CHAPTER 6

Emotion Regulation During Childhood: Developmental, Interpersonal, and Individual Considerations

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Rachel is a 5-year-old girl who often cries when she attempts to complete difficult tasks in her kindergarten classroom. When Rachel’s teacher offers support and comfort and redirects her to a different activity, such as a game or coloring task, Rachel engages readily with the new task and her sadness dissipates.

Michael is a 10-year-old boy who sometimes becomes sad and irritable when he fails to understand arithmetic or science problems. At these times, he is prone to make angry remarks at peers whom he perceives as making noise and interfering with his concentration. Michael has told his teacher that when he thinks about something else for a while, his mood and concentration improve. The teacher notices that Michael’s mood also improves when he exercises during lunch or physical education class.

Jennifer is a 13-year-old adolescent who for the past 4 months has avoided socializing and interacting with her classmates, and looks sad for much of the day. Although Jennifer used to talk with friends to comfort herself when she was sad or angry about being teased by boys, lately she threatens them or withdraws and isolates herself.

Jennifer’s teacher has encouraged her to socialize more and not to take seriously the boys’ insensitive remarks, but Jennifer is not comforted by this support, and she continues to isolate herself from her classmates. When the teacher met Jennifer’s mother at a school conference, she also seemed quite sad. At that time, the teacher learned that Jennifer’s parents were divorced and that Jennifer had been physically abused by her father as a young child.

These three examples illustrate the important role that emotion regulation plays in children’s everyday functioning. In recent years, considerable empirical research has been published on children’s regulation of emotion, although much of this research has not been accessible to educators, child psychologists, and other people working with children and adolescents. In this chapter, we attempt to summarize this research in a manner that is accessible to these professionals. Where appropriate, we employ the case examples of Rachel, Michael, and Jennifer to illustrate important empirical findings.

In the first section of this chapter, we define emotion and emotion regulation. In the second section, we discuss age-related, developmental changes in how children and early adolescents regulate emotion. We show how research can help us understand how children of different ages—like 5-year-old Rachel, 10-year-old Michael, and 13-year-old Jennifer—regulate emotion. We illustrate how, as children mature, they become better able to regulate emotion internally and without the help of others, and how their ability to select situationally appropriate regulatory strategies improves. Differences in the strategies that boys (like Michael) and girls (like Jennifer) use to manage emotions are discussed in the second section, as is the important role that children’s knowledge about emotion plays in their regulatory ability. In the third section of this chapter, we focus on interpersonal influences on emotion regulation, paying particular attention to how parents and other adults socialize children’s emotion regulation. In the fourth section, we discuss how individual differences can influence children’s regulation, paying particular attention to children who are depressed, have conduct problems, or have been maltreated. Finally, we discuss some of the implications for educators and child psychologists of the findings reviewed in this chapter. The focus of this chapter is on how the individual child regulates emotion and on the influence of important adults in the child’s environment. We recognize that social systems (e.g., schools, churches, communities) also affect the child’s emotion regulation, although we do not discuss these influences here.

DEFINING EMOTION REGULATION

In our society, emotions are often viewed as disorganizing forces that disrupt one’s ability to reason. In chapter 2 of this volume, for example,
Carolyn Saarni discusses the "volcano" theory, a typical lay theory of emotion that holds that unless feelings are vented or discharged from within the individual, they may accumulate and burst forth, impairing the individual’s ability to reason and function adaptively. In contrast to most lay theories of emotion, much of the research that we discuss in this chapter derives from functionalist views of emotion. Functionalist perspectives conceptualize emotions as responses that guide the individual’s behavior and serve as information that helps the individual achieve goals. Emotions can be thought to have three components: cognitive-experiential, behavioral-expressive, and physiological-biochemical. The cognitive-experiential component comprises one’s thoughts and awareness of emotional states (i.e., what most people refer to as “feelings”). The behavioral-expressive component comprises such domains as speech, body movement, facial expression, posture, and gesture (i.e., the visible signs of emotion). The physiological-biochemical component comprises physical states and is reflected in such measures as brain activity, heart rate, skin response, and hormone levels. (Like the cognitive-experiential component, this dimension of emotion is generally not visible to others.) Some functionalist theorists include regulation as a fourth component of emotion, although we prefer to view regulation as distinct from emotion. We define emotion regulation as the process of managing responses that originate within cognitive-experiential, behavioral-expressive, and physiological-biochemical components. In this chapter, we emphasize the development of regulation within cognitive-experiential and behavioral-expressive components because emotional literacy frameworks emphasize these components and because educators and clinicians are most likely to target interventions that use them. The development of physiological-biochemical regulation is discussed by Greenberg and Snell in chapter 4 of this book.

