

Guiding Young Children's Acquisition of Self-Regulation Skills

by Wanda Boyer, MC, PhD, RCC, ISPE Mentor

1. Introduction

Every day we meet challenges in life that have the potential to disrupt our peace and feed our mental discontent because we hope for positive circumstances, and we fear negative circumstances because we want to avoid suffering and pain.¹ Behaving well when circumstances try our patience requires us to be self-aware and observant of the triggering disturbances and open to seeking to change our hearts and minds. Where and how does this self-regulatory ability begin to develop?

Behavior problems emerging in early childhood often endure into adulthood and have been related to various aspects of parent-child and teacher-child relationships.² In contrast, an early ability to self-regulate has been identified as having positive long-term effects on society and is correlated with healthy life choices and greater competencies in cognitive, emotional, prosocial, moral, and physical areas of life.³

This paper is about how readers, who may be parents, grandparents, caregivers, or educators, can assess and therefore help to guide the acquisition of self-regulatory skills of three- to five-year-old children in their care. This discussion of the acquisition of self-regulation, including concepts, tables, figures, and participants' contributions and quotes, is extracted from my research, which appeared in the *Early Childhood Education Journal*.⁴

2. Researching Self-Regulation in Young Children

Relative to the 1811 view of self-regulation as acting based on personal volition, there has been an evolution in the operational definition of self-regulation for young children.⁵ Advancing from this individual perspective of self-regulation, researchers recognized the importance of considering how social interactions with caregivers impact self-regulation. In a social constructivist theoretical framework by Kopp, self-regulation in young children is defined to be the ability to initiate, modulate, or cease behaviors to comply with caregiver standards.⁶

Currently, there is an interest in assessing a child's development of self-regulation. However, there is a challenge with assessment due to varied conceptual definitions of self-regulation that have been developed, since Kopp's framework, that have had varied purposes associated with the assessment of self-regulation.⁷ Furthermore, the self-regulation tools constructed by researchers have been either the result of evaluating a child's self-regulatory skills in laboratory settings or self-reporting of educators and or parents about the generalized self-regulatory responses of children, rather than direct observation of a young child's naturalistic play experiences in the preschool environment.

To address the definitional and conceptual issues associated with assessing self-regulation in early childhood, I started with Kopp's social constructivist theoretical framework as a foundation

for a research study to develop a new Self-regulation Assessment Scale for Early Childhood (SASEC).

3. Getting to Know the Children, Their Families, and Their Educators

In the research study, there was a total of 315 participants, including 147 children of ages three to five years (from 143 families), 153 of the children's parents, and 15 early childhood educators across seven preschools located in the North American Pacific Rim. The children were individually videotaped in naturalistic play experiences in the preschool environment. Parents and educators participated in individual interviews about young children's self-regulation. Small groups of parents and, separately, the group of educators participated in focus group sessions about young children's self-regulation. All participants gave their ongoing informed consent, and the governing institutional ethics board approved the ethics application for the study. The seven preschool programs were co-educational and varied with full-day and half-day programs and both mixed and homogeneous age groups. The preschools were in urban and rural settings that included parent co-operatives and settings without parental involvement, and settings that were religious, spiritual, and neither.

The families of the children in the study consisted of 116 families with self-preferred ethnic designations of European ancestry and 27 families with other self-preferred ethnic designations. Based on employment data provided by the parents, there were 102 middle income families and 41 low-income families. The parents of the children had a mean age of 34-35 years, and an average of six years of parenting experience. Of the children's parents, 140 mothers and 13 fathers participated in the interviews and focus groups. The 147 children in the study had a mean age of 4.1 years and comprised 90 girls and 57 boys. There were 83 first-born children. There were 33 children with zero siblings, 86 with one sibling, and 28 with two or more siblings.

The 15 early childhood educators, within the preschool program, ranged in age from 28 to 56 years with a mean age of 45. Their self-preferred ethnic designations included Chinese (Mandarin speakers), European ancestry, First Nations, and multi-ethnic. The early childhood educators' years of service ranged from 1.5 to 23 years with a mean of 12 years, and their early childhood training ranged from 1 to 5 years with a mean of 2.5 years of training.

