Recognizing and Supporting the Development of Self-Regulation in Young Children

Martha B. Bronson

Editor's note: Surely there has been no subject of greater interest to parents and teachers in the past hundred years than "discipline"!

During most of the past century, specialists in child study, psychoanalytic research and theory, clinical child psychology, and nursery/kindergarten education have been encouraging parents and teachers to

- meet young children's needs;
- · develop warm, trusting relationships with them;
- · create a predictable routing
- · give children even as young as a year sensible choices;
- enlist children's cooperation in figuring out how to solve the problems that make them misbehave;
- · model responsible behavior.
- · expect age-appropriate responsible behavior, and
- · show appreciation for responsible behavior.

The goal has been to help infants, toddlers, and older young children develop self-discipline. You've heard all the words—self-control, impulse control, self-direction, and so on.

Now here is a review of recent research that reveals how right this child guidance approach has been all along.

Istressing headlines and our own experiences in homes and classrooms point to the need for children to develop self-control, self-direction, and positive strategies for coping with life situations. We want to help children develop these skills—to help them learn to control their emotions, interact in positive ways with others, avoid inappropriate or aggressive actions, and become self-directed learners. Each of these abilities has been investigated as a form of self-regulation.

There has been a striking increase in both public and academic interest in self-regulation in recent years (Zimmerman & Schunk 1989; Thompson 1990; Fox 1994; Schore 1994;

Logue 1995; Eisenberg et al. 1996, 1997; Bandura 1997; Barkley 1997; Bronson 2000). To support the development of self-regulatory skills, we need to understand how they develop and how psychological theory and research suggest that the social and physical environment can help.

Research suggests that the capacity to develop selfregulatory functions is present from birth (Kopp 1982; Barkley 1997), is somewhat affected by innate factors such as temperament (Plomin 1990), and is highly influenced by the environment (Kopp 1982; Sroufe 1995). It is related to both social competence (Eisenberg & Fabes 1992) and success in school (Zimmerman & Schunk 1989; Zimmerman, Bonner, & Kovach 1996). There is also evidence that early self-control is related to self-control in later childhood (Eisenberg et al. 1996, 1997) and throughout life (Sroufe, Carlson, & Schulman 1993).

During the early childhood years, there is a great increase in self-regulation. Flavell (1977) suggests that this increase is a "central and significant" developmental hallmark of the early childhood period. During these years the child makes tremendous progress toward regulating emotional responses (Eisenberg & Fabes 1992; Fox 1994) and is increasingly able to comply with external requests (Kopp 1982), control behavior in familiar settings (Luria 1961; Mischell & Mischell 1983), control attention (Holtz & Lehman 1995; Barkley 1997), and engage in self-directed thinking and problem solving (Brown & Deloach 1978; Deloach & Brown 1987; Friedman, Scholnick, & Cocking 1987; Hudson & Fivush 1991).

In a summary of previous research, Kopp (1982) describes a developmental progression from control of arousal and sensory motor functions in the early months of life, to a be-

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ginning ability to comply with external suggestions at the end of the first year, to the emergence of internal impulse control in the second year. She notes that increasingly sophisticated forms of self-regulation develop from ages three or four onward. With maturation and appropriate experiences the child becomes increasingly capable of deliberate action, planning ahead, and conscious control.

Self-regulation has been described in a number of different ways by psychologists. The terms impulse control and self-control are usually used to describe the ability to inhibit inappropriate responses, delay engagement in an activity, or wait for rewards, Terms like self-direction and independence are used to describe the ability to control and manage ongoing activities. Self-regulated learning and problem solving require higher level regulatory skills such as planning, using strategies, monitoring progress, correcting errors, and persisting until the (social or cognitive) goal is reached successfully. These are often called executive skills by researchers interested in cognitive control functions in the brain.

Perspectives on the development of self-regulation

In addition to differences in terminology and emphasis, a variety of theoretical explanations for the origins and growth of self-regulatory abilities have contributed to our understanding of their development. This section gives a brief overview of the major theoretical perspectives on how children develop the capacity for self-regulation and how theorists and researchers suggest that the social and physical environment can nurture it. A final section discusses applications for caregivers and teachers.



