PQA-R

Preschool Program Quality Assessment — Revised

Manual

HIGHSCOPE.

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HighScope's Preschool Program Quality Assessment – Revised (PQA-R) Manual

Introduction

The Preschool PQA-R is an observation instrument that measures the quality of preschool classrooms. It comprehensively measures the effectiveness of the learning environment; teaching and learning routines and adult-child interactions; and curriculum, planning, assessment and parent engagement in promoting the development of the whole child within a supportive learning environment. The instrument can be used in **all** center-based settings. The PQA-R intentionally reflects research-based and field-tested "best practices" in preschool settings. The measure identifies the structural characteristics and dynamic relationships that effectively promote the development of preschool-aged children.

HighScope developed the PQA-R to evaluate the quality of early childhood classrooms for four- to five-year olds as well as identify the training needs of the classroom staff. The assessment is intended for classroom evaluation in which a trained independent evaluator rates the classroom characteristics. Alternatively, the tool can be used as a self-assessment tool by administrators or instructional staff for classroom planning and monitoring. The PQA-R can be used for research, evaluation, and to provide information to policymakers, program administrators, parents, and researchers.

Each section is composed of items that describe a broad array of classroom characteristics and rows that describe the quality of the classroom characteristics. Assessors assign a level, from 1

(no or poor quality) to 4 (highest quality) for each row. The rows are summed to produce an aggregate score for each section. Each section is then assigned a performance level of low, medium, or high. The PQA-R defines quality along a continuum. Teachers and program administrators are able to see where each classroom lies along the continuum of quality and use the results to systematically plan school improvement goals and objectives. Based on classroom observations and structured interviews with teaching staff, PQA-R assessors rate classrooms on the quality of the learning environment, teaching and learning routines, adult-child interactions, curriculum, planning and assessment, and family engagement.

Administration, Scoring, and Interpretation

The PQA-R is an observational assessment and thus the reliability of the results and the effectiveness of its use relies on the ability of the observer to both observe accurately and score reliably. The administration of the PQA-R, for accountability purposes, requires a trained and reliable observer to spend at least three hours and up to an entire day in the preschool classroom to complete the form, as evidence for each row must be entered before scores are assigned. The trained observer completes the Materials Checklist and keeps a running log of all the activities and adult-child interactions observed during the observation period. Sections I and II contain rows that can be scored through observation only and Section III contains rows that can only be scored by gathering additional information from classroom staff, using the guiding questions provided. Each row is scored on a 4-point scale. Indicators for all scores 1–4 are described to assist assessor scoring, and the scoring guide provides examples of evidence for each level to be used in determining the quality level for that row on a scale from 1 to 4.

The row scores are then totaled to get a Section Score. The Section Score is then interpreted into a Performance Level (i.e., low, medium, and high). The overall results are reported as three Section Scores and three Performance Levels.

Structure of the Assessment

The assessment is made up of one form across three Sections: I. Learning Environment; II. Teaching and Learning Routines and Adult-Child Interactions; and III. Curriculum, Planning, Assessment, and Parent Engagement. The form is comprised of 20 items and 61 rows across the three Sections. The PQA-R Sections and Items are as follows:

I. LEARNING ENVIRONMENT

I-A: The indoor space has interest areas that have names and are intentionally organized.

I-B: Classroom materials are plentiful.

I-C: There is a safe outdoor play area with ample space, structures, and materials to support many types of movement and play.

I-D: Children's work and environmental print are on display.

II. TEACHING AND LEARNING ROUTINES and ADULT-CHILD INTERACTIONS

II-A: The classroom follows a consistent sequence of events (daily routine) during the day.

II-B: There is time each day for child-initiated activities in the classroom and during outdoor play.

II-C: Adults support children's ideas, actions, and developmental levels during child-initiated activities.

II-D: There is time each day for adult-initiated large-group activities that support each child's developmental level.

II-E: There is time each day for adult-initiated small-group activities that support each child's developmental level.

II-F: Adults create a sensitive and responsive learning environment for all children.

II-G: Adults support children to make plans for and reflect upon their work.

II-H: Adults support children's language and literacy development throughout the day.

