

Design Options for Home Visiting Evaluation

MEASUREMENT TOOL BRIEF

Ages & Stages Questionnaires®, Third Edition (ASQ-3™) Ages & Stages Questionnaires®, Social-Emotional (ASQ:SE)¹ Information and Guidelines for Use in Meeting MIECHV Benchmark Area Measurement Requirements

June 2012

Overview

Many Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program grantees have proposed to use the *Ages & Stages Questionnaires®, Third Edition (ASQ-3™): A Parent-Completed Child Monitoring System*² and/or the *Ages & Stages Questionnaires®: Social-Emotional (ASQ:SE): A Parent-Completed, Child-Monitoring System for Social-Emotional Behaviors*³ to measure progress on Benchmark Area 3 (School Readiness & Achievement) constructs. **As part of the provision of technical assistance to funded grantees, the intent of this document is to describe the ASQ-3 and ASQ:SE and outline appropriate uses of the instruments in meeting MIECHV Benchmark Area measurement requirements.**

This issue brief describes the purpose, format, and administration first of the ASQ-3 and then of the ASQ:SE. Training costs for both are summarized. A table then illustrates the potential use of each tool in assessing Benchmark Area 3 constructs.

The ASQ-3

The ASQ-3 is a screening tool designed to identify those infants and young children (ages 1 - 66 months) who may be eligible for early intervention or early childhood special education services. In other words, the ASQ-3 is used to screen children to assess if they are or are not displaying typical development for children of their age.

¹ Ages & Stages Questionnaires® is a registered trademark and ASQ-3™ is a trademark of Paul H. Brookes Publishing Co., Inc.

² Squires, J., Twombly, E., Bricker, D., & Potter, L. (2009). *The ASQ-3™ User's Guide*. Baltimore, MD: Paul H. Brookes Publishing Co., Inc.

³ Squires, J., Bricker, D., & Twombly, E. (2002). *The ASQ:SE User's Guide for the Ages & Stages Questionnaires®: Social-Emotional: A parent-completed, child-monitoring system for social-emotional behaviors*. Baltimore, MD: Paul H. Brookes Publishing Co., Inc.

The ASQ-3 consists of questionnaires to be completed by parents or other primary caregivers who know the child well (e.g., grandparents, foster parents, and child care providers).⁴ Parents complete one of 21 questionnaires, depending on their child's age. Questionnaires are available for children of 2, 4, 6, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54, and 60 months of age. Parents can complete the questionnaire during a home visit, or on their own and then mail or share the form with their home visitor during their next visit.⁵

The *ASQ-3™ User's Guide* recommends that children be screened initially at 2 and 4 months, then at 4-month intervals until they reach 24 months of age, and then at 6-month intervals until they reach 5 years. Other than the initial screenings at 2 and 4 months, screening more frequently than every 4-6 months is not recommended unless reasons suggest that more frequent screening would be useful (e.g., the parent is concerned about a change in the child; the child has been seriously ill).

Areas of the ASQ-3

Each ASQ-3 questionnaire consists of 30 developmental items that fall into five areas, or subscales:

- Communication: child's babbling, vocalizing, listening, and understanding
- Gross Motor: child's arm, body, and leg movements
- Fine Motor: child's hand and finger movements
- Problem Solving: child's learning and playing with toys
- Personal-Social: child's solitary social play and play with toys and other children.

The last section of each questionnaire asks parents to reflect on any general concerns they may have about their child's development.

Format of the ASQ-3

Each of the 21 questionnaires is labeled to make it clear for what age of child it is appropriate to use (e.g., the 36-month questionnaire is to be used from 34 months 16 days through 38 months 30 days). The 30 items on each questionnaire are clustered into the developmental domain to which they pertain (e.g., all five Communication items are listed together) and arranged with the easiest developmental items first. Each item asks the parent to reflect on a specific child behavior and report if the child is doing the activity regularly (coded as "yes"), "sometimes," or "not yet." Items are written at a 4th-6th grade reading level. Parents can complete the questionnaire in about 10-15 minutes. Questionnaires are

⁴ The term "parent" is used throughout this issue brief to refer to all primary caregivers.

⁵ The ASQ-3 and ASQ:SE can also be administered in center-based settings (e.g., child care or preschool programs, family resource centers, physicians' offices, etc.).

available for purchase in English and Spanish. In addition, field-test versions are available in French, Korean, Chinese, and Vietnamese.