THE DEVELOPMENT OF EMOTION REGULATION STRATEGIES

Understanding developmental changes in children’s capacity to regulate emotion can help educators and practitioners assist children when they become emotionally distressed. Much of our knowledge of the development of children’s emotion regulation derives from research in which children are asked to report the things they do to cope with stressful experiences. Most of this research views coping as a process comprising two principle components: stressor and strategy. Any event that evokes distress in the child is considered a stressor. Any effort to manage distress is considered a strategy. We believe that coping is synonymous with emotion regulation; both are processes in which the child uses available strategies to manage stressful encounters. Successful coping or emotion regulation is determined by the range of strategies available, the ability to select strategies that meet the demands of particular stressors, and the ability to implement these strategies.

Although researchers have described coping strategies in a number of different ways, we describe strategies along two dimensions: external/internal and social-solitary. First, strategies can exist at any point along an external/internal continuum: At the external end are strategies that involve altering the individual’s behavior or the environment (e.g., using physical exercise to reduce anxiety or tension), while at the internal end are strategies that involve altering the individual’s internal experience (e.g., substituting positive thoughts for negative ones to reduce sadness). Strategies that exist in the middle of the continuum involve altering both behavior and internal experience, for example, writing about one’s reasons for feeling sad (an external strategy), then substituting positive thoughts to minimize the sad feelings (an internal strategy). The external end of this continuum resembles what Nancy Eisenberg and colleagues (chapter 5 of this volume) refer to as “regulating externally driven behavior”; the internal end of this continuum resembles what they refer to as “regulating emotion.” Second, coping strategies also exist at any point along the social-solitary continuum: At one end are strategies that involve other people (e.g., going to a party with friends), while at the other end are strategies that involve the individual (e.g., watching television alone).

Different dimensions have also been used to describe the types of stressors that children face. One important dimension of the stressor is its degree of controllability: At one end of the continuum are stressors that are largely within the child’s control (e.g., an upcoming arithmetic test), while at the other end are those that are largely outside of the child’s control (e.g., airplane turbulence).

Understanding the strategies that children use to regulate emotion and the types of stressors that they face serves two purposes. First, it provides us with a practical way of communicating with children about the things they can do to manage particular kinds of stressful or unpleasant experiences. Second, it allows us to delineate developmental changes in the types of strategies that children use and in their ability to implement these strategies to manage stressful encounters. Our review suggests three age-related, developmental trends: (a) Children’s use of internal strategies increases throughout development, (b) their use of solitary strategies increases throughout development, and (c) their ability to distinguish between controllable and uncontrollable stressors, and to effectively match strategy to stressor, improves with development. We now discuss the research supporting these trends.

Use of Internal Strategies Increases with Development

Describing coping strategies as primarily internal or external is one way to summarize the many ways researchers have conceptualized or
categorized different strategies. For example, researchers have distinguished between cognitive and behavioral strategies, which can be thought of as internal and external strategies, respectively. Research suggests that there is an age-related increase in children’s use of cognitive strategies, while children’s use of behavioral strategies remains relatively constant throughout development. The reader will recall the case examples presented at the beginning of this chapter: five-year-old Rachel’s sad feelings dissipated when she engaged in behavioral tasks (i.e., games or coloring), while 10-year-old Michael’s angry and sad feelings dissipated when he engaged in cognitive distraction (i.e., thinking about something else). These case examples are consistent with most empirical research. For example, Altshuler and Ruble asked 5-, 8-, and 11-year-old children to read stories and identify strategies that the characters in these stories could use to cope with negative emotions resulting from an uncontrollable stressor. Older children were more likely than younger children to report that story characters could employ cognitive distraction strategies (e.g., “think about something else”), while there were no age differences in the frequency with which children reported behavioral strategies (e.g., “do something else”). In a similar study, 7- and 10-year-old children reported strategies that they used to manage self-reported stressful situations. Older children reported using significantly more cognitive strategies (e.g., “I am not inadequate”) than younger children. In yet another study, 10-year-old children reported greater use of cognitive problem-solving strategies (e.g., “I thought about what I could do to make the problem better”) to cope with stressful experiences than did 7-year-old children. Thus, studies asking children to report strategies they use to cope with distress suggest that children’s use of internal, cognitive strategies increases with age, while their use of external, behavioral strategies remains relatively constant throughout development.