As toddlers learn not to grab each other's food and toys, they are learning self-regulation (impulse control, self-control, self-discipline). The teacher's role is to praise progress.

The psychoanalytic perspective

In the psychoanalytic tradition the development of selfregulation has been related to the development of a strong ego (Block & Block 1980). Freud (1920, 1923) thought that internal control over behavior depended on the development of a part of the mind he called the ego, which could channel basic drives into goals and behaviors acceptable to society. More recently psychologists in the psychoanalytic tradition have viewed the ego as more active and autonomous and suggested other ego goals such as competence, control, and positive relationships with others (White 1960, 1963; Rogers 1963; May 1969).

From the psychoanalytic perspective, self-regulation increases as the child develops ego strength. The ego is strengthened when the child is successful in coping with the social and physical world around her and feels competent and accepted by others. The development of a strong ego has been related to warm and responsive relationships with caregivers (Sroufe 1995) and support for autonomous and effective interactions with the social and physical environment (White 1960).

The behavioral perspective

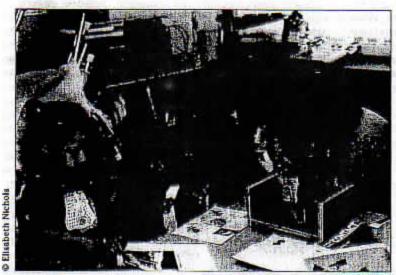
Behavioral theorists focus on the power of the environment to shape behavior. They stress aspects of self-control learned through reward and punishment (Skinner 1938, 1974) and link the growth of emotional and behavioral control to learned strategies for controlling impulses (Logue 1995). Selfcontrol is described as the ability to choose larger but more delayed rewards and is contrasted with impulsiveness, which is choosing smaller but more immediate rewards. Elfective control also includes being able to use behavior strat-

egies required to obtain rewards.

From the perspective of behavioral theory, a child needs to learn to (1) assess the relative value of different rewards ("If I take Jake's truck, he won't play with me anymore"), (2) choose appropriate goals (appropriate to the setting and to the child's own level of skill), (3) give himself previously learned instructions ("I have to wait till it's my turn," "I have to put the toys away") or successfully follow instructions provided by others, and (4) monitor his own actions (noticing when he is doing something successfully and when he has made a mistake). Behavioral psychologists also suggest teaching children to reward themselves in the short term with statements about their own progress and competence (such as "I am listening to the teacher," "I am waiting in line quietly") for behaviors that will ultimately be rewarded or will keep them from being punished in the external environment (Mischel & Mischel 1983; Meichenbaum 1984; Mischel, Shoda, & Rodriguez 1989; Baldwin & Baldwin 1998).

The social learning perspective

Social learning theorists focus on children's ability to learn through observation as well as through the rewards and punishments they experience (Bandura 1977, 1997). They note that children learn



As preschoolers learn to take turns and share, they are learning self-regulation (impulse control, self-control, self-discipline). The teacher's role is to explain briefly and frequently, as situations arise, what's expected, to help each child listen to the other child and to help children resolve conflicts.

through observation even when the learning is not demonstrated in behavior (Bandura, Ross, & Ross 1963). For instance, a child may learn what not to do from observing a behavior that has negative outcomes (seeing another child fall when running down too steep a slope) or is punished (seeing a child removed from the block area when he knocks down another's structure). However, the ability to imitate comes before the ability to learn from the consequences of observed behaviors. Toddlers and young preschoolers may see another child fall off a high wall and may still climb the same wall themselves. They may imitate observed hitting behaviors, though they have witnessed negative consequences for hitting.

Social learning theorists argue that self-evaluation is more powerful than external rewards or punishments in supporting self-regulation. They propose that the ability to observe and evaluate one's own behavior provides both motivation to engage in independent activities and guidance in carrying them out. Children gradually develop performance standards for self-evaluation from their own experiences of receiving rewards and punishments and from observing others. These standards are being developed during the early childhood years and become the basis for self-regulated learning and behavior (Zimmerman 1995; Zimmerman, Bonner, & Kovach 1996; Bandura 1997). As the standards become clearer and more internalized during the primary school years, children may begin to reward themselves (with feelings of self-efficacy) for meeting the standards or punish themselves (with feelings of self-contempt) for failing to meet them.