II-I: Adults support children's mathematics development throughout the day.

II-J: Adults support children's reasoning and problem-solving throughout the day.

II-K: Adults encourage thoughtful social interaction among all children throughout the day.

II-L: Adults diffuse conflicts and support all children in resolving conflicts**.**

III. CURRICULUM, PLANNING, ASSESSMENT, and PARENT ENGAGEMENT

III-A: Adults use a comprehensive, evidence-based educational model(s)/approach(es) to guide teaching practices.

III-B: Adults document the developmental progress of each child using measures validated for preschool-aged children.

III-C: Adults record and use anecdotal notes to plan.

III-D: Adults share responsibilities for planning activities connected to the comprehensive educational model(s)/approach(es) that are focused on play.

III-E: Adults provide many parent engagement options, encourage two-way sharing of child information, and support families with resources about child development and program transitioning.

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I. LEARNING ENVIRONMENT

I-A: The indoor space has a variety of interest areas that have names and are intentionally organized. **Page 4**

I-B: Classroom materials are plentiful. **Page 5**

I-C: There is a safe outdoor play area with ample space, structures, and materials to support many types of movement. **Page 6**

I-D: Children's work and environmental print are on display. **Page 7**

II. TEACHING AND LEARNING ROUTINES and ADULT-CHILD INTERACTIONS

II-A: The classroom follows a consistent sequence of events during the school day. **Page 8**

II-B: There is time each day for child-initiated activities in the classroom and during outdoor time. **Pages 9-10**

II-C: Adults support children's ideas, actions, and developmental levels during child-initiated activities. **Page 11**

II-D: There is time each day for adult-initiated, large-group activities that support each child's developmental level. **Pages 12-13**

II-E: There is time each day for adult-initiated, small-group activities that support each child's developmental level. **Pages 14-16**

II-F: Adults create a sensitive and responsive learning environment for all children. **Pages 17-18**

II-G: Adults encourage and support children to make plans for and reflect upon their work. **Pages 19-20**

II-H: Adults support children's language and literacy development throughout the day. **Pages 21-24**

II-I: Adults support children's mathematics development throughout the day. **Pages 25-28**

II-J: Adults support children's reasoning and problem solving throughout the day. **Pages 29-30**

II-K: Adults encourage thoughtful social interaction among all children throughout the day. **Page 31**

II-L: Adults diffuse conflicts and support all children in resolving conflicts. **Page 32**

III. CURRICULUM, PLANNING, ASSESSMENT, and FAMILY ENGAGEMENT

III-A: Adults use a comprehensive, evidence-based educational model(s)/approach(es) to guide teaching practices. **Page 33**

III-B: Adults document the developmental progress of each child using measures validated for preschool-aged children. **Page 34**

III-C: Adults record and use anecdotal notes to create lesson plans that are connected to learning goals and focused on learning through developmentally appropriate practices (play). **Pages 35-36**

III-D: Adults provide many family engagement options, encourage two-way sharing of child information, and support families with program transitioning. **Pages 37-38**

Assessment Protocols

Four steps for completing the PQA-R:

1. Observe in a preschool classroom while recording objective evidence and completing the Classroom Materials Checklist (CMC). It is recommended to schedule time prior to the start of the school day for the completion of the CMC and Section I: Learning Environment.

2. Ask all of the guiding questions in Section III.

3. Record objective evidence for each row (within online PQA-R).

4. Read the descriptor(s), scoring note(s), and objective evidence and assign the appropriate row score level (1, 2, 3, or 4).

Descriptors: Some descriptors are written on a continuum of no or poor quality to high quality. This is represented in several ways, including *rarely or never, sometimes, usually,* and *always.*

- *Rarely or never* should be selected when there is no evidence to support a higher level.
- *Sometimes* should be thought of as more than once but not used consistently throughout the observation.
- *Usually* should be thought of as more than a few and frequently used throughout the observation.
- *Always* should be selected if there is no evidence throughout the observation contrary to the highest level. *Always* only refers to when you are observing.

Some descriptors are represented by *none, few, some,* and *many.* Professional experience, knowledge, and judgment should guide the scoring for these descriptors.