Administration of the ASQ-3

Questionnaires can be distributed to parents through the mail, at centers or health clinics, or during a home visit. Parents may be able to complete some items in the ASQ-3 by remembering what they have seen their children do, but parents are encouraged (and some items require parents) to observe their children's behavior directly, sometimes using objects around the house or that the home visitor may bring for this purpose. For example, at 24 months, a Fine-Motor item is "Can your child string small items such as beads, macaroni, or pasta "wagon wheels" onto a string or shoelace?" Service providers (e.g., home visitors) can provide parents with support as needed, such as reading items together with a parent who has very low literacy skills.

As described above, the appropriate questionnaire is selected based on the child's age, with adjustments made up to 24 months of age for children born preterm. The *ASQ-3™ User's Guide* provides detail on when and how to make the appropriate adjustments (see also <http://agesandstages.com/age-calculator/>).

Questions deemed by parents to be inappropriate for their families can be omitted (e.g., a question concerning whether children can identify themselves in a mirror would be omitted if families do not use mirrors with their children). Scoring is then adjusted to account for the omitted item(s). However, if more than two items in an area are omitted, the entire area is skipped when scoring the questionnaire. The *ASQ-3™ User's Guide* provides guidance on scoring questionnaires with omitted items.

Scoring of the ASQ-3

Scoring takes approximately 2-3 minutes and can be done by hand or using a web-based system. Scoring may be completed by a professional or paraprofessional staff person who has been trained in scoring and the measure itself. Home visitors can calculate the results in the office and then talk them over with parents during the next home visit. Or, because of the ease of scoring, home visitors can score and discuss the results during the same home visit in which the parent completes the ASQ-3.

When scoring, items coded as "yes" receive 10 points; items coded as "sometimes" receive 5 points; and items coded as "not yet" receive 0 points. Thus, each area can total 60 points (6 items x 10 points/item). Scoring sheets list a cutoff score for each of the five developmental

domains, as well as a range of scores that may indicate some concern.⁶ If a child's score in one or more domains falls on or below the cutoff, it is recommended that the child be referred for further assessment. If the child's score in one or more domains falls into the region of concern, it is recommended that the child be monitored (which may mean more frequent screenings than typically recommended), and activities designed to bolster the child's development could be recommended to the parents. In addition, if a child has scores above the cutoff score for each area but the parent has indicated a concern in the "Overall" section of the questionnaire, the child could be referred for additional services, depending upon the judgment of the home visitor/home visiting agency.

Psychometrics of the ASQ-3

Reliability

Reliability estimates the consistency and stability of a measurement, or, more simply, the degree to which an instrument measures something the same way each time it is used under the same conditions with the same subjects. In general, four commonly used cut-off points for reliability include: excellent reliability (.90 and above), high reliability (.70-.90), moderate reliability (.50-.70) and low reliability (.50 and below). In the social sciences, reliability estimates above .70 are considered acceptable (Nunnally & Bernstein, 1994).⁷ Several methods were used to assess the reliability of the ASQ-3:

- Test-retest reliability was examined by comparing the results of parents who completed two questionnaires about their child within a two-week interval. Results indicated excellent reliability, with 92% agreement on classification (i.e., children were typically developing or not). Intra-class correlations across the areas and age ranges suggest high reliability, with coefficients ranging from .75 to .82.
- Inter-rater reliability was examined by comparing the results of parent ratings with those of a trained examiner for the same child. The percent agreement on classifications (i.e., ASQ-3 results from the parent and the examiner agreed on whether the child was typically developing) was 93% (excellent reliability). Intra-class correlations across areas and ages ranged from low to moderate. Coefficients ranged from .43 to .69, with the weakest agreement for the Communication area and the strongest agreement for the Personal-Social area.
- Internal consistency, or the extent to which different items that propose to measure the same general construct produce similar scores, was moderate to high for developmental area scores at 20 different age intervals (coefficients ranged from .51 to .87).

⁶ Cut-off scores indicating that the child should be referred for additional assessment are located two standard deviations below the mean for the domain, and the region of concern is located between one and two standard deviations below the mean, based on data from more than 18,000 questionnaires from children nationally.

⁷ For more information see Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.

Validity

A valid measure is one that measures the concept it was intended to measure. Validity, then, refers to the accuracy of measurement. Validity for the ASQ-3 was established by comparing non-risk groups' and risk groups' performance on the questionnaires. This approach was also used to establish the cut-off scores for the ASQ-3.⁸

Concurrent validity, the extent to which a measure predicts present behavior, was established by comparing the classification of children based on their performance on the ASQ-3 and on another standardized test, the Battelle Developmental Inventory (BDI). Two groups of children participated: those who were already receiving IDEA services because they had been identified as developing atypically, and those who were not and were assumed to be typically developing. Agreement between the ASQ and the BDI across the age ranges and developmental areas were high⁹, ranging from 82.6% to 88.9% agreement.