Researchers have distinguished between emotion-focused and problem-focused coping strategies, which can also be viewed as internal and external regulatory strategies, respectively. Emotion-focused coping involves managing directly the negative emotions that result from a problem; problem-focused coping involves the individual’s attempts to manage or change a problem that is generating negative emotions. To take an example, when Compas, Malarine, and Fondacaro asked 10- to 14-year-olds to identify the strategies they used to cope with interpersonal or academic stressors, they found that the use of emotion-focused strategies (e.g., “tried to calm down”) increased with age, whereas use of problem-focused strategies (e.g., “did more homework”) did not. Thus, research using this conceptual approach also suggests that as children develop, they begin to rely more upon internal, emotion-focused strategies, while their use of external, problem-focused approaches is relatively constant throughout childhood.

Researchers have distinguished between secondary control and primary control strategies, which can also be viewed as internal and external coping strategies, respectively. Secondary control involves coping to adjust oneself to events or conditions as they are; primary control involves coping to alter conditions or events. In research using this conceptual perspective, for example, Band and Weissz asked 6-, 9-, and 12-year-old children to describe the strategies they used to cope with everyday stressors such as a time when their mothers were mad at them. These researchers found that the number of primary coping strategies children reported (e.g., “yelling back, with the goal of convincing their mothers not to be so mean to them”) decreased with age, while the number of secondary coping responses reported (e.g., “showing compassion for the fact that their mothers had a bad day”) increased with age.

Additional evidence for developmental increases in children’s use of internal strategies comes from a study of the effects of emotion on problem solving. Terwogt showed that 10-year-old children, but not 5-year-old children, were able to self-implement cognitive strategies to mitigate the effects of emotional arousal on problem solving. Immediately prior to inducing in children sad moods and asking them to complete a problem-solving task, Terwogt activated cognitive regulation strategies in one-half of the children by asking them whether they thought that their moods might affect their schoolwork. The results indicated that 5-year-olds who were not cued to regulate their moods prior to the mood induction performed worse on a problem-solving task than 5-year-olds who were cued to regulate their moods, presumably because the cued children used internal regulatory strategies such as cognitive distraction to attenuate the adverse effects of emotional arousal on problem solving. In contrast, the problem-solving performances of 10-year-olds who were and were not cued did not differ significantly. This experiment implies that young children possess internal strategies, although they may not be able to access and implement these strategies readily. Toward the end of middle childhood, however, children may learn to employ internal strategies without cueing, thus enhancing their repertoire of regulatory strategies. These findings of age-related developmental increases in use of internal regulatory strategies are consistent with research distinguishing between cognitive/behavioral, emotion-focused/problem-focused, and secondary control/primary control regulatory strategies, and suggest that while children use external strategies throughout childhood, their use of internal strategies increases throughout childhood and appears to be in place by approximately age 10.

Use of Solitary Strategies Increases with Development

Children’s ability to regulate emotions without the assistance of others, particularly parents, improves with age. We recall that 5-year-old Rachel needed help from her teacher to manage sad feelings, whereas 10-year-old Michael was able to regulate his sad and angry feelings without assistance. These case examples are consistent with most research.
improves with development, and that these abilities are often used during middle childhood and early adolescence.

Sex Differences in Strategy Use

The case examples at the beginning of this chapter suggest that the use of emotion regulation strategies differs not only as a function of age but also as a function of sex. Recall that Rachel felt better after she received comfort and emotional support from her teacher, while Michael felt better when he exercised. Research is consistent with these case examples and indicates that there are at least three salient differences in girls' and boys' use of regulatory strategies. First, studies suggest that girls are more likely than boys to rely upon social support to cope with distress. For instance, when Wierzbicki asked 8- to 12-year-old children to "write down things to do that help a person who is feeling sad or depressed to feel better" (p. 1253), he found that girls were more likely than boys to mention strategies that involved social support, such as talking to a friend or someone else. Similarly, in a study of 11- to 14-year-olds, girls endorsed more "stress-recognition" coping strategies (e.g., "talk to my brother or sister"; "talk to my friend") than boys. Finally, a study of middle school students found that girls were more likely than boys to mention using social support to cope with stress.

Second, girls are more likely than boys to use emotion-focused regulation that involves attending to the cognitive-perceptual component of emotion. This has been found in 7- to 17-year-old children with active cancer or cancer in remission, and with healthy junior high school and senior high school students. For example, one study reported that when faced with personal and cancer-related stressors, 7- to 17-year-old boys were more likely than girls to use emotion-focused strategies such as actively trying to forget about painful emotion. It appears that throughout middle childhood and adolescence, girls are more likely than boys to cope with stressful experiences by attending to the internal, cognitive-perceptual component of emotion.

Finally, research with 8- to 14-year-olds suggests that boys are more likely than girls to use physical exercise to manage distress. For instance, Ryan found that boys were three times more likely than girls to report using physical exercise to manage events that made them feel "bad, nervous, or worried" (p. 113). A similar study found that the third most frequently endorsed coping strategy reported by young adolescent males was to "do a strenuous physical activity," whereas adolescent females were not likely to endorse this strategy.