Closed bulleted point lists: When closed bulleted points are used in a list, every bullet point must be met to score a level 4.

Open bulleted point lists: Open bulleted points are examples; not every example must be met. The open bulleted lists are not exhaustive lists — they are simply examples.

Preschool Program Quality Assessment — Revised (PQA-R)

Program/Classroom/Assessor Information

Program information		Hours program/classroom in session
Name of agency:		Days of week (circle all that apply)
Name of center:		MON TUE WED THU FRI SAT
Name of classroom being observed:		
		Time session begins each day:
Program director/administrator or contact person		Time session ends each day:
Name:		
Position/title:		Assessor information
		Name:
Contact information of program/classroom being observed		Phone: Ext:
City/state/zip:		Fax:
Phone: Ext:		Email:
Fax:		
Email:		PQA-R administration information
		Date of observation:
Classroom staff		Beginning time:
Name head/lead teacher:		Ending time:
Name associate teacher:		
Other staff:		Comments or notes about administering the PQA-R in this classroom:
Name: Position/title:		
Name: Position/title:		
Name: Position/title:		
Children		
Number in the classroom:		Rater's signature:
Age range of children:		Date:

I. LEARNING ENVIRONMENT						
Item I-A The indoor space has a variety of interest areas that have names and are intentionally organized.						
SCORE		**Levels**	**Notes:**			***Evidence:***
Row 1 ☐	A variety of interest areas that provide diverse activities and can be tailored to individual children's interests (e.g., creative, construction, dramatic play, inquiry based, literacy) are evident and have names.	1-None 2-Few 3-Some 4-Many	**Scoring note:** **To score a 4**, interest areas have names and are evident, and it is clear that the adults and children know the names of the interest areas.			
Row 2 ☐	**Level 1** Materials are minimally organized or are not organized into interest areas.	**Level 2** At least one of the bullets in level 4 is in place.	**Level 3** At least two of the bullets in level 4 are in place.	**Level 4** The materials in the interest areas are • Intentionally organized. • Grouped by function. • Accessible to children throughout the day.	**Scoring note:** **To score a 4**, the materials must be accessible to all children throughout the day. Putting the same items in multiple interest areas, where they may contribute to children's play, is acceptable (e.g., writing utensils in the home area as well as the art area). **Examples of grouping by function or types:** ○ Things that fasten (e.g., tape, stapler, paper clips) ○ Things to build with (e.g., unit blocks, Bristle Blocks, cardboard blocks)	

Item I-B Classroom materials are plentiful. (Use Classroom Materials Checklist for scoring.)						
SCORE	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Notes:**	***Evidence:***
Row 1 ☐	Limited Quantity: Score of 8 or less on the **literacy** content area.	Moderate Quantity: Score of 9 or 10 on the **literacy** content area.	Adequate Quantity: Score of 11 on the **literacy** content area.	Plentiful Quantity: Score of 12 on the **literacy** content area.	**Scoring note:** Only enter the **TOTAL** observed score for evidence.	
Row 2 ☐	Limited Quantity: Score of 6 or less on the **mathematics** content area.	Moderate Quantity: Score of 7 or 8 on the **mathematics** content area.	Adequate Quantity: Score of 9 on the **mathematics** content area.	Plentiful Quantity: Score of 10 on the **mathematics** content area.	**Scoring note**: Only enter the **TOTAL** observed score for evidence.	
Row 3 ☐	Limited Quantity: Score of 7 or less on the **perceptual, motor, and physical development** content area.	Moderate Quantity: Score of 8 or 9 on the **perceptual, motor, and physical development** content area.	Adequate Quantity: Score of 10 on the **perceptual, motor, and physical development** content area.	Plentiful Quantity: Score of 11 on the **perceptual, motor, and physical development** content area.	**Scoring note:** Only enter the **TOTAL** observed score for evidence.	
Row 4 ☐	Limited Quantity: Score of 2 or less on the **social studies/social and emotional** content area.	Moderate Quantity: Score of 3 or 4 on the **social studies/social and emotional** content area.	Adequate Quantity: Score of 5 on the **social studies/social and emotional** content area.	Plentiful Quantity: Score of 6 on the **social studies/social and emotional** content area.	**Scoring note:** Only enter the **TOTAL** observed score for evidence.	
Row 5 ☐	Limited Quantity: Score of 1 or none on the **science** content area.	Moderate Quantity: Score of 2 on the **science** content area.	Adequate Quantity: Score of 3 on the **science** content area.	Plentiful Quantity: Score of 4 on the **science** content area.	**Scoring note:** Only enter the **TOTAL** observed score for evidence.	
Row 6 ☐	Limited Quantity: Score of 2 or less on the **diversity of human experiences** content area.	Moderate Quantity: Score of 3 on the **diversity of human experiences** content area.	Adequate Quantity: Score of 4 on the **diversity of human experiences** content area.	Plentiful Quantity: Score of 5 on the **diversity of human experiences** content area.	**Scoring note:** Only enter the **TOTAL** observed score for evidence.	

