

What is the Child Behavior Rating Scale?

The Child Behavior Rating Scale (CBRS; Bronson et al., 1990) is a teacher report measure of children's self-regulation and social skills.

- **Self-regulation skills:** skills that support children to manage their attention, emotions, and behaviors to adapt to the demands of the school environment (e.g., listen to others, follow expectations and multi-step directions, and stay focused on tasks).
- **Social skills:** skills that support children to successfully navigate interactions and build relationships with peers and adults (e.g., cooperate in a group, express thoughts and emotions, and resolve conflicts in a positive way).

The Virginia Kindergarten Readiness Program (VKRP) uses the CBRS to measure these two sets of skills because it has been proven to be reliable and valid across culturally diverse contexts.

CBRS at a glance

- The CBRS is a short rating scale that teachers complete outside of instructional time.
- It assesses a teacher's perception of a child's behavior with other children, adults, and materials and tasks in the classroom.
- It includes a set of 17 items that are completed using a rating scale from one to five to determine the frequency of certain behaviors.
- It takes approximately one to three minutes to complete per child using the online system.
- It is completed both in the fall and spring of pre-kindergarten and kindergarten with an option of assessing at mid-year.

CBRS Subscales and Versions

The Child Behavior Rating Scale (Bronson et al., 1990) is a teacher-report measure used to gather information about "a child's task behavior and social behavior with peers and adults" (Bronson et al., 1995, p. 260). The original measure is comprised of 32 items that ask teachers to rate the frequency with which individual children exhibit specific behaviors on a scale from one (never) to five (always). Eighteen items combine to form the Mastery Behavior Scale and 14 comprise the Social Behavior Scale, which together capture children's work-related skills and social skills, respectively (Lim et al., 2010a; Son et al., 2013).

The majority of studies using the CBRS, however, have utilized shorter variations of the measure. One of the most used variations was introduced by Matthews and colleagues (2009) and consists of 17 items that measure children's behavioral regulation as illustrated by two subscales. The Classroom Self-Regulation subscale is comprised of 10 items that assess teachers' perceptions of children's behavioral regulation during academic tasks (e.g., following directions, staying on task; See [Appendix A](#) for items); the Interpersonal Skills (we will refer to this as the Social Skills subscale throughout the rest of this document) subscale is comprised of 7 items that assess teachers' perceptions of children's behavioral regulation in social situations (e.g., respecting others, sharing; See [Appendix A](#) for items). This factor structure has been validated in other studies (e.g., Ponitz et al., 2009; Wanless, McClelland,

Acock, Ponitz, et al., 2011), and many who use the CBRS opt to utilize the items from the Classroom Self-Regulation subscale independently or in conjunction with those from the Social Skills subscale to assess children's behavioral regulation.

VKRP falls within this latter category and uses the 17 items from both subscales to assess teachers' perceptions of children's self-regulation and social skills. Scores are interpreted at the domain level, with the 10 items from the Classroom Self-Regulation subscale comprising the "self-regulation domain" and the 7 items from the Social Skills subscale comprising the "social skills domain."

Previous Uses of the CBRS

Function of the CBRS. The CBRS has been used as a measurement tool in studies exploring a wide range of topics, including those focusing on children's academic or social-emotional development (e.g., Lee et al., 1998; McClelland et al., 2007), the assessment of early childhood programs or interventions (e.g., Bronson et al., 1995; Schmitt et al., 2015), and the testing of other measures' psychometric properties (e.g., Meisels et al., 1995; Ponitz et al., 2008). In these studies, items from the CBRS have been utilized both to measure specific constructs (e.g., task behavior, work-related social skills, goal-oriented behaviors) and to measure overall classroom behavior more broadly.