The higher the sensitivity and specificity of a given measure, the greater the accuracy of that measure. The sensitivity of a measure refers to the degree to which an instrument correctly identifies those individuals who have a specific condition, while the specificity of a measure refers to the degree to which an instrument correctly identifies those individuals who do not have a specific condition. The ASQ-3 has been shown to demonstrate moderate levels of sensitivity (82.5-89.2%) and specificity (77.9-92.1%).

Psychometrics with Special Populations

According to the *ASQ-3™ User's Guide*, testing has indicated that, for the most part, English and Spanish items function similarly for young children, and research is continuing. However, separate cut-off points have not been empirically derived for Spanish-speaking children.

American Indian and Alaskan Native children were included in the sample of children who were involved in establishing the reliability and validity of the ASQ-3, but the developer did not conduct separate analyses for these children.

The ASQ:SE

The ASQ:SE assesses children's social and emotional competence and is designed to complement the ASQ-3. It is a screening tool that identifies infants and young children (ages 3-66 months) whose social or emotional development requires further evaluation to determine if referral for intervention services is necessary. As defined in *The ASQ:SE User's*

⁸ ASQ scores of children with risk factors such as poor birth outcomes, poverty level, young mothers, and low maternal education were compared with scores of children who did not have such risk factors, across all age ranges and for all developmental areas. The authors identified cut-off scores that differentiated the two groups, which resulted in establishing a cut-off of 2 standard deviations below the mean (see the *ASQ-3™ User's Guide*).

⁹ For more information see Kaplan, R.M. and Saccuzzo, D.P. (2001). *Psychological Testing: Principles, Applications and Issues (5th Edition)*. Belmont, CA: Wadsworth.

Guide, social competence is defined for purposes of assessment as “the child’s ability to use a variety of communicative and interactive responses to effectively manage his or her social environment.” Emotional competence is defined as the “managing or regulating of one’s emotional responses to obtain desired goals in ways that are acceptable to others.”

The ASQ:SE consists of eight questionnaires that, like the ASQ-3, are to be completed by parents or other primary caregivers who know the child well (e.g., grandparents, foster parents, or child care providers with a minimum of 15-20 hours per week of contact with the child). At each administration, parents¹⁰ complete one of the eight questionnaires, depending on their child’s age. Questionnaires are available for children of 6, 12, 18, 24, 30, 36, 48, and 60 months of age. Questionnaires vary in length from 19-33 items, with the questionnaires for the oldest children having the most items.

Areas of the ASQ:SE

Each ASQ-SE questionnaire contains developmental items that fall into seven areas:

- Self-regulation: child’s ability or willingness to calm or settle down, or adjust to physiological or environmental conditions/stimulation
- Compliance: child’s ability or willingness to conform to the direction of others and follow rules
- Communication: child’s ability or willingness to respond to or initiate verbal or nonverbal signals to indicate feelings, affective, or internal states
- Adaptive functioning: child’s success or ability to cope with physiological needs (e.g., sleeping, eating, elimination, safety)
- Autonomy: child’s ability or willingness to self-initiate or respond without guidance (i.e., moving to independence)
- Affect: child’s ability or willingness to demonstrate his or her own feelings and empathy for others
- Interaction with people: child’s ability or willingness to respond to or initiate social responses to parents, other adults, and peers.

The last section of each questionnaire asks parents to reflect on any general concerns they may have about their child’s development.

¹⁰ The term “parents” is used throughout to refer to primary caregivers.

Format of the ASQ:SE

Each of the eight questionnaires is labeled to make it clear for what age of child it is appropriate to use (e.g., the 36-month questionnaire is to be used for children ages 33-41 months). In contrast with the ASQ-3, which clusters items on each questionnaire into the developmental domain to which they pertain, the ASQ:SE does not identify which items are associated with which construct, and there are not an equal number of items per construct included in each questionnaire. A table in the *User's Guide* does separate items across all eight questionnaires into the seven construct areas, but the authors note that the placement of items is somewhat arbitrary. Each item on a questionnaire asks the parent to rate the frequency with which a child undertakes a particular behavior (i.e., “most of the time,” “sometimes,” or “rarely or never.”). Four open-ended questions at the end of each questionnaire explore other parent concerns about their children’s social-emotional development. Items are written at a 5th-6th grade reading level. Parents can complete the questionnaire in about 10-15 minutes. Questionnaires are available in English and Spanish.