Item I-C There is a safe outdoor play area with ample space, structures, and materials to support many types of movement.						
SCORE	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Notes:**	***Evidence:***
Row 1 ☐	The outdoor play area is unsafe or there is no outdoor play area.	The outdoor play area is safe, and there is space and play structures that allow for a few types of movement.	The outdoor play area is safe, and there is space and play structures that allow for some types of movement.	The outdoor play area is safe, and there is space and play structures that allow for many types of movement.	**Scoring note:** If children do not go outside during the observation, score the outside area and note in the evidence column why the outside area was not used that day (e.g., lack of time, dangerous weather [i.e., lightning, heavy rain, hail, strong winds, blizzards, very high or low temperatures]). **Examples of types of movement:** ○ Jumping ○ Climbing ○ Swinging ○ Sliding ○ Running ○ Digging	
Row 2 ☐	There are no portable materials for the outdoor play area.	The outdoor play area includes portable materials for a few types of active play.	The outdoor play area includes portable materials for some types of active play.	The outdoor area includes portable materials for many types of active play.	**Scoring note:** If needed, ask where portable materials are stored. **Examples of portable materials:** ○ Tricycles ○ Sleds ○ Balls ○ Stones ○ Boxes ○ Buckets ○ Chalk ○ Scarves ○ Paintbrushes	

Item I-D Children's work and environmental print are on display.						
SCORE	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Notes:**	***Evidence:***
Row 1 ☐	One or none of the bulleted points in level 4 is/are in place.	At least two of the bulleted points in level 4 are in place.	At least three of the bulleted points in level 4 are in place.	Adults display children's work • At child level. • Throughout the learning environment. The displays consist of • Mostly child-initiated work (not adult-initiated art projects). • A variety of children's work, such as artwork, photos of block structures, samples of emergent writing, and results of scientific experiments.	**Scoring note:** Adults may display children's work in or outside the classroom (such as hallways), but they should display the work where it is visible to children and where children and their families spend a substantial amount of time while in school.	
Row 2 ☐	Many examples of environmental print that encourage children to write letters, numbers, names, and words are intentionally placed throughout the classroom.	**Levels** 1-None 2-Few 3-Some 4-Many	**Scoring note:** **To score a 4**, there must be specific evidence of print that encourages children to write letters, numbers, names, and words. **Examples of environmental print that encourage children to write letters, numbers, names, and words:** ○ Sign-in sheets that include children's age ○ Interest area signs ○ Shelf/toy labels with numbers of objects ○ Alphabet and numerical strips ○ Attendance charts with date ○ Job charts with names ○ Children's names on cubbies ○ Hand-washing reminders with step 1, step 2 ○ Labeled objects ○ Clock with numerals ○ Calendars with all dates and days of the week			