Sample characteristics. The CBRS has been used to assess adults' perceptions of the behavior of children spanning a wide range of ages and across different cultural contexts. Of the studies reviewed, children ranged between the ages of 3 and 10 years, with the majority of studies focusing on those in preschool or kindergarten (see [Table 1](#) for summary). CBRS data have been collected across different settings, including childcare centers, preschools, Head Start programs, kindergarten classrooms, and elementary schools. The CBRS has been used in the United States and has also been validated and utilized across European (e.g., Albania, England, Iceland, Germany, Norway, and Romania) and Asian countries (e.g., China, Singapore, South Korea, and Taiwan; see [Table 1](#) for summary), among others.

Association with developmental outcomes. Studies have repeatedly identified the significant association between children's CBRS scores and their development of a wide range of outcomes. For example, CBRS scores have been associated with children's overall cognitive achievement (e.g., Lee et al., 1998), math (e.g., Wanless, McClelland, Acock, Chen, and Chen, 2011), vocabulary (e.g., Gestsdóttir et al., 2014), and literacy outcomes (e.g., Ponitz et al., 2008). Studies have also identified the relationship between children's CBRS scores and other important domains of school readiness, including attentional and inhibitory control (Kim et al., 2016; Yang & Lamb, 2014).

Psychometric Properties of the CBRS

Reliability. The CBRS has demonstrated good internal consistency. Initial analysis of the original 32-item CBRS yielded a test-retest reliability of .67 and an internal consistency (Cronbach's alpha) of .96 (Layzer et al., 1990). Additional studies using all CBRS items have produced similar results with alpha's ranging between .82 – .96 (e.g., Bronson et al., 1995; Son et al., 2013). Specifically, regarding the 17-item, two-factor structure proposed by Matthews et al. (2009) and utilized by VKRP, studies have produced Cronbach's alphas ranging between .89 – .95 (e.g., Moldovan & Bocoş-Binţinţan, 2016; Tindal et al., 2015). In further support of this two-factor structure, factor analyses show that the majority of the CBRS's variance can be captured through the Classroom Self-Regulation and Social Skills factors (42% and 10%, respectively; Matthews et al., 2009). This two-factor structure has been

replicated in multiple studies with high item loadings (.60 – .80) on factors both in the United States and abroad (e.g., Ponitz et al., 2009; Von Suchodoletz et al., 2013; Wanless et al., 2013). Internal consistency for the 10-item Classroom Self-Regulation subscale has consistently produced Cronbach’s alphas greater than .92 (e.g., Kim et al., 2016; Sung, 2014; Schmitt, 2014), while the Social Skills subscale has also shown relatively strong internal consistency (Cronbach’s alpha = .76 – .85; Von Suchodoletz et al., 2015; Ponitz et al., 2009).

Validity. The CBRS has strong construct and concurrent validity. The full 32-item measure is moderately correlated with the Bronson Social and Task Skill Profile (Bronson, 1996), an observational measure used to assess children’s classroom goal-oriented and regulatory behaviors (Ponitz et al., 2009). The CBRS has also shown to have high correlations with the Observed Child Engagement Scale (Rimm-Kauffman, 2005), another child observation tool (Schmitt et al., 2014). Regarding direct assessment measures of children’s self-regulatory skills, the CBRS has consistently produced significant correlations with the Head-Toes-Knees-Shoulders task (e.g., Ponitz et al., 2008; Wanless, McClelland, Acock, Chen, and Chen, 2011; Wanless, McClelland, Acock, Ponitz, et al., 2011) and the Head-to-Toes task (e.g., Birgisdóttir et al., 2015; McClelland et al., 2007). It has also shown a significant association with children’s scores on the Preschool Inventory (PSI), a direct assessment of children’s cognitive achievement (Bronson et al., 1995; Lee et al., 1998). The CBRS has been found to predict children’s pre-academic school readiness skills, including math achievement (Gestsdóttir et al., 2014; Schmitt et al., 2014) and literacy outcomes such as reading comprehension, vocabulary, and letter knowledge (Birgisdóttir et al., 2015; Gestsdóttir et al., 2014; Schmitt et al., 2014).