4. Grounded Theory Analysis

In this study, I used an exploratory sequential mixed methods research design as a way to hear the voices and thoughts of parents and educators as a foundation to the synergistic development of a new early childhood self-regulation assessment scale.⁸ In the qualitative phase of this research design, a grounded theory research method⁹ enabled me to obtain and thematically categorize the perspectives of the 15 early childhood educators and the 153 parents of the preschoolers into a core phenomenon and key propositions about early childhood self-regulation. Based on the core phenomenon and key propositions developed in the qualitative phase, I was then able to develop and quantitatively analyze the efficacy of a 12-item assessment tool, the SASEC, for assessing early childhood self-regulation based on observed behaviors in naturalistic play experiences within the normal preschool environment.

As a foundation for the qualitative phase of the research, the parents and educators participated in individual 45- to 60-minute audio-taped interviews in which they responded to 18 open-ended

interview questions that thematically covered child temperament, the processes involved in initiation, modulation, and cessation of activities, and strategies adults use to help children acquire self-regulatory skills. The 90- to 180-minute focus group sessions with parents and, separately, with educators had the group participants engaging in a synergistic group process of defining self-regulation by responding to 12 open-ended focus group questions on the effects of nature and nurture on self-regulatory skill development, the attitudes contributing to self-regulation, the developmental differences in self-regulatory skills across age groups, and the importance of self-regulation to the caregiving process for parents and early childhood educators. The grounded theory research included systematic steps to qualitatively analyze interview and focus group data. This grounded theory research analysis involved a process of open coding, axial coding, and selective coding.

4.1 Open Coding

Open coding is the first step in grounded theory research. In this study, it involved the synthesis of the voices of the parents and early childhood educators into categories. A grounded research theory zig-zag method of comparative and inductive analytic procedures was used to ground the categories in the contributions of the parents and educators, eliminate redundancy of contributions, and develop support for the categories.¹⁰ The five common descriptive categories consistently expressed by the parents and educators were:

- a) definitions of self-regulation,
- b) skills contributing to self-regulation,
- c) explanations of how self-regulation is acquired,
- d) explorations of the caregiver role, and
- e) parent and early childhood educator identification of the need for support.

The participants consistently *defined* self-regulation for preschool children by emphasizing interactions with people in various contexts and in various manners, as captured by one parent, who said it was defined as “learning how to control themselves in different contexts and with different people.” The participants then highlighted eight dimensionalized *skills* that they saw their children demonstrate and that they noted contributed to self-regulation. These skills are presented in the first column of Table 1 along with example quotes for each in the second column. As shown in the third column of Table 1, the self-regulation skills span the spectrum of developmental areas, including how self-regulation is acquired through physical, cognitive problem-solving, linguistic, social, emotional, and moral forms of expression.

Table 1: Skills Contributing to Self-Regulation in Early Childhood¹¹

Dimensionalized skill	Example quote	Developmental area
Constructively using physical energy	“to learn that exercise and fresh air is good for them and can help them channel their energy and eliminate the need to be impulsive or anxious” (Parent Interview)	Physical
Effortful control	“spending less time being mad or frustrated or not doing what you are supposed to do so that you can find the joy in life” (Parent Focus Group)	Cognitive problem-solving
Stability/Consistency	“knowing and establishing certain schedules and activities you can count on like when to eat and sleep or take a break” (Parent Interview)	Cognitive problem-solving
Communication	Expressing “needs and wants in clear non-violent language” (Early Childhood Educator Focus Group)	Linguistic
Patience	“practicing the ability to wait your turn.” (Early Childhood Educator Interview)	Social
Optimism	“A sense of hopefulness” (Parent Focus Group)	Emotional
Controlling reactions to events	“feeling more confident, like ‘Hey, I did it, I didn’t cry or shout. I’m very brave.’” (Parent Interview)	Emotional
Empathy	as a means of “helping children stop and think of others before taking things personally” (Early Childhood Educator Interview)	Moral