II. TEACHING AND LEARNING ROUTINES and ADULT-CHILD INTERACTIONS Item II-A The classroom follows a consistent sequence of events during the school day.				
SCORE		**Levels**	**Notes:**	***Evidence:***
Row 1 ☐	Adults support children's understanding of the consistent routine and sequence of events during the school day.	1-Rarely or never 2-Sometimes 3-Usually 4-Always	**Examples of supporting children's understanding of the sequence of events:** ○ Adults post the daily routine at child level in a format that is easy for all children to understand, such as **text along with pictures or symbols.** ○ Adults review the daily routine throughout the day. ○ Adults let children know about changes in the routine ahead of time.	
Row 2 ☐	Adults are thoughtful about letting children know when transitions to a different area (within and outside of the classroom), group, or activity will occur.	1-Rarely or never 2-Sometimes 3-Usually 4-Always	**Examples that are thoughtful:** ○ Announcing that snack will come after large-group time, before small-group time begins. ○ Quietly telling children who have a lot to put away that play time is ending soon. **Examples that are not thoughtful:** ○ Loudly announcing to everyone, "Five more minutes until cleanup time." ○ Saying "One, two, three eyes on me," and making children stop playing or interrupting children as they eat and converse.	

Item II-B There is time each day for child-initiated activities in the classroom and during outdoor time.				
SCORE		**Levels**	**Notes:**	***Evidence:***
Row 1 ☐	Adults allow children to carry out their intentions using all accessible materials during classroom child-initiated activity for an extended period of time.	1-Rarely or never 2-Sometimes 3-Usually 4-Always	**Scoring notes:** **To score a 4**, there must be specific evidence that shows that **ALL** children are able to carry out their intentions. There cannot be any evidence that contradicts the examples provided below. Research supports that child-initiated activities should be for at least 30 minutes; however, longer periods of time may be beneficial as evidenced in the best practices of many high-quality programs that allow 60 minutes for child-initiated work/play time. **Examples of adults allowing children to carry out their intentions:** ○ Children are free to choose areas, people, and materials. ○ Children are free to pretend, play alone, or play in groups. ○ Children are free to invent activities. ○ Children are free to move materials throughout the area. ○ Children are free to use materials creatively. ○ Children are free to change activities.	

Item II-B *(Continued)* There is time each day for child-initiated activities in the classroom and during outdoor time.				
SCORE		**Levels**	**Notes:**	***Evidence:***
Row 2 ☐	Adults allow children to carry out their intentions using all accessible equipment and materials during the outdoor child-initiated activity for an extended period of time.	1-Rarely or never 2-Sometimes 3-Usually 4-Always	**Scoring notes:** **To score a 4**, there must be specific evidence that shows that **ALL** children are able to carry out their intentions. There cannot be any evidence that contradicts the examples provided below. Score, even if children do not go outside during the scheduled time, based on ability of children to carry out their intentions (e.g., if adults read aloud during this time, then **assign a score of 1**). The recommended amount of time for outdoor play is at least 30 minutes; however, research supports up to 60 minutes. **Examples of adults allowing children to carry out their intentions:** ○ Children are free to choose people, equipment, and materials to play with. ○ Children are free to pretend, play alone, or play in groups. ○ Children are free to invent activities. ○ Children are free to move materials throughout the outdoor area. ○ Children are free to use materials creatively. ○ Children are free to change activities.	

Preschool Program Quality Assessment — Revised (PQA-R)

Classroom Materials Checklist (CMC)

The Classroom Materials Checklist is a convenient way for assessors to collect information about the classroom materials accessible to children. The Classroom Materials Checklist provides a systematic method to collect information about the types of materials and equipment in a given classroom. Assessors can record the presence or absence of materials as they move around a classroom, by simply checking *Yes* or *No* for each item, thus easing the burden of creating individual lists of materials. The Classroom Materials Checklist is divided into 6 content areas: Literacy; Mathematics; Perceptual, Motor, and Physical Development; Social Studies/Social and Emotional Development; and Science and Diversity of Human Experiences. The materials assessed reflect different types of play and learning materials that children and teachers may use in a preschool classroom for a variety of learning experiences.