Administration of the ASQ:SE

Questionnaires can be distributed to parents through the mail, at centers or health clinics, or during a home visit. Parents can complete the questionnaires during a home visit, or they can complete the questionnaire on their own and then mail or share the form with their home visitor during their next visit. Questions deemed by parents to be inappropriate for their families can be omitted, and scoring is adjusted to account for the omitted item(s).¹¹

Scoring of the ASQ:SE

Scoring takes approximately 2-3 minutes and can be done by hand or via a web-based system, either by a paraprofessional or a professional staff person who has been trained in the system. Items are awarded 0, 5, or 10 points, with the higher scores indicating potential concerns. In addition, any item for which the parent indicates a concern is awarded an additional 5 points. Scoring sheets list a cutoff score for the *overall* measure. **This contrasts with the ASQ-3 in two ways: (1) The ASQ-3 lists cutoff scores for each developmental domain, whereas the ASQ:SE yields only a single score; and (2) scores on the ASQ-3 at or below the cutoff indicate children could have a developmental delay, whereas scores above the cutoff on the ASQ:SE indicate the child could have a developmental delay.**

On the ASQ:SE, if the total score is above the cutoff, the *User's Guide* recommends referring the child for diagnostic social-emotional or mental health assessment, or providing the parent with support and continuing to monitor the child using the ASQ:SE. If the score is near the

¹¹ Scoring adjustments are permitted if no more than two questions are left unanswered on the 6 to 18 month intervals or three questions on the 24 to 60 month intervals.

cutoff, which indicates the child *may* have a delay, the recommendation is to refer or provide the parent with information, support, and continued monitoring using the ASQ:SE. If the score is below the cutoff, which indicates that the child does not have a delay, then the ASQ:SE could be used again at a regular interval to see if the child continues to develop typically.

If a child scores below the cutoff score, but the parent has nevertheless indicated a strong overall concern or concern about a specific behavior, then the child could be referred for additional services, depending upon the judgment of the home visitor/home visiting agency.

Psychometrics of the ASQ:SE

Reliability

- Test-retest reliability was examined by comparing the results when parents completed two questionnaires about their child, separated by a 1- to 3-week interval. Results indicated excellent reliability, with 94% agreement on classification (i.e., children were typically developing or not).
- Inter-rater reliability (based on results of questionnaires completed by two professionals) was also very high, with greater than 95% agreement.
- Internal consistency coefficients, calculated for each ASQ:SE age interval, were moderate to excellent, with coefficients ranging from .67 to .91.

Validity

Concurrent validity was established by comparing the performance of a typical group and an identified group on the ASQ:SE with their scores on either the Vineland Social Emotional Early Childhood Scale, the Achenbach Child Behavior Checklist, or actual prior clinical diagnosis. Reported values indicate excellent concurrent validity¹² with scores ranging from 88% agreement in classification at 30 months to 94% at 60 months, with an overall agreement of 92%. Furthermore, the ASQ:SE was found to have moderate sensitivity and high specificity. Sensitivity (the ability to accurately identify children with social-emotional difficulties) ranged from 71% to 85%, with an overall value of 78%. Specificity (the ability of the tool to accurately identify those children without social-emotional delays) ranged from 90% to 98%, with an overall value of 94%.

Psychometrics with Special Populations

Although the ASQ:SE has been translated into Spanish, the translated questionnaires were not included in ASQ:SE reliability or validity analyses.

American Indian and Alaskan Native children were included in the sample of children who were involved in establishing the reliability and validity of the ASQ:SE, but the developer did not conduct separate analyses for these children.

¹² For more information see Kaplan, R.M. and Saccuzzo, D.P. (2001). *Psychological Testing: Principles, Applications and Issues (5th Edition)*. Belmont, CA: Wadsworth.