In considering the caregiver role, the parents and educators explained that *self-regulation is acquired* through “adult guidance,” “experiences with natural consequences for misbehavior,” being given “opportunities to practice empathy,” and “direct teaching of skills to resolve conflicts.” The participants then described the *caregiver role* as being a “role model,” “self-knowing,” and a purveyor of a “set of tools or strategies to monitor [one’s] behavior.” To take on the caregiver role, participants *identified the need for support*. They conveyed that they needed to understand the developmental progression of self-regulation skills and also how to synchronize and synthesize developmentally appropriate strategies of both early childhood educators and parents to meet individual children’s needs. Parents candidly and courageously highlighted the influences of their own self-regulatory responses to “stress, time limitations, and my child’s behavior ...” on the self-regulation of their children and their ability to support their child’s acquisition of self-regulation. They noted that they supported self-regulation through the lens and expression of their “own individual values and beliefs” and therefore have “a need for ongoing education about self-regulation.” As one parent elaborated, “I need to know about [the child’s] development and [how to structure environments] where my child can grow through play.” Other early childhood educators and parents advocated “direct teaching of skills” that enable children to articulate their personal emotions (“use your words”) and to resolve conflicts by discussing with children the “different expectations for appropriate behaviors in different contexts.”

4.2 Axial Coding

Axial coding is intended to grow or extend our understanding of a particular process. In this research study, the process being examined was early childhood acquisition of self-regulation, which was examined using parent and educator perspectives on children’s self-regulation. The results of the axial coding are presented in Figure 1. In axial coding, there is a core phenomenon, and there are (a) causal conditions that impact the core phenomenon, (b) strategies, which are the specific actions or interactions resulting from the core phenomenon, (c) context and intervening conditions that influence the strategies, and (d) consequences that are the outcomes of employing the strategies. In the center of the process, the core phenomenon is the ability of adults to fulfill the caregiver role. The adult participants in this study were most concerned with their ability to model and teach self-regulation skills to the child or children in their care. The causal conditions leading to their concerns were the events or opportunities for a child in their care to demonstrate self-regulation skills in various learning and living contexts. The adult participants candidly indicated that they needed help to fulfill the caregiver role of promoting self-regulation skills. A general intervening condition that adult participants found important was a clear and comprehensive definition of self-regulation. Adult caregiver alignment with a high-precision definition of self-regulation can guide and influence all strategies for promoting self-regulation skills. As more specific contextual conditions that can affect the strategies of informed support, the adult participants highlighted specific skills contributing to self-regulation and a need for explanations of how those skills can be acquired. Based on their having the informed support necessary to help fulfill their caregiver role, adult participants expected as the outcome that their child would learn the self-regulation skills needed to help resolve the internal conflict between the child’s wants and needs and adults’ expectations.