Instructions for completing the Classroom Materials Checklist:

1. Before observing, become familiar with each item descriptor and the examples of materials.
2. You may take photos of classroom materials to help complete this checklist. Do not include children or adults in any photos.
3. Walk around the classroom and look at the materials in each area that are easily accessible to children. (Do not include those in storage, too high to reach, and not visible.) If you see materials that fit within an item, check *Yes*; if not, check *No*. The examples provided are not exhaustive lists; include other materials, as appropriate, for a given item.
4. Some classroom materials may count for two items (e.g., a basket of 40 small rocks could count toward Item13. Counting, sorting and classifying, and Item 38. Items from nature).
5. Each item **must** be scored on the Classroom Materials Checklist.
6. After completing the Classroom Materials Checklist, follow the directions on the final scoring page to record the number of items checked *Yes* for each content area in the Total Observed column. NOTE: The Social Studies/Social and Emotional, and Science content areas require you to include items from other content areas. The Diversity of Human Experiences content area is comprised of items from other content areas.
7. Transfer the **Total Observed** numbers (page 8) to the corresponding content area rows in Item I-B on the PQA-R. The Classroom Materials Checklist is the evidence for rows 1–6 of Item I-B. NOTE: You do not have to list materials on the PQA-R. Just record the total observed number of yes responses for each content area in the evidence column.

Literacy	
1. The classroom has *at least* **3 books per child** representing a variety of genres (e.g., informational books, poetry books, songbooks, storybooks). *Note:* Count the number of books found anywhere in the classroom. Books can be in different formats (e.g., big books, student- and class-created books, soft cover, hardcover, and board books).	Yes ☐ No ☐
2. Of the books in the classroom, there are **5 or more nonfiction books related to science** (e.g., nature, plants, insects, animals, electricity, space, and weather).	Yes ☐ No ☐ *Score also for Science
3. Of the books in the classroom, there are **4 or more nonfiction books related to communities/social sciences** (e.g., geography, community events, holidays, differing family structures, and professions/occupations).	Yes ☐ No ☐ *Score also for Social Studies/Social and Emotional
4. Of the books in the classroom, there are **4 or more nonfiction books related to diversity of human experiences** (e.g., gender with nonstereotyped role models, different times and places, cooking recipes from different countries, art from different countries, world cultures, pictures of people from around the world, and special needs such as depicting people with disabilities).	Yes ☐ No ☐ *Score also for Diversity of Human Experiences
5. Of the books in the classroom, there are **5 or more books with rhyming and/or rhythmic features,** such as song books, nursery rhymes, and poetry books.	Yes ☐ No ☐

6. Of the books in the classroom, there are at least **2 alphabet books.**	Yes ☐ No ☐
7. Of the books in the classroom, there are **5 or more books with math conten**t (e.g., numbers, counting, shapes, patterns, comparing attributes, and measurement).	Yes ☐ No ☐
8. Of the books in the classroom, there are **5 or more books with social-emotional content** (e.g., conflict resolution, sharing, friendship, accepting differences, family relationships, becoming a big sister/brother, and prosocial behavior).	Yes ☐ No ☐ *Score also for Social Studies/Social and Emotional
9. The classroom has at least **2 <u>complete sets of</u> uppercase and 2 <u>complete sets of</u> lowercase 3-D letters of the alphabet.**	Yes ☐ No ☐
10. Somewhere within the classroom, **all children's names are visible at the child level** (e.g., name cards, sign-in sheets for children, names on clothespins or Popsicle sticks, and labels on cubbies).	Yes ☐ No ☐
11. The classroom has enough **crayons, pencils, pens, and markers** in sufficient quantity for small groups of children to use at the same time.	Yes ☐ No ☐

Preschool Program Quality Assessment (Revised) — PQA-R

Scoring Guidelines

Developed by the Center for Early Education Research and Evaluation (CEERE) at HighScope

The Preschool PQA-R is an all-inclusive observation instrument that measures the quality of preschool classrooms. It comprehensively measures the effectiveness of the learning environment; teaching and learning routines and adult-child interactions; and curriculum, planning, assessment and parent engagement while promoting the development of the whole child within a supportive classroom learning environment and through teachers' connections to children's home environments.