Use of the CBRS in VKRP

Of the statewide sample in 2023–24 (N = 82,000) of kindergarten children assessed using the CBRS, data demonstrated strong internal consistency. Overall, the 17-item measure yielded a Cronbach’s alpha of .96, and scores were similar across Self-Regulation and Social Skills subscales (Cronbach’s alpha of .97 and .92, respectively). Of the approximately 28,000 pre-kindergarten children assessed during the 2023–2024 school year, the CBRS also demonstrated strong internal consistency. Overall, the 17-item measure yielded a Cronbach’s alpha of .96, and the subscale scores of Self-Regulation and Social Skills were also internally strong (Cronbach’s alpha of .96 and .89, respectively). Additionally, in kindergarten and pre-kindergarten, subscale scores were moderately correlated with one another (Pearson Correlation values ranging between .68 - .69, $p < .001$).

Mental Health Well-Being Items

In addition to completing the 17 CBRS items, teachers also report on five items that focus on children’s mental health well-being (e.g., appears anxious) as well as a single item that captures teachers’ overall level of concern for each child’s social-emotional well-being. These Mental Health Well-being items were generated by social-emotional experts on the VKRP team and were developed in response to a need to better understand children’s mental health well-being during the pandemic. The items provide valuable information about children’s overall mental health that complements the CBRS self-regulation and social skills items. The Mental Health Well-being items demonstrate acceptable reliability (Cronbach’s alpha of .80) in the statewide sample.

Table 1
Studies Using the CBRS (N = 39)

Study	Study Location	Sample	Items/Scales Used	
Bronson et al. (1995)	United States	Preschoolers (N = 586)*	All items	
Brock et al. (2018)		Age: 5 – 6 (N = 87)* Kindergarten, First Grade	Self-Regulation subscale	
Doromal et al. (2019)		Age: 5 (N = 313)* Kindergarten	Self-Regulation subscale	
Duncan et al. (2017)		Age: 4 (N = 100) Preschool	Self-Regulation subscale	
Kim et al. (2016)		Age: 5 – 8 (N = 278) Kindergarten, First Grade	Self-Regulation subscale	
Kim et al. (2019)		Age: 5 – 8 (N = 117)* Kindergarten	Self-Regulation subscale	
Lee et al. (1998)		Age: 4 (N = 677)* Preschool	All items	
Matthews et al. (2009)		Age: 5 – 6 (N = 268) Kindergarten	Self-Regulation subscale	
McClelland & Morrison (2003)		Age: 3 – 5 (N = 72) Preschool	Mastery Behaviors subscale	
McClelland et al. (2007)		Age: 3 – 5 (N = 310) Preschool	Self-Regulation subscale	
Meisels et al. (1995)		Age: 4 – 6 (N = 86) Kindergarten	All items	
Ponitz et al. (2009)		Age: 4 – 6 (N = 343) Kindergarten	Self-Regulation subscale Social Skills subscale	
Ponitz et al. (2008)		Age: 3 – 6 (N = 445) Preschool	Self-Regulation subscale	
Schmitt et al. (2014)		Age: 3 – 5 (N = 247) Preschool	Self-Regulation subscale	
Schmitt et al. (2015)		Age: 3 – 5 (N = 276)* Preschool (Head Start)	Self-Regulation subscale	
Tamm & Peugh (2019)		Age: 3 – 5 (N = 243)* Preschool	Self-Regulation subscale	
Tindal et al. (2015)		Kindergartners (N = 1189)	Self-Regulation subscale Social Skills subscale	
Zelazo et al. (2018)		Age: 4 – 5 (N = 218)* Preschool	All items	
von Suchodoletz et al. (2015)		Albania	Age: 4 – 5 (N = 150)	Self-Regulation subscale Social Skills subscale
Howard et al. (2019)		Australia	Age: 3 – 5 (N = 80) Preschool	Self-Regulation subscale
Taylor & Butts-Wilmsmeyer (2020)	Canada	Age: 4 – 5 (N = 250) Kindergarten	Self-Regulation subscale	
Yang & Lamb (2014)	England	Age: 4 (N = 67)	All items	
Ludwig et al. (2016)	Germany	Age: 4 – 6 (N = 106)	Select items pulled	