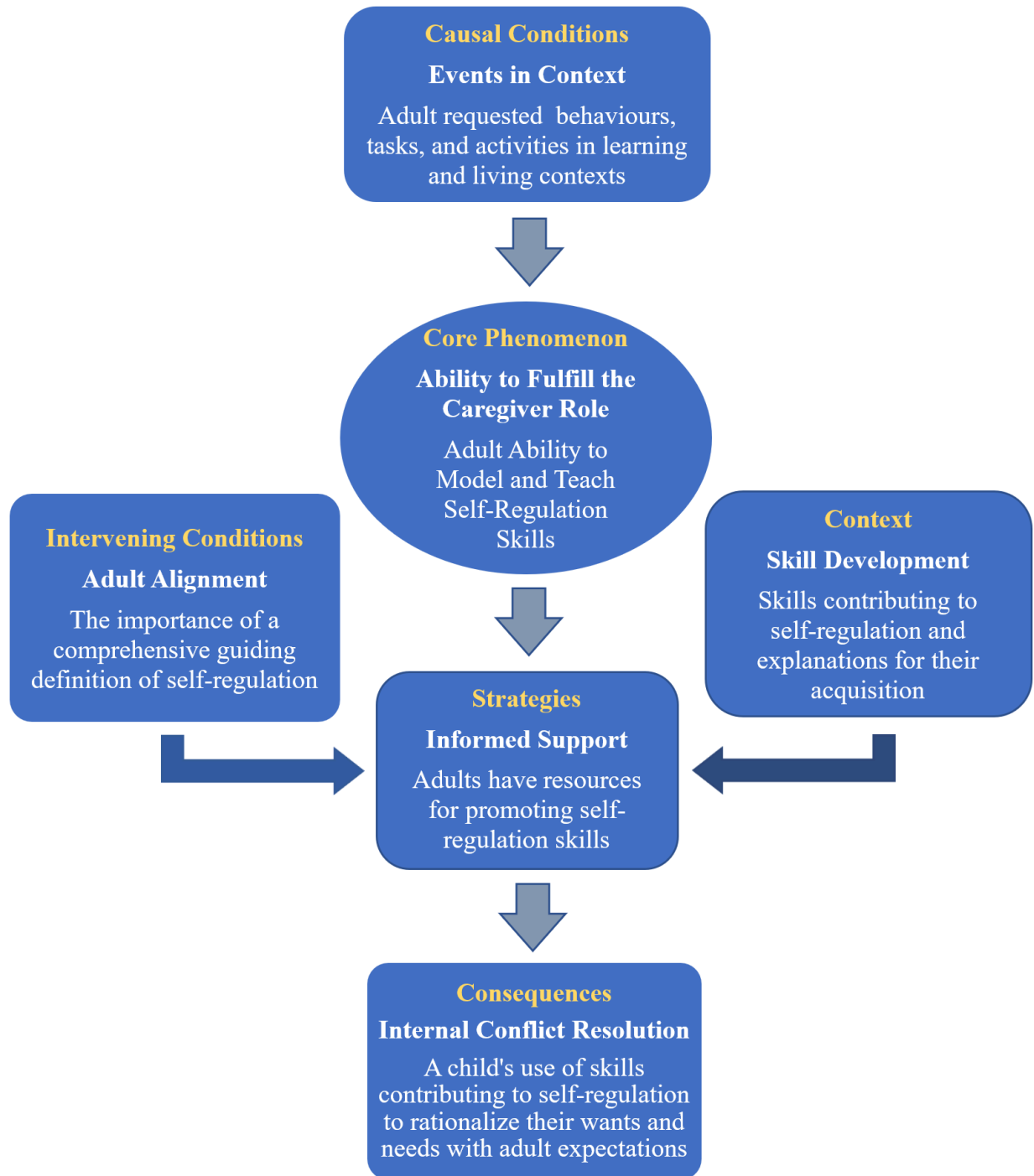


Figure 1: Axial Coding of Parent & Educator Perspectives on Children’s Self-Regulation¹²

4.3 Selective Coding

According to grounded theory research procedures, the next step is selective coding, in which the grounded theory researcher writes a narrative that more fully interconnects the categories in the axial coding paradigm.¹³ The narrative examines the factors that have influenced the phenomenon leading to more specific strategies and outcomes. Ultimately, in this study, I generated propositions and ideas to guide the formulation of a self-regulation assessment tool for early childhood. According to the parents and educators in this study, they believed that it was important for them to be able to model and teach self-regulation skills to their children. However, they noted that they need more support to be successful. They identified a need to know the specific skills that contribute to self-regulation as well as how those specific skills are acquired. More generally, they noted a lack of a comprehensive guiding definition for self-regulation. Looking across the content from focus groups and interviews, adults recognized parts of but not a whole, comprehensive definition of self-regulation that accounts for: (a) initiating, modulating, and ceasing as distinct notions; (b) differences in the degree of difficulty or the social configuration, and (c) the effects of limiting conditions on the ability to self-regulate.

This observation about the adults' need of a comprehensive, guiding definition of self-regulation led to the following selective coding propositions related to modeling and teaching scenarios for early childhood development of any specific self-regulation skill:

1. Initiating, modulating, and ceasing are distinct and fundamental aspects that must each be emphasized.
2. Skills can be developed incrementally through variations of complexity, such as the degree of difficulty or the social configuration of a behavior, task, or activity.
3. Skills can be refined based on limiting conditions such as being at specified time, speed, or location, or with specified materials.¹⁴

5. Assessing Young Children's Self-Regulation

The three propositions I derived from the qualitative grounded theory analysis advanced the definition of self-regulation in young children. *Self-regulation in young children is*

the ability to comply with caregiver standards in naturalistic settings by initiating, modulating, and ceasing behaviors, tasks, or activities of varied difficulty levels, social configurations, and limitations on time, speed, location, or materials.¹⁵

This nuanced definition, based on the propositions, can be used to develop any educative curriculum and assess its efficacy relative to the intent of improving young children's acquisition of self-regulation skills. Specifically, one could assess whether the curriculum offers opportunities for initiating, modulating, and ceasing. One could assess whether these opportunities are offered at various difficulty levels and social configurations. And one could assess whether various opportunities are offered while constraining time, speed, location, or materials used during performance of behaviors, tasks, or activities in naturalistic settings.