From the social learning theory perspective, the development of self-regulation depends on having good models, on being rewarded for appropriate behavior or seeing others rewarded for it, and (ultimately) on internalizing appropriate performance standards. If a child has inappropriate or inaccurate expectations about the outcomes of behavior in a particular environment, she may not direct behavior adaptively in that setting. If a child's internalized standards are too high

for his age and skills, self-reward may be unlikely because he will rarely be able to meet the standards. If internalized standards are too low, they may be met too easily and the child may not make independent efforts that match her potential.

Cognitive-developmental perspectives

Cognitive-developmental theorists such as Jean Piaget (1952, 1954) and Lev Vygotsky (1962, 1978) suggested that young children construct their understanding of the world and the ability to act effectively in it. Both theorists assumed that children have an innate interest in controlling themselves and aspects of the environment, and both assumed that the ability to exercise control effectively develops in interaction with the environment. While Piaget focused more on the child's individual efforts to construct a model of the world that was predictive enough for effective action, Vygotsky emphasized the role played by the social environment in assisting that construction.

Both Piaget and Vygotsky associated the development of control over emotions and behavior with overall cognitive development. Piaget (1952; Piaget

& Inhelder 1969) proposed that self-regulatory mechanisms (in the form of assimilation and accommodation) are innate in the child's mental functioning and that development proceeds in stages as the child progressively reorganizes her understanding of objects, the physical world, and the perspectives of others. Piaget considered that, as higher levels of understanding of the social and physical world are reached, the child is able to more effectively regulate behavlor and thought in these areas.

Vygotsky (1962, 1978) emphasized the role of language in developing internal control of action and thought. He considered language the primary means for developing both understanding and self-regulation. The child internalizes the instructions given by others and begins to give herself audible directions ("The green ones go there," "That piece doesn't lit"). Later, at age six or seven, this private speech becomes inaudible as the child learns to think the directions without speaking (Berk 1992, 1994). From this perspective the child can be helped to learn to direct her own activities by providing verbal directions she can use later in independent thinking and problem solving.

Information processing perspective

Information processing theorists focus on the mental processes that support thinking, decisionmaking and problem solving, using the computer as a metaphor for cognitive functioning. They relate the development of self-regulation to the development of executive processes that control thinking and action, and they suggest that what develops in children is the ability to engage in more organized, efficient, and eflective cognitive processing. From this perspective children develop by actively organizing information in their minds and by making use of feedback from the environment to modify these organizations or the way information is handled (processed) as they think. With maturation and experience children are better able to take in (encode) information from the environments, organize it, and retrieve it from memory (Case 1985). They develop more complex strategies for mentally manipulating information and making decisions (Siegler & Jenkins 1989) and learn to monitor their ongoing activities, modifying the strategies they are using if necessary (Sternberg 1984).

Toward the end of the early childhood period, children begin to be aware of and able to control their own thinking processes (Brown 1978). Support for the development of selfregulated thinking and problem solving can be provided by suggesting useful strategies and by making children aware of strategies they are already using (Brown & Campione 1981).

How caregivers and teachers can support the development of self-regulation

Supporting and nurturing the development of self-regulation in young children requires an integrated approach that considers the whole child and the developmental level of each child. Young children cannot separate their feelings, actions, and thoughts as older children and adults learn to do. Caregivers need to consider the physical, emotional, social, and cognitive aspects of control required in a given situation. In addition, the requirements for supporting self-regulation change somewhat with age.

Infants. Infants need to discover their capacity for understanding and influencing the activities of objects and other people. They need enough predictability in their environments that they can begin to connect events and anticipate what will come next. When infants can anticipate events, they learn to expect order in the world and begin to look for it.

Through their interactions with caregivers and the cycles and changes in their environments, infants begin to regulate

their own arousal (waking and sleeping cycles) and their emotional responses to internal and external stimulation. To support development, caregivers can arrange routines and events in the environment so that the infant can discover regularities. These regularities help the child learn when it is time to be awake and alert for interesting things and when it is time to sleep. They help her learn to recognize the signals that mean food or comfort or stimulation is coming and regulate her emotions and arousal accordingly.