To summarize, there are at least three salient differences in girls' and boys' use of strategies to regulate negative emotion: (a) Girls are more
likely than boys to seek support and guidance from others, (b) girls are more likely than boys to use emotion-focused coping, and (c) boys are more likely than girls to use physical exercise.

**Emotional Knowledge and Expressive Regulation**

The increase during development in children’s use of internal regulatory strategies reflects their cognitive development more generally. As children develop cognitively, their fund of general knowledge, which includes their knowledge about emotional experiences, grows. We define emotional knowledge as a **child’s fund of information about emotion and emotional experience in the self and others that is used to understand and interpret events in the environment**. Research has documented age-related increases in children’s knowledge of the duration of emotion, the ability to discriminate and verbalize different basic emotions (e.g., fear, sadness, anger), the capacity to determine others’ emotional states, and the ability to describe the simultaneous experience of different emotions, and knowledge of cultural rules about emotional expressiveness (i.e., display rules; see definition in next paragraph).

Research suggests that children may use emotional knowledge to help themselves regulate their emotions. This is important to teachers and practitioners because they may need to help children understand and interpret emotional cues in the environment before they can support a particular regulatory strategy. For example, if Michael’s teacher were to suggest a regulatory strategy, she may initially need to help him understand that his noisy classmates are just having fun and aren’t intending to impair his concentration. Consistent with this case example, Altshuler et al. found that 5- to 10-year-old children’s knowledge of adaptive emotion coping strategies predicted their ability to use these strategies when hospitalized for elective surgery. In a related area of research, positive associations have been observed between young children’s ability to label emotions in themselves and others and their tendency to help, cooperate with, and share with other children, suggesting that children may use their emotional knowledge to guide social interactions. Given the findings of Altshuler et al., one would expect that emotional knowledge might precede developmentally or emerge concurrently with strategies for regulating emotion. For example, research on display rules, or the learned cultural norms that dictate appropriate emotional expressiveness, suggests that knowledge of display rules probably emerges concurrently with the use of display rules. To illustrate, numerous studies suggest that 6-year-old children know about display rules and that this knowledge develops throughout middle childhood and early adolescence. At the same time, when Saarni presented 6-, 8-, and 10-year-olds with an undesirable prize, she found that the youngest children used display rules by masking disappointment with positive facial expressions, and that the ability to mask disappointment improved with age. Given that children may use emotional knowledge to guide their regulation of expressive behavior, it is important for teachers and practitioners to be aware of children’s funds of knowledge before they attempt to assist children in regulating their experiences.

**INTERPERSONAL INFLUENCES ON EMOTION REGULATION**

In this chapter, we distinguish between interpersonal and individual influences on emotion regulation because most previous research has done so. However, we believe that the two influences are inextricably interrelated and that emotions arise when the individual, who is pursuing goals, interacts with the environment and others. Positive emotions usually arise when the individual progresses toward a goal; negative emotions usually arise when the individual has difficulty accomplishing a goal. In this section, we discuss some of the ways parents can shape children’s ability to regulate emotion. We hope to show how being aware of how parents shape emotion regulation can help teachers and practitioners create environments that are pleasant and conducive to learning and growth.

Parke has proposed three ways in which parents socialize emotion in their children: (a) by indirect exposure to parental and familial interactions, (b) by teaching and coaching, and (c) by regulating opportunities in the environment. Before we review research in these domains, we note that teachers socialize emotion in the same ways by indirectly exposing children to their interactions with other students and teachers, by directly teaching and coaching children (e.g., the teacher who encouraged Jennifer not to ruminate over boys’ insults), and by regulating opportunities in the environment (e.g., the teacher who allowed Michael to attend physical education class).

**Indirect Influences**

Research on two types of home environments illustrates how children can learn indirectly about emotion by observing family interactions. First, Cummings and colleagues have found that children are adversely affected when their parents have frequent, angry conflicts. For example, these investigators found that 6- to 7-year-old children who had been repeatedly exposed to angry parental conflicts tended to cope with these conflicts by using maladaptive strategies (e.g., physical aggression). Along the same line, children of mothers with high scores on an anger measure were more likely to verbalize anger when provoked than children of mothers who scored low on the anger measure. Finally, when preschool children whose parents were high in marital conflict viewed an interaction between two angry adults, these children displayed more overt behavioral distress and different patterns of heart rate reactivity than did children whose parents were low in marital conflict.
Together, these studies suggest that the ways parents manage anger and conflict may influence the development of their children's strategies for regulating emotions through the process of indirect observation.

