributes social and personality development to early experiences and internal conflicts.



Children develop, in part, by actively seeking out new and interesting experiences. Art by Margot, age 6.

Despite these serious problems, psychodynamic theories remind educators that children's troublesome behaviour can spring from life events of which they are unaware and that, as in Bedri's case, it is important to explore what lies behind the observable behaviour.

COGNITIVE-DEVELOPMENTAL THEORIES

Cognitive-developmental theories emphasise qualitative changes in thinking, where children play an active role in their development: seeking out new and interesting experiences; trying to understand what they see and hear; and working actively to reconcile discrepancies between new information and what they previously believed. Through these changes, children's thinking becomes increasingly logical and abstract.

The earliest and best-known cognitive-developmental theorist, Jean Piaget, focused primarily on children's cognitive development (Piaget, 1928, 1929, 1952a, 1952b). Using detailed observations, in-depth interviews and ingenious experimental tasks, Piaget investigated the logic of children's thinking about such topics as object permanence, numbers and causality. Another prominent cognitive-developmental theorist, Lawrence Kohlberg, undertook extensive research on moral reasoning (Kohlberg, 1981, 1984). They and their colleagues suggested that taking a developmental perspective means sympathetically understanding the nature of children's current level of thinking. Although adult-like reasoning may be desired for young people, cognitive developmentalists believe that one cannot make children think beyond their current cognitive stage. Adults who try to push children in this manner create unnecessary stress and fail to take advantage of their existing cognitive capacities.

While many cognitive-developmental ideas are well regarded by educators, for example that children's thinking often reflects a reasonable struggle to make sense of novel and puzzling information, cognitive-developmental theories have undergone vigorous critiques:

- ▶ They encourage identification of 'deficits' in younger children's thinking.
- ▶ Researchers rarely find clear stage progressions; children often alternate between more and less sophisticated ways of thinking.
- ▶ To not think abstractly about a particular problem does not demonstrate total incapacity for abstract reasoning; children sometimes reason at very high levels in preferred areas, while being incapable of this in others.

The most important principle for education that emerges from cognitive-developmental theories is the need to understand children as children. To facilitate learning, educators encourage children to actively explore their environment, while observing their actions, listening closely to their conversations and gently probing them about their ideas. Only when educators understand children's thinking can they consistently successfully enhance it.

INFORMATION PROCESSING THEORIES

Information processing theories examine how people perceive, interpret, remember and utilise information and how these processes change during development.

Information processing (IP) researchers conduct detailed analyses of how children process sensory input. For instance, they study eye movements of children scanning pictures, how long they take to read various kinds of text, and their strategies for completing puzzles. They follow clear models of how children attend to information, find it meaningful, store it in memory and, later, use it. IP theories now dominate research in cognitive development (e.g. Andrews, Halford, Murphy & Knox, 2009; Duan, Dan, & Shi, 2013; Halford & Andrews, 2006).

Recent research by Robert Siegler illustrates the IP approach. Siegler found that children often spontaneously use a variety of different strategies when first learning addition: counting on their fingers; counting up from the first number; or simply recalling from memory. Children demonstrate the same versatility in such other tasks as telling time, spelling and reading. Children's general tactic of trying a range of solutions and repeating procedures that seem effective is often adaptive for them (Siegler, 2006; van der Ven, Boom, Kroesbergen, & Leseman, 2012).

cognitive-developmental theory Perspective that proposes that children's thinking develops through qualitatively different universal stages by adapting to challenges to characteristics of their current stage.

information processing theory Perspective that focuses on age-related changes in how children receive, store, retrieve and use information.

A key contribution has been describing children's thinking in painstaking detail, but critics suggest that IP theorists pay a price for focusing on specific processes. Some IP researchers neglect larger issues like the significant influence of social–emotional factors and contexts on children's thinking.

A major contribution of IP theories has been a wealth of concrete, research–tested educational strategies. Many educators have found these strategies applicable and helpful. In Chapter 7, we will look at the implications of IP theory for classroom activities, especially taking into account the limitations of children's memory capacity and attention span and the need to challenge their sometimes mistaken theories about how the world works.

SOCIOCULTURAL THEORIES

Cognitive developmentalists and IP theorists have paid little attention to broader social and cultural contexts within which individuals develop. **Sociocultural theories** (also called *activity theories*) try to explain the impact of social and cultural systems on development by emphasising the processes by which children become full adult participants in the society into which they are born.

Lev Vygotsky is credited with advancing our knowledge of how children's minds are shaped by experiences in social settings. After studying the learning and tool use of children and adults, Vygotsky concluded that people learn like apprentices by taking part in everyday activities guided by more–expert people, and gradually assume greater responsibility as expert support is withdrawn (Vygotsky, 1962, 1978); this is now called *scaffolding*. Thus, children develop in culturally specific ways, learning different ways to think about and perform tasks, and so acquire different motor skills, writing systems, religious beliefs, etc.

The past three decades have seen an explosion of research conducted within sociocultural perspectives (Göncü & Gauvain, 2012; Salomo & Liszkowski, 2013; Verenikina, 2010; Wang, Bruce, & Hughes, 2011). This research is often well received by educators because it focuses on real children in real settings and provides tangible steps teachers can take to support children's learning. Another strength is that sociocultural theories show how different cultural groups encourage children to think differently.

However, sociocultural theories have limitations:

- ▶ They describe children's thinking with less precision than IP theorists; and
- ▶ They sometimes assume that children learn simply by participating in an activity whether or not they take responsibility for the task.



From the perspective of sociocultural theories, children and adolescents learn a lot from participating in routine, purposeful activities with adults.

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Sociocultural theories offer important principles for educators:

- ▶ Children learn by being engaged in authentic adult tasks (Gauvain, 2001). With the assistance of educators and peers, children increasingly master real–world tasks previously beyond their capabilities.
- ▶ Children's home cultural practices influence their learning and behaviour in educational settings. Almost every site includes children from diverse cultural backgrounds, making it vitally important to communicate clearly and explicitly about acceptable behaviour in the centre/school's culture, as Rosanne did with Bedri.
- ▶ Educators need to engage with the range of cultures they serve, such as by incorporating children's cultural pastimes like greetings, games, songs and customs for celebrating birthdays; or sensitively inviting children's families to share aspects of their traditions and history.

sociocultural theory

Perspective that suggests that human development is largely a social process based on interactions between children and their society and culture.