The following scoring guidelines present examples of anecdotal notes that might be taken during a classroom observation and teacher interview. Anecdotal notes taken during an observation are used to score Section I and II of the PQA-R. Anecdotal notes taken during a teacher interview are used to score Section III. The Scoring Guidelines include examples for each item of the PQA-R; each row has three examples at each scoring level (I, 2, 3, or 4). These are just examples of anecdotal notes and are not exhaustive. To use the Scoring Guidelines, compare the anecdotal notes you have taken to the evidence presented for a particular row. To determine a score, review the examples provided and pick the scoring level that most closely matches your evidence. Move to the next row and repeat the process to score the evidence you collected. All rows of the PQA-R should be scored.

There are several abbreviations used throughout the Scoring Guidelines: T = Teacher; TA = Teaching Assistant; LT = Lead Teacher; A = Adult; Ch = Child. For example, "Ch1, Ch2, Ch3 talking" in your anecdote would be shorthand for "Child 1, Child 2 and Child 3 in a conversation." These types of abbreviations are helpful shortcuts to use as you are collecting anecdotal notes. Sometimes a note just includes a child's initial or just the child's first name, for brevity and confidentiality.

Item I-A The indoor space has a variety of interest areas that have names and are intentionally organized.			
Row 1: A variety of interest areas that provide diverse activities and can be tailored to individual children's interests are evident and named.			
Level 1 Example Evidence	The classroom has 2 areas, a toy area and a kitchen area. The kitchen area was turned toward the wall, blocked off from use for the day.	There are no apparent areas. Bins are stored along the wall haphazardly, with no organization.	The room had two areas: one area contained bins mixed with blocks, house items, and musical instruments. The other area had a table with books, crayons, and paper in a basket. The areas were not labeled.
Level 2 Example Evidence	The classroom had a House Area and Block Area; both areas were labeled. There was a basket of books on the floor in the corner.	There are 2 interest areas, house and books. Neither area is labeled. The house area and book areas are across from each other along the walls.	The classroom has 3 areas: a house area, a block area, and art area. The art area has no materials; the house area was spread out, with the kitchen on one side of the room and dressup all the way across the room.
Level 3 Example Evidence	Areas of the room are marked and divided in the space. Adults use the area names. LT: "Let's meet at the Sand Table.", "I saw you were experimenting in Discovery." Discovery Center Arts & Crafts Sand and Water tables Building Space Housekeeping and Pretend Play	There are interest areas set up for children. Areas include a house area, book area, block area, and art area. The house, book, and block areas had labels. During planning, the teacher asked a child, "Where are you going to play?" The child pointed across the room. T replied: "The house area?"	The following interest areas are named and clearly defined in the classroom: Art Area Library Area Block Area Computer/Listening Area During planning, C1 said: "I'm going to block area."

Level 4 Example Evidence	Areas of the room are clearly marked with labels and divided in the space. Adults and children use the names. T: “Let’s meet at the Sand Table.”, “I saw you were experimenting in Discovery.” Ch: “I want to build with the Legos” (pointing to the Building Space). C2 to T: “Will you play restaurant with me in Housekeeping?” Discovery Center Arts & Crafts Author’s Space Sand and Water tables Building Space Housekeeping and Pretend Play	There are a variety of interest areas set up for children. Areas include a house area, texture table, book area, block area, toys and games, art, and discovery. Throughout the morning, teachers and children refer to the areas: Ch: “J and I will play a game in the Toys.” T: “Art needs more paint.” Ch: “Can I add water to the Texture Table?” T: “Our House Area is a mess!” All areas were marked with a picture and word label.	The following interest areas are named and clearly defined in the classroom: Art Area Safe Spot Sand Table Writing Center Science Area Library Area Play dough Area Kitchen Area Music Area Computer/Listening Area During planning, C1 said: "I’m going to block area.” C2 said: “I’m going to play dough area.” C3 said, "I’m going to safe spot.” T: “What are you going to cook in the kitchen area?”