Second, research suggests that depressed parents possess a number of deficits in parenting that may indirectly influence the development of their children’s regulatory abilities. Compared with nondepressed mothers, depressed mothers tend to be more critical, hostile, and negative and less emotionally expressive and cooperative when they negotiate with their children and with adults. Given that depressed mothers’ interactions model for their children how to regulate their own emotions, it is not surprising that parents’ and children’s strategies for managing depression are positively associated. For example, it is quite possible that Jennifer, who withdraws from her peers to manage distress, may have learned this strategy from her depressed mother. The correspondence between mothers’ and children’s regulatory styles was borne out in a study by Garber and colleagues that found that depressed mothers and their 8- to 13-year-old children reported fewer strategies to regulate sad moods, and that judges rated these strategies as less effective than strategies endorsed by nondepressed mothers and their children. To summarize, children may learn maladaptive strategies for regulating emotion by observing parents who are depressed, angry, or experience marital conflict. Although research has focused on the acquisition of maladaptive strategies, children also learn adaptive ways of regulating emotion by observing parents, teachers, and other adults interacting with one another in positive and productive ways.

Direct Influences

Children can also learn how to regulate emotion by having their parents teach or coach them. For example, Nolen-Hoeksema and colleagues found that when mothers encouraged their 5- to 7-year-old children to complete a difficult puzzle task, children were more enthusiastic and persistent and less frustrated than children whose mothers did not encourage them. In contrast, the more critical and hostile mothers were, the less enthusiastic and persistent and the more frustrated their children were while completing the task. In a longitudinal study of children’s strategies for coping with divorce, mothers’ encouragement at the beginning of the study of coping strategies like distraction, avoidance, support seeking, and cognitive reframing was related positively to their children’s use of these strategies 5 months later. Further, mothers’ reports of their own use of active, avoidance, and support-seeking strategies were related positively to their suggestions of these strategies to their children, suggesting that parents are likely to teach their children the strategies they use.

Along the same line, a number of studies have found that parents who encourage their children to express emotion in socially appropriate ways are likely to have empathic, emotionally expressive children. For example, Eisenberg and colleagues found that parents’ acknowledgment of their children’s appropriate expressive behavior was related positively to their 8- and 11-year-old children’s scores on a measure of empathy. Similarly, Eisenberg observed that parents’ permissiveness of their children’s expressive behavior was related positively to same-sex children’s sympathy. Taken together, these studies suggest that one way children learn to regulate emotion is through direct teaching or coaching by their parents.

Environmental Opportunities

The opportunities that parents afford their children, which include the types of games that children play, the television programs they watch, and the friends with whom they play, may influence the development of children’s emotion regulation. The development of children’s emotion regulation may also be influenced by the degree to which parents are absent from the home. When parents work long hours or their jobs require considerable travel, they may not be able to control the situations to which their children are exposed, and children may develop maladaptive or ineffectual strategies for regulating emotion in these situations. For example, it is possible that young, latchkey children who are exposed to violent programs on cable television or sexually explicit pictures on the Internet may develop maladaptive regulatory strategies because they are not able to understand or manage these experiences without assistance from adults.

INDIVIDUAL INFLUENCES ON EMOTION REGULATION

Children’s capacity to manage emotion is associated with a number of dispositional differences. In this section, we discuss three of these dispositional differences: (a) depression, (b) conduct problems, and (c) mal-treatment. Educators and practitioners who are aware of these differences may be able to assist children in compensating for the deficits in emotion regulation that often accompany these differences.

Depression

A number of studies suggest that clinically depressed and dysphoric (i.e., mildly depressed) children regulate emotions differently than nondepressed children. We recall that Jennifer, who appears depressed, often avoids or withdraws from her peers when she is distressed. Her reaction is typical of depressed and dysphoric children, who tend to use more avoidant strategies for coping with distress and negative emotion than do nondepressed children. For example, when Quiggle et al. asked 9- to 12-year-old schoolchildren to identify strategies they would use to
cope with stressful situations, these investigators found that dysphoric children were more likely than nondysphoric children to report withdrawal strategies and to find assertive strategies ineffective. In a similar study of 8- to 17-year-olds, those who were clinically depressed were less likely to endorse active, problem-focused, or cognitive distraction strategies than children who were not depressed.46