Use of the ASQ-3 and ASQ:SE for MIECHV Benchmark Area Measurement

The ASQ-3 was designed as a screening tool, and the *User's Guide* notes that it “should *not* be used to show whether a child or children in a class are making progress” (p. 92), because its validity for that use has not been established. In addition, since it is a screening tool, it is not sensitive enough to show progress toward outcomes for individual children. On the tool's website (www.agesandstages.com/ask-jane/), the ASQ-3's developer further states that some programs may seek to use the tool for progress monitoring of a group of children for reasons of time or cost, and that, while not the measure's intended use, doing so may be superior to using a measure that lacks adequate psychometric data or conducting no progress monitoring at all. Nevertheless, the developer states, “If you choose to use ASQ-3 for purposes other than developmental screening, we advise you to qualify the outcome or results by noting the use of ASQ and how the choice may potentially affect the outcomes.”

Therefore, the most appropriate use of the ASQ-3 in assessing outcome-oriented performance measures for Benchmark Area 3 constructs is reporting the percentage of children who score above, below, and/or in the zone of concern for each of the areas rather than comparing area scores over time for individual children or for different cohorts. Even so, it is important to note, as the developer states, that this is not the specific purpose for which the ASQ-3 was designed, and the instrument may not be sensitive enough to detect small changes over time.

Similarly, grantees using the ASQ:SE should report the percentage of children scoring above or below the cutoff, rather than comparing children's numerical scores over time. This is of critical importance for the ASQ:SE, because, as mentioned above, the number of items included on the ASQ:SE questionnaire differs by age of child, and so comparison of numerical scores over time would not be meaningful. Ratio scores may also be used to track progress.

Costs for the ASQ-3 and ASQ:SE

As of 2012, the ASQ-3™ Starter Kit costs \$275. The kit includes the *ASQ-3™ User's Guide*, paper masters of the 21 questionnaires, a CD-ROM with printable PDF questionnaires, and a laminated Quick Start Guide. Separate versions of the Starter Kit are available for questionnaires in English or Spanish. The ASQ-3™ Starter Kit in Spanish includes the *ASQ-3™ User's Guide* in English (a Spanish translation of the User's Guide is not available). A set of paper masters and a CD-ROM with printable PDFs of the 21 questionnaires (available separately in English or Spanish) can be purchased for \$225.

As of 2012, the ASQ:SE Starter Kit costs \$225. It includes *The ASQ:SE User's Guide*, paper masters of eight questionnaires, and a CD-ROM with printable PDF questionnaires. Separate versions of the Starter Kit are available for questionnaires in English or Spanish. The ASQ:SE Starter Kit in Spanish includes *The ASQ:SE User's Guide* in English (a Spanish translation of the

User's Guide is not available). Paper masters and a CD-ROM with printable PDFs of the eight questionnaires (available separately in English or Spanish) can be purchased for \$175.

Training for the ASQ-3 and ASQ:SE

Training is highly recommended for use of the ASQ-3 and ASQ:SE. Introduction and Comprehensive seminars are available at a site selected by the organization, can last 1-3 days (depending upon the needs of the organization), and can accommodate up to 40 participants per seminar. Costs range from \$1,750 to \$2,500 for one day and \$3,000 to \$3,500 for two days. Training-of-Trainers seminars, also available on-site, are higher and have a maximum attendance of 25. In addition, the publisher hosts ASQ-3 and ASQ:SE training institutes in locations around the country (see www.brookesonlocation.com). Training DVDs, including a DVD on the use of the ASQ-3 during a home visit, are available for \$49.95 each.

Data Management of the ASQ-3 and ASQ:SE

Programs may purchase a subscription to a web-based management and online questionnaire completion system. For more information, see www.agesandstages.com.

For more information about the ASQ-3 or ASQ:SE, please access the website links below:

www.agesandstages.com

www.brookespublishing.com/store/books/squires-asq/index.htm

For more information about assessing constructs and selecting appropriate measurement tools, please contact a DOHVE¹³ TA team member at:

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¹³ The purpose of the Design Options for Home Visiting Evaluation (DOHVE) is to provide research and evaluation support for the Maternal, Infant and Early Childhood Home Visiting (MIECHV) Program. The project is funded by the Administration for Children and Families in collaboration with the Health Resources and Services Administration.