Infants also discover their own ability to affect or control the environment in interaction with people and objects. When caregivers are responsive to infants' signals, infants learn that they are capable of influencing others. When infants can create interesting effects by their own actions, they learn that they can have an impact on their environment and that their explorations will be interesting and rewarding. Infants are rewarded by evidence of their own effectiveness and show their pleasure by smiles and persistent efforts to increase this effectiveness. They begin to expect to be successful in interaction with people and objects, and their confidence and motivation for competence in these areas grow.

Toddlers. Toddlers love to exercise their developing skills and are very interested in independent action. There is a strong push for autonomy during these years, but toddlers also use imitation as a means of acquiring new behaviors. Caregivers can model appropriate behavior sequences that

toddlers can carry out independently. Toddlers are able to engage in more active exploration than infants and are beginning to use simple self-regulated routines or strategies when they interact with people or objects. Caregivers can provide materials that support these play activities and allow appropriate choices that help children learn how to choose.

Tockliers are beginning to be able to carry out simple requests and may get upset if they violate known rules (especially if a caregiver is present). To support developing impulse control, caregivers can use responsive guidance techniques that emphasize individual control over behavior, provide simple cause-and-effect reasons for desired behaviors, use suggestions rather than commands, and use language to assist self-control.

Language is developing fast during this period and toddlers use it to label their own actions as well as aspects of the social and physical world around them. Language also helps children remember routines and rules and provides categories to organizing information. Caregivers can use it to highlight important aspects of the environment, includ-

ers can use it to highlight importan aspects of the environment, includ ing cause-effect and other connected sequences or routines.



As children learn to plan and carry out their play projects together and develop the patience to wait till later in the day or week to continue something they started, they are learning self-regulation. The teacher can promote this process by allowing lots of time for it, by showing respect for children's productive play, and by letting children continue a play project later.

Preschool and kindergarten children. Preschool and kindergarten children are increasingly capable of voluntary control of their emotions, their interactions with others, and their problem-solving activities. They can focus attention for longer periods, follow more complex directions, and comply with rules more reliably. They are increasingly able to interact cooperatively with peers.

Caregivers can support growing self-regulation by giving children age- and skill-appropriate responsibilities, allowing choices among appropriate social and cognitive activities, and encouraging independent learning and problem solving. Teaching strategies that help children feel competent and give them the tools to carry out tasks independently are also important.

During these years children are also internalizing the values and the standards of behavior and achievement of those around them. To assist internalization of positive and appropriate standards, caregivers can model positive behaviors, minimize exposure to violent or antisocial models, expect and encourage independent and responsible effort, and use guidance strategies that provide reasons for rules and help children understand the consequences of their actions.

Primary school children. Primary school children have more advanced self-regulatory skills and are becoming more consciously aware of their ability to control their actions and thoughts. Support for self-regulation in learning tasks can now include providing more complex strategies for problem solving such as decoding strategies for reading. Teachers can also help children become consciously aware of when and how to use specific strategies.

Primary school children's growing awareness makes them more vulnerable to external events and judgments that threaten their feelings of competence and control. They are beginning to compare themselves to others and to use internal standards for judging their behavior and achievements. The challenges posed by formal schooling can lower children's perceived control and willingness to try if there is an overemphasis on competition or external standards that they cannot reach. Teachers can support self-regulated learning by allowing individual choices among appropriately challenging alternatives and providing assistance in ways that support a child's independent effort and perceived control over the outcome.

Primary school children are more interested in and affected by influences outside the family and school environment than are younger children, Peer Judgments and standards become more important. A history of positive, trusting, and mutually respectful relatious with adults; guidance strategies that promote mutual respect and problem solving; and continuing positive expectations for responsible behavior help children direct their behavior appropriately and resist negative influences.

Summary

Children learn self-regulatory skills in a responsive social and material environment (but provides opportunities for effective action and is predistable enough to allow children to recognize the effects of their efforts. They develop internal control of emotions and behavior in a warm and trustworthy environment where responsible action is modeled, approved, and expected and midance strategies involve clarilying the effects of actions and a problem-solving approach to difficulties or disagreements. Opportunities to make meaningful choices and assistance in developing strategies for carrying out independent social and learning activities also support the growth of self regulation in young children.

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