In addition, this new definition of self-regulation guided the development of a 12-item Self-regulation Assessment Scale for Early Childhood (SASEC). Specifically, four items were devoted to each of initiating, modulating, and ceasing a behavior, task, or activity, and each subset of four items included variations of complexity, social configuration, or limiting conditions. The measurement of each SASEC item was specified to be a 5-point Likert scale based on the extent to which a child is observed to self-regulate in the situation specified by the item. The SASEC total score was defined to be the sum of the numeric ratings on the 12 items. The following sections provide an overview of the SASEC items and examples of behaviors adults may see their 3-to-five-year-old children demonstrating.¹⁶

5.1 Initiating

The first four items on the SASEC ask the parent, educator, and or researcher to consider a child's self-regulation as they initiate behaviors, tasks, or activities in familiar, challenging, partner or small group configurations. These four questions begin with activities that a child may experience on a regular basis and then incrementally encourage observers to note how the child reacts in more challenging and varied configurations where there may be more novelty and spontaneity and greater social interactions, requiring greater self-regulation for the child to exhibit the dimensionalized skills seen in Table 1.

Item 1. *How does the child respond when asked to do a familiar, routine behavior, task, or activity?*

For example, the activity of dressing, such as for the day or for recess, is familiar to the child. With a familiar activity such as dressing, a child may be lethargic or express reluctance, or the child may be quite willing and proactive to initiate expenditure of physical energy on various tasks in the activity, even if they need help on some parts like tying shoelaces.

Item 2. *How does the child respond when asked to do a challenging behavior, task, or activity?*

For example, a child may be asked to start working on a puzzle with 15 pieces during regularly scheduled activity center time, but the child may express reluctance or lack of effortful control due to lack of familiarity with how to start the puzzle (searching for corner and edge pieces, similar colors, shapes that fit together), or the child may be impatient to start a more desirable next activity, such as at the arts and crafts center or the gym center.

Item 3: *How does the child respond when asked to do a behavior, task, or activity with a partner or small group?*

For example, with a partner or in a small group, a child may be reluctant due to expecting to do a different activity, or expecting to do the activity on their own, without sharing or patience for others to take their turns, or empathy for someone they perceive as being less skilled and needing their help, or they may lack confidence or feel pessimistic about their ability to succeed at doing the activity.

Item 4. *How does the child respond when asked to do a behavior, task, or activity with a large group or the whole class?*

For example, when a child is a part of a larger group, they must practice patience and practice effortful control *to listen* to the story or directions *and wait* until the end of the story or directions to share their point of view, response, or ask a question.

5.2 Modulating

Items 5-8 on the SASEC ask the observer to consider a child's self-regulation as they are required to continue behaviors, tasks, or activities in a set location, with limited materials, or having to wait to hear directions for the next activity.

Item 5. *How does a child respond when asked to do or continue doing a behavior, task, or activity in a set location?*

For example, a child may not want to do or continue what they are being asked to do at a set location. This may be due to not liking the activity that is at a particular location, such as an arts and crafts center, or it may be due to a distraction at that location, such as a commanding view of the playground outside. The child may need to refocus or be directed to refocus and find some element of the activity that they find interesting or novel to add to their work.

Item 6. *How does a child respond when asked to do or continue doing a behavior, task, or activity with limited materials?*

For example, there may be only one box of crayons, one box of felt pens, one box of sparkles, and one bottle of glue for a group of five or six children. This may require the child to politely request materials, take turns, and share items, or they may need to be directed to do so.