Study	Study Location	Sample	Items/Scales Used
Gestsdóttir et al. (2014)	Germany, Iceland	Age: 5 – 6 (N = 181) Preschool	Self-Regulation subscale
von Suchodoletz et al. (2013)		Age: 5 – 6 (N = 301)	Self-Regulation subscale
Birgisdóttir et al. (2015)	Iceland	Age: 4 – 5 (N = 111) Preschool	Self-Regulation subscale
Birgisdóttir et al. (2020)		Age: 4 – 5 (N = 110) Preschool	Self-Regulation subscale
Keown et al. (2020)	New Zealand	Age: 3 (N = 212) Preschool	Self-Regulation subscale
Resaland et al. (2015)	Norway	Age: 10 (N = 1145)	Self-Regulation subscale
Moldovan & Bocoş-Binţinţan (2016)	Romania	Age: 7 – 10 (N = 41)	Self-Regulation subscale Social Skills subscale
Lim, Rodger & Brown (2010a)	Singapore	Age: 3 – 6 (N = 117)**	All items
Lim, Rodger & Brown (2010b)		Age: 3 – 6 (N = 117)**	All items
Ahn & Kwon (2005)	South Korea	Age: 5 – 6 (N = 167)	Mastery Behaviors subscale
Son et al. (2013)		Age: 3 – 6 (N = 229)	All items
Sung (2014)		Age: 4 – 5 (N = 214)	Self-Regulation subscale
Wanless, McClelland, Acock, Chen, & Chen (2011)	Taiwan	Age: 3 – 4 (N = 152) Preschool	Self-Regulation subscales
Sezgin & Demiriz (2019)	Turkey	Age: 4 – 5 (N = 53) Preschool	Self-Regulation subscale Social Skills subscale
Wanless, McClelland, Acock, Ponitz, et al. (2011)	China, Taiwan, South Korea, United States	Age: 3 – 6 (N = 814) Preschool	Self-Regulation subscale
Wanless et al. (2013)		Age: 3 – 6 (N = 814) Preschool	Self-Regulation subscale

Note. *Indicates sample of low socio-economic status. **Indicates portion of sample with disability.

Number of studies using:

- 3-year-olds: ~15
- 4-year-olds: ~27
- 5-year-olds: ~31
- 6-year-olds: ~17
- 7-year-olds: 2
- 8-year-olds: 2
- 9-year-olds: 1
- 10-year-olds: 2

Appendix A

Factor Structure of CBRS Items (Matthews et al., 2009)

Classroom Self-Regulation

- Observes rules and follows directions without reminders
- Completes learning tasks in an organized way
- Completes tasks successfully
- Attempts new and challenging tasks
- Concentrates when working, not easily distracted
- Responds to instructions and begins appropriate task
- Takes time to do his/her best work
- Finds and organizes materials
- Sees own errors on task and corrects them
- Returns to unfinished tasks after interruption

Social Skills

- Willing to share
- Expresses hostility—Verbally
- Expresses hostility—Physically
- Cooperates with playmates
- Takes turns without being told to do so
- Complies with adult directives—With little or no resistance
- Does not fuss when doesn't get teacher's attention

Remaining Items not included in the 17-item version of the CBRS

- Joins in play with others
- Comforts peers
- Plays with other children
- Offers suggestions for play
- Suggestions for play are accepted by other children
- Engages in pretend play
- Resolves potential social conflicts
- Initiates social interaction with adults
- Can deal with normal criticism or teasing
- Tries to solve a problem before asking for help
- Shows satisfaction when completes a project
- Feels s/he can cope well with classroom situations
- Interested in trying new activities, games, etc.
- Conveys confidence about being able to succeed
- Shows enthusiasm for activities

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