Jennifer's difficulty in cognitively distracting herself from peers' teasing and insensitive remarks is typical of depressed children and adolescents, who are less likely than their nondepressed peers to use cognitive strategies (e.g., positive self-statements) to cope with negative moods.47 For example, we found that 9- and 10-year-old dysphoric children reported less frequent use of cognitive distraction (e.g., "thinking about something else") to ameliorate sad moods in their everyday lives than nondysphoric children.48 In addition, after watching mood-inducing videotapes in their school classrooms, dysphoric children were not as proficient as nondysphoric children in using distraction to ameliorate sad moods or in using distraction to maintain happy moods.49 Similarly, a longitudinal study by Sandler and colleagues of the effects of divorce on 10-year-old children found that children who relied less upon active, cognitive coping strategies at the beginning of the study were more likely to report depressive symptoms 4 months later.50 Finally, research suggests that depressed children are more likely than nondepressed children to use negative behavior (e.g., yelling at someone) to cope with sad moods.51 Taken together, it appears that clinically depressed and dysphoric children do not manage distress, ameliorate negative moods, or maintain positive moods as well as nondepressed children. The direction of causality between deficits in emotion regulation and depression is not clear at this time, although the study by Sandler and colleagues suggests that regulatory deficits may predispose children to later depression.

**Conduct Problems**

Research has found a positive relationship between maladaptive styles of emotion regulation and conduct problems (e.g., fighting, lying, and defiance).52 For example, when 4- to 5-year-old children described how they would cope with stressful situations, those with conduct problems reported greater use of angry and aggressive strategies than did children without these problems.53 A similar study found that when preschool children were exposed to situations involving adults in distress, children with conduct problems tended to exhibit angry facial expressions toward the adults.54 Finally, in a study of 7- to 14-year-old children's responses to positive feedback from a peer, children with conduct problems showed more hostile facial expressions to the feedback than children without these problems.55 Following the feedback, children with conduct prob-

lems were also less accurate than other children in identifying the facial expressions they exhibited, suggesting that children with conduct problems may have less insight into their emotional experiences than children without these problems. Taken together, these studies suggest that children with conduct problems tend to regulate emotion with aggressive strategies in which they vent their anger. These children may rely upon these strategies to a greater degree than other children because children with conduct problems have less insight into their own and others' emotional experiences.

**Maltreatment**

Jennifer, who was physically abused as a young child, was inclined to threaten peers when they teased her. Her response is consistent with empirical research that has found that children who have been physically abused or neglected often exhibit aggressive emotion regulation strategies that are similar to those of children with conduct problems. For example, when 8- to 12-year-old children were observed during free play sessions at a summer day camp, those who had been physically abused were found to use more physically and verbally aggressive strategies to regulate emotion than those who had not been abused.56 Likewise, after 5-year-old boys viewed a staged angry conflict between their mothers and an adult, children who had been physically abused showed more physical and verbal aggression than nonabused children.57 Recent studies have also found that the severity, frequency, and chronicity of maltreatment are associated with the severity and frequency of conduct problems in 5- to 11-year-old children.58 Studies by Dodge and colleagues have found that the tendency for physically abused children to display aggressive regulatory strategies and conduct problems may be partially mediated by their unique ways of processing social and emotional cues in which they (a) are especially aware of hostile cues in the environment, (b) perceive peers' neutral actions as hostile, (c) access aggressive responses from memory, and (d) believe that aggressive strategies lead to positive outcomes.

Maltreated children have also been found to cope with distress by withdrawing from and avoiding peers during free play sessions.59 Given maltreated children's frequent use of avoidant and aggressive regulatory strategies, it is not surprising that they tend to experience depression and anxiety and to be less popular and socially competent than their nonmaltreated peers.60 To summarize, maltreated children have been found to exhibit maladaptive regulatory strategies in which they verbally or physically vent their anger, in much the same ways as children with conduct problems. Unlike children with conduct problems, however, maltreated children also tend to rely upon avoidance and withdrawal strategies to cope with distress.
EDUCATIONAL AND PRACTICAL IMPLICATIONS

The development of flexible, adaptive ways of regulating emotion is essential to the emergence of children's emotional literacy and to their everyday adaptive functioning. Our review outlined three age-related trends in the development of children's regulation of emotion, each of which has practical implications for teachers, child psychologists, and other people working with children. As children develop, they rely more upon internal strategies that regulate the cognitive-experiential component of emotion. Children's ability to regulate emotion without the assistance of others and to implement situationally appropriate regulatory strategies also improves with age. This suggests that young children (i.e., 5 or 6 years old) who are having difficulty managing negative emotion may require considerable individualized attention and that they will respond most readily to behavioral tasks, such as games or other engaging activities. Older children (i.e., 9 or 10 years old), on the other hand, are capable of coping with distress by thinking about other things and are often able to assess the needs of situations and apply appropriate regulatory strategies without requiring adult intervention.