Item 7. *How does a child respond when asked to do or continue doing a behavior, task, or activity slowly or quickly, or with lesser or greater speed, or within a time limit?*

For example, near the end of an activity or experience, an adult may give an advance warning that the activity is coming to an end, and they will be transitioning to the next experience. A child may need to modify how quickly or slowly they are doing the activity, which may or may not result in frustration or poor behavior.

Item 8. *How does the child respond when asked to wait and listen to directions for a behavior, task, or activity?*

For example, a child may not be appropriately using the indoor equipment, so the child must learn to modulate their use of the equipment by first *attending* to an adult who is reviewing how to use the equipment and *watching* the adult demonstrate safe behavior when using the equipment, and only then *proceeding* with safe use of the equipment.

5.3 Ceasing

The last four items, 9-12, on the SASEC are for behaviors, tasks, or activities that a child may be asked to *stop* because it is simply time to do so or because they are behaving inappropriately,

dangerously, or in a way that is distressing, bothersome, inconvenient to others, dangerous, or otherwise poses a challenge in a small or large group context.

Item 9. *How does the child respond when verbally or non-verbally asked to stop a behavior, task, or activity that is inappropriate at the time or distressing, bothering, inconveniencing, or endangering someone else?*

For example, a child may become impatient, angry, surprised, or inattentive when asked not to push another child out of the line to go out to the playground. A child will need to *stop pushing and take note* of being asked to line up without pushing so that everyone can safely leave the coatroom to go outside, *as well as take note the other child's reaction* to their distressing, bothering, inconveniencing, or endangering behavior, and *appropriately respond* to the other child's reactions by fixing the problem and keeping everyone's feelings in mind.

Item 10. *How does the child respond when asked to end a challenging behavior, task, or activity?*

For example, a child may disregard an adult's request to end the experience. They may walk away with the materials of the activity, put their hands over their ears, or turn their back on the adult when they are asked to stop doing a challenging activity in which they have become heavily invested. A child may require a lesser or greater amount of adult direction to get them to stop the experience and prepare to move on to the next experience.

Item 11. *How does the child respond when asked to end a behavior, task, or activity being done with a partner or small group?*

For example, a child may not know or remember that the end of an experience means clean up by everyone, so they may throw all of the materials that their partner or small group were using on the floor in disarray and walk away to another location. In response to the end of a behavior, task, or activity with a partner or small group, a child may require more or less direction to *stop the activity, attend to the adult directions* for clean up, *return their materials to their original location*, and *sit and wait* for further directions on the next experience.

Item 12. *How does the child respond when asked to end a behavior, task, or activity being done with a large group or the whole class?*

For example, a child will need to know that they are in a large group and that the purpose for the large group or whole class experience is for only three or four children per day to show or share their work or thoughts with the class. This will require that the child will sit and listen to directions, put up their hand to take a turn, and listen to the responses of other classmates if they are not chosen to share.

5.4 Rating the Items

The measurement of each SASEC item was specified to be a 5-point Likert scale based on the extent to which a child is observed to self-regulate in the situation specified by the item. Verbal frequency expressions for each rating from 1 to 5 were aligned with semantics documented by Bocklisch et al.¹⁷

For a rating of ‘1,’ labeled ‘Never/Almost Never,’ a child will remain uninvolved, uncommitted, distant (quiet, avoiding eye contact), or resistant (screaming, yelling, kicking, constantly moving, or giving directions to others) while starting, doing, or completing the behavior, task, or activity.

For a rating of ‘2,’ labeled ‘Infrequently/Occasionally,’ a child can do the behavior, task, or activity but will typically wait for someone to do it for them, or do it with them, or repeatedly model it for them. Direct, hands-on assistance is usually required.

For a rating of ‘3,’ labeled ‘Sometimes/About Half of the Time,’ a child can do the behavior, task, or activity and sometimes does. However, just as often, they may wait until someone explains or models the behavior then convinces the child with encouragement such as praise, prompting, or expressions of concern for their well-being while the child is doing the behavior, task, or activity.

For a rating of ‘4,’ labeled ‘Often/Frequently,’ the child will typically do what is asked and stay with the behavior until it is done. The child may check in with someone or need occasional reminders about the behavior, task, or activity.