Guidelines for Using the ASQ-3 and ASQ:SE to Measure Benchmark Area 3 (School Readiness and Achievement)		
Construct	Item(s)	Additional Considerations
<i>Parent support for children’s learning and development</i>		Not applicable ¹⁴
<i>Parent knowledge of child development and their child’s developmental progress</i>	Completion of ASQ-3 and ASQ:SE questionnaires over time, coupled with debriefing of results with program staff	The ASQ-3 and ASQ:SE are not designed to assess parent knowledge of child development. However, because parents complete the tools by observing and recording their children’s behavior, and because home visitors debrief results with the parents, the completion of multiple ASQ-3/ASQ:SE questionnaires coupled with debriefing sessions with their home visitors or other program staff over time could be used as an indirect measure to show that parents have knowledge about their own children’s developmental progress.
<i>Parenting behaviors and parent-child relationship</i>		Not applicable
<i>Parent emotional well-being or parenting stress</i>		Not applicable
<i>Child communication, language and emergent literacy</i>	ASQ-3: Communication area	Items on the Communication area tend to focus more on oral communication than on emergent literacy skills (e.g., print awareness, phonemic awareness). Other instruments need to be used to produce fine-grained assessments of these skills.
<i>Child’s general cognitive skills</i>	ASQ-3: Problem Solving area	The ASQ-3 does not have a specific area focusing on children’s general cognitive skills, but the Problem-Solving area may come the closest. At 36 months, for example, the items assess children’s ability to imitate adult actions (e.g., line up four objects in a row); stand on a box or chair to reach a desired object; repeat a series of numbers; and identify an ambiguous stick figure.

¹⁴ The ASQ-3 is not intended to measure parental support for children’s learning and development, but instead to screen children to identify those who need additional assessment for developmental delays. It is up to each grantee to ensure that measurement tools are used for their intended purpose.

Guidelines for Using the ASQ-3 and ASQ:SE to Measure Benchmark Area 3 (School Readiness and Achievement)

Construct	Item(s)	Additional Considerations
<i>Child's positive approaches to learning including attention</i>	ASQ-3: Problem Solving area	Neither the ASQ-3 nor the ASQ:SE have a single scale that perfectly captures all the constructs included in positive approaches to learning or attention, although each includes a few relevant individual items. ¹⁵ Problem solving is one construct included in a definition of positive approaches to learning, and so the ASQ-3 Problem Solving area could be used as a partial measure of approaches to learning.
	ASQ-3: Personal-Social area	The ASQ-3 Personal-Social area includes items that relate to initiative and self-direction (e.g., at 16 months, child's ability to feed her/himself with a spoon, even though s/he may spill). Therefore, this area may be considered suitable as a measure for approaches to learning, with the understanding that it captures other aspects of child development as well.
	ASQ:SE: total score	The ASQ:SE includes a few items related to self-regulation and following directions, routines, or rules (which could be related to paying attention), but these individual items do not form a specific subscale. Therefore, at best, the ASQ:SE total score could be used to assess positive approaches to learning, with the understanding that it captures other aspects of child development as well.
<i>Child's social behavior, emotion regulation, and emotional well-being</i>	ASQ-3: Personal-Social area	The Personal-Social area assesses children's self-help skills (e.g., can dress herself) and their ability to get along with others. However, more detailed examination of social-emotional behavior is available via the ASQ:SE, and children's overall scores on that instrument are more relevant to this construct.
	ASQ:SE total score	Overall ASQ:SE scores reflect children's social and emotional competence.

¹⁵ Approaches to learning have been defined as "distinct, observable behaviors that indicate ways children become engaged in classroom interactions and learning activities (Fantuzzo et al, 2007, as cited in National Research Council, 2008, p. 97)." The developmental domain includes such constructs as showing initiative and curiosity, engagement and persistence, and reasoning and problem-solving skills (National Research Council. (2008). *Early Childhood Assessment: Why, What, and How*. Committee on Developmental Outcomes and Assessments for Young Children, C.E. Snow and S.B. Van Hemel, Editors. Board on Children, Youth, and Families, Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. See this report for a list of measures that have been used to assess approaches to learning (p. 128-129).

Guidelines for Using the ASQ-3 and ASQ:SE to Measure Benchmark Area 3 (School Readiness and Achievement)

Construct	Item(s)	Additional Considerations
<i>Child's physical health and development</i>	ASQ-3: Gross Motor and Fine Motor areas; results of open-ended questions about parents' concerns	The ASQ-3 Gross Motor and Fine Motor areas focus on development of children's arm, body, and leg movements, and hand and finger movements, respectively. For example, at 24 months, a Gross Motor item asks "Does your child jump with both feet leaving the floor at the same time?" and a Fine Motor item asks, "Does your child get a spoon into his mouth right side up so that the food usually doesn't spill?" In addition to the Gross and Fine Motor areas, the ASQ-3 questionnaires also include open-ended questions to parents, asking if they have concerns about their children's hearing, walking/running/climbing (depending on child's age), vision, and medical problems. These questions could be used to assess the construct of children's physical health and development.