There are times when being aware of sex differences in children's strategy use could help educators and practitioners direct children to use appropriate strategies. For example, the research we reviewed suggests that girls are more likely than boys to attempt to regulate emotion by thinking about their feelings and seeking out the support of others, while boys are more likely to use physical exercise. Children's ability to regulate emotion is probably influenced to some degree by their fund of emotional knowledge, which implies that teaching children about how to recognize and label emotions in others could help them regulate adaptively.

The three age-related, developmental trends that we outlined are moderated by a number of interpersonal and individual factors. Research suggests that children's ability to regulate emotion is affected by their parents, who influence them indirectly by observational learning, directly by teaching and coaching, and by controlling children's exposure to different situations. Teachers and other practitioners influence children in the same three ways. For instance, teachers, through their interactions with students, teachers, and administrators, model for children how to regulate emotion appropriately in the classroom. Teachers and practitioners also instruct children directly about how to manage distress, as Jennifer's teacher did when she encouraged her not to take to heart the boys' insensitive remarks. In the process of designing and creating a comfortable learning environment, teachers also dictate the opportunities that children are afforded to learn about emotion regulation. The use of media (e.g., computers, television, books) affords children a range of opportunities for learning how to manage emotion.

Children who are depressed, have conduct problems, or have been maltreated are likely to have more difficulty regulating emotion adaptively than other children. Teachers and practitioners who are aware of these problems may be able to assist children in compensating for the deficits in emotion regulation that often accompany these problems.

GLOSSARY

Emotion—Responses that guide the individual's behavior and serve as information that helps the individual achieve goals. Emotions are thought to have three components. The cognitive-experiential component comprises thoughts and awareness of emotional states (i.e., one's feelings). The behavioral-expressive component comprises such domains as speech, body movement, facial expression, posture, and gesture (i.e., the visible signs of emotion). The physiological-biochemical component comprises physical states, and is reflected in such measures as brain activity, heart rate, skin response, and hormone levels. (Like the cognitive-experiential component, this dimension is generally not visible to others.)

Emotional Knowledge—A child's fund of information about emotion and emotional experience in the self and others that is used to understand and interpret events in the environment.

Emotion Regulation—The process of initiating, altering, or maintaining responses within or between cognitive-experiential, behavioral-expressive, and physiological-biochemical components of emotion.

External Regulatory Strategy—A way of managing emotion that involves the individual altering his or her behavior or the environment.

Internal Regulatory Strategy—A way of managing emotion that involves the individual altering his or her inner experience (i.e., thoughts and subjective feelings).

NOTES

References


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2. For reviews of emotion regulation during infancy and early childhood, see Kopp (1989) or Thompson (1988).

3. See Salovey and Mayer (1990) for a brief historical account of this view of emotions.


5. We have adapted our definition from Bretherton et al. (1986), Buck (1985), and Campos et al. (1989).
8. Our definition of emotion regulation is adapted from Dodge (1989) and Thompson (1993).
9. Fischer, Shaver, and Carnochan (1990); Saarni, this volume; Salovey and Mayer, this volume.
11. See Rudolph, Dennig, and Weisz (1995) for a recent review of conceptual perspectives on coping and different types of stressors.
16. This distinction was originally proposed by Lazarus and Folkman (1984); Compas, Malcarne, and Fondacaro (1988).
17. This distinction was initially proposed by Rothbaum, Weisz, and Snyder (1982); Band and Weisz (1988).
23. See Miller and Green (1985) for a review of this conceptual distinction.
34. Spirito, Stark, and Williams (1988).
39. See Harris (1985) for a review of this literature.
40. See Bullock and Russell (1986) for a review of this literature.
41. See Gnepp (1989) for a review of this literature.
42. Wintre and Vallance (1994).
43. See Cole (1986) for a review of this literature.
44. Children can sometimes regulate emotion without demonstrating knowledge of this regulation. For example, Terwogt, Koops, Oosterhoff, and Oltith (1986) found that 6-year-old children were able to inhibit sad feelings while listening to a story, but were unable to verbalize their strategies for doing so. We would argue that in studies relying on verbal self-report, the emotional knowledge that children demonstrate is often constrained by their verbal abilities (Kopp, 1989; Thompson, 1988). This is why some investigators gather data from children by using a "funneling" process of inquiry in which children are asked open-ended questions and then focused probes (Saarni, 1989).
48. See Cole (1985) for a review of this literature.
55. See Dix (1991); Downey and Coyne (1990); and Kaslow, Deering, and Racusin (1994) for reviews of this literature. See Developmental Psychology, 1995 for a special issue of empirical research on this topic.
60. Eisenberg, Fabes, Carlo, and Karbon (1992); Eisenberg, Fabes, Schaller, Carlo, and Miller (1991); Eisenberg, Schaller, Fabes, Bambamate, Mathy, Shell, and Rhodes (1988); Fabes, Eisenberg, and Eisenbud (1993); Robertis and Strayer (1987).
61. Eisenberg et al. (1988).
64. Asarnow, Carlson, and Guthrie (1997); Brenner and Salovey (1997); Ebata and Moos (1991); Eisenberg, Fabes, Murphy, Maszk, Smith, and Karbon (1995); Garber, Braafld, and Weiss (1995); Garber, Braaflact, and Zeman (1991); Quiggle, Garber, Panak, and Dodge (1992).
67. Asarnow et al. (1997); Garber et al. (1995); Sandler, Tein, and West (1994).
69. Ibid.
70. Sandler et al. (1994).
71. Garber et al. (1991); Quiggle et al. (1992).
It is gratifying to have Eliot Brenner and Peter Salovey provide a firm foundation for understanding what teachers experience daily in the classroom concerning students’ emotion regulation. It is disturbing, however, that the development of emotion regulation does not currently have a definable place in the curriculum. It is most often incidental or sporadic, receiving sustained attention only during crisis situations.