For a rating of ‘5,’ labeled ‘Always/Almost Always,’ the child will do what is asked. They may initiate questions that help them finish a behavior, task or activity because they know what is expected, but may need some guidance on how to do what is expected. They will do this by seeking out opportunities to talk to an adult about the behavior, task, or activity, gain or maintain positive interaction, or to show they understand what to do or how to do it.

The SASEC items ranked using a 5-point Likert scale were based on verbal expressions, non-verbal behaviors, and operationalized definitions demonstrated by three-to-five-year-old children in naturalistic play experiences. More details about the ratings appear in Appendix B of the research paper.¹⁸

5.5 Total Score and Its Meaning

The SASEC total score for any child was defined to be the sum of the numeric ratings on the 12 items. For the purpose of validity assessment and normalization of the SASEC, the verbal and non-verbal behaviors of the three- to five-year-old participating children, as captured in the videotaped naturalistic play experiences, were rated using the 12 items. The initial inter-rater agreement was 89.63%, and all disagreements were discussed and resolved to produce revised consensus ratings, upon which the validity assessments and normalization were performed.¹⁹ Using advanced statistical techniques, the SASEC proved to have very high validity and reliability for measuring self-regulation of young children, and the children in this age range had a mean SASEC total score of 24.17 with a standard deviation of 12.493.²⁰

6. Conclusion

A first practical implication for parents, early childhood educators, and other adult caregivers is that it’s okay for a three- to five-year-old child to get ‘2’ as a rating on most or all of the SASEC items because that is developmentally consistent with this age group. Adult caregivers may take comfort in knowing that there is nothing inherently wrong with a preschool child that doesn’t often or always self-regulate. In this research, I also found that the average ratings for this age

group were independent of gender, socioeconomic status, and all other demographic variables included in the study.²¹ Hence, none of these possible differences in children need to be considered when assessing the magnitude of their self-regulation.

A second implication for parents, early childhood educators, and other adult caregivers is that there are important circumstances when a child may need to learn to initiate, modulate, or cease behaviors, tasks or activities. Contextual factors including task difficulty, varied social configurations, and limitations on time for completion, location, or available materials can impact the capability of a young child to self-regulate. These contextual factors have been included in the current definition of self-regulation for three-to-five-year-old children²² because they provide a more supportive understanding of how parents, early childhood educators, and other adult caregivers can create systematic, guided experiences for young children to acquire or refine self-regulatory skills and confidence.

NOTES

1. Dzigar Kongtrul, *Peaceful Heart: The Buddhist Practice of Patience*. Edited by Joseph Waxman (Boulder, CO: Shambhala Publications, Inc., 2020).
2. Wanda Boyer, "Development, Construct Validation, and Normalization of a New Early Childhood Self-Regulation Assessment Scale," *Early Childhood Education Journal* 51, no. 4 (2023): 627-640, <https://doi.org/10.1007/s10643-022-01310-9>
3. Ibid.
4. Ibid.
5. Yesman Post, Wanda Boyer, and Laura Brett, "A Historical Examination of Self-Regulation: Helping Children Now and in the Future," *Early Childhood Education Journal* 34, no. 1 (2006): 5–14, <https://doi.org/10.1007/s10643-006-0107-x>
6. Claire B. Kopp, "Antecedents of Self-Regulation: A Developmental Perspective," *Developmental Psychology* 18, no. 2 (1982): 199–214, <https://doi.org/10.1037/0012-1649.18.2.199>
7. Boyer.
8. Ibid.
9. John W. Creswell and Timothy C. Guetterman, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* 6th ed. (London, UK: Pearson Education, 2019).
10. Ibid.
11. Boyer, 632.
12. Boyer, 633.
13. Creswell and Guetterman.

14. Boyer, 633-634.
15. Boyer, 635.
16. Boyer, 637.
17. Franziska Bocklisch, Steffen F. Bocklisch, and Josef F. Krems, "Sometimes, Often, and Always: Exploring the Vague Meanings of Frequency Expressions," *Behavior Research Methods* 44, (2012): 144–157, <https://doi.org/10.3758/s13428-011-0130-8>
18. Boyer, 638.
19. Boyer, 631.
20. Boyer, 634.
21. Boyer, 634-635.
22. Boyer, 635.
23. Ibid.

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caregiver standards in naturalistic
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