The stressors in children’s lives have increased dramatically in the past few years. Children are involved in serious situations with drugs, divorce, death, and physical and sexual abuse. They live with the stress of contemplating the likelihood of their own death. Juvenile suicide, gang behavior, and violent behavior have become commonplace. They signal the need for a comprehensive and holistic teaching approach that encompasses the development and management of emotions. Strategies for developing new, appropriate responses to emotion regulation must be addressed now, and at all levels of a child’s development.

Current approaches to handling problem situations include dismissal from school, referral to counseling or therapy, medication, and/or parent-teacher conferences. Such external management strategies rarely do more than provide temporary solutions, since the source of the disturbance remains untapped. These measures can become more effective, however, if they are used in conjunction with teaching children to identify stressors, develop effective coping skills, and choose appropriate management strategies.

Research tells us that stressors are defined as controllable and uncontrollable and this delineation can provide a framework for effective strategies. We know with age, children’s uses of internal and solitary strategies become more fine-tuned. In the classroom, we can turn this fine-tuning to advantage as a natural, integral part of the subject matter. For instance, in reading Charlotte’s Web, a discussion of Wilbur’s controllable and uncontrollable stressors would be effective in developing the students’ emotion regulation.
We also know that as children get older they use more emotion-focused, internal strategies to deal with emotion regulation. Teachers can fine-tune these self-solitary-centered approaches or develop other methods. Just as research shows that girls rely on social support while boys use more physical activity to handle stressors, girls could be encouraged to use physical activity and boys use group support to regulate emotion. Or, a teacher could manipulate these groups so that problem solving is done with physical activity available to everyone for emotion regulation.

In teaching academic courses, we know how to evaluate a student’s prior knowledge of a subject. But how do we evaluate a student’s prior knowledge of emotion regulation? One way is through emotional cues—from past records, interaction with parents and siblings, and observing the child in interpersonal relationships with peers. Aside from using emotional cues as assessment tools, they need to be taught. Often children identify then internalize the wrong reason why something happens to them. An objective look at interpreting emotional cues can help them understand their feelings and reactions and aid in reducing personal pressure.

To counteract negative influences on emotional regulation, many school systems are investing in support services such as school social workers who go into the homes to work with parents. But parents are not the only influence in the home. Television, the Internet, videos, and music also impact emotion regulation. These influences are most often at their peak during “latchkey” times. In response, many schools have developed this block of time with productive programming for organized physical and tutorial activities. Schools are also beginning to employ conflict resolution specialists who work with students in developing nonphysical alternatives to conflict.

The school’s role in assessing and developing emotional regulation is critical. It, therefore, cannot be an add-on to the existing curriculum, for example, a time set aside once a week to discuss emotion regulation. Instead, teachers must incorporate opportunities for developing emotion regulation into the curriculum at every level and in every subject. Character development as seen in high school Shakespeare or elementary reading texts provides a context through which emotion regulation can be developed. Frustration over an algebraic equation can be acknowledged and discussed as part of emotion regulation.

Since the classroom teacher has the child for the largest part of the day, his/her impact on the child is significant. Coaching and modeling are imperative. Teachers who are uncomfortable with “touch-feely” issues must be educated to realize that emotions are just as important as intelligence if one is to educate the whole child. The research stated in this chapter provides valuable data that emotion regulation in children can be supported and enriched through positive teaching experiences, coping skills, and management strategies.

Aside from developing strategies based on research, this brief com-