Item I-A The indoor space has a variety of interest areas that have names and are intentionally organized.			
Row 2: Materials in interest areas are organized, grouped by function, and accessible throughout the day.			
Level 1 Example Evidence	Bins of materials were stored along the wall with no organization. One tub contained dressup clothes, cooking utensils, blocks and musical instruments. In one corner, 3 bins were stored on top of one another.	Some of the materials are in containers on the shelves, but teachers keep many materials up in high cupboards. Children have to ask to have them brought down. Some things to build with are stored together on shelves.	Materials are not grouped by function. There are crayons and markers mixed up in a bin with dress-up clothes. Teachers use centers at free play and children cycle through each one.
Level 2 Example Evidence	In the art area, the tape, glue and staplers were on the same shelf. In the toy area, puzzles are stored next to bear counters, along with some art collaging materials. The books are all askew in the book area, some upside down, others torn and half open, with no intentional organization. Children have access to materials all day.	Materials are stored on shelves in tubs; the tubs are not labeled or organized by function; crayons and markers are mixed together. In the house area, dressup clothes are mixed together in a bin with play food. Children have access to materials at all parts of the day.	In the kitchen, all the dishes are in the cupboards; fake food was in the fridge; and dressup items hung on hooks. In the Block Area all the building sets are stored together. Teachers use centers at free play; activities are set up in each center and children cycle through each one.

Level 3 Example Evidence	Materials were all accessible to children. Most materials were grouped by function (blocks separated by type and all in one area). Intentionally organized art materials sorted by type, etc. Pretend play materials were on shelves: clothing grouped together with two hooks: a toy box held cell phones, purses, stuffed animals, baby dolls, doll clothes, a jump rope, doctor's kit, 3 puppets, two construction hats, and a tool belt.	Materials were stored in related bins: crayons were in one bin and markers in another in the art area; Legos were in one tub and Lincoln Logs in another tub in the block area, etc. All materials throughout the space were labeled with pictures and words. During choice time, children were assigned interest areas to play in; not all children had access to all interest areas throughout this time.	Materials are organized by interest area and are labeled with text and pictures or drawings. In the house area, doll items and dressup clothes are stored near each other; accessories such as cameras, phones, and glasses are grouped together; food, dishes and pans are grouped together. In the block area, unit blocks are grouped together; farm and horses stored on top shelf with the farm animals; foam blocks grouped together; cardboard blocks grouped together. In the exploration area, microscope, measuring worms, and shells stored on top shelf; microscope slides, rulers and magnetic wands stored on the second shelf; puzzles and games are stored on bottom shelf. In the art area, tape and glue stored apart from one another; collage items stored (confetti, glitter and pom-poms, etc.) are stored on one shelf; ribbon, stickers, and yarn stored on another shelf. Children used all materials throughout the observation.

Level 4 Example Evidence	Staplers are grouped together next to the tape. All the blocks and building materials are in the block area. Cardboard blocks are on the same shelf and grouped by color. The wooden unit blocks are grouped together. The farm animals are next to the barn. The foods (breads, fruit, vegetables, meats, etc.) are grouped and located on the same shelf. Children picked the areas they wished to play with during planning. Two boys built in the block area; a girl took crayons off the shelf in the art area, and another girl looked at books in the book area.	Markers, crayons, and pencils are together (in separate bins) in the art area. Various types of blocks are adjacent in the block area. Writing utensils and a variety of papers are at the writing area desk. Pots, pans, cooking utensils, and tableware are in the cupboards in the house area. Children used play food and made the teacher breakfast, colored pictures in the art area, built with blocks in the block area, and did puzzles at a table.	All materials are labeled (includes basket or container and shelf). Materials are stored by relevant interest area. For example: Stamps are located by the stamp pads. Dry-erase markers are located next to dry-erase boards. Markers and pencils are next to each other in the writing area and are located next to paper and envelopes. All dress-up clothes are next to each other. All wooden blocks are next to each other. All materials are at children's level; Paintbrushes, paint, smocks, and paper are at the easel; Children used these materials throughout the observation. Children used foam in the art area. Children used the smart board without adult help by using a stool.

Item I-B Classroom materials are plentiful. (Use Classroom Materials Checklist for scoring.)				
	Level 1 Example Evidence	**Level 2** Example Evidence	**Level 3** Example Evidence	**Level 4** Example Evidence
Row 1: Plentiful literacy materials.	CMC Total = 6	CMC Total = 9	CMC Total = 11	CMC Total = 12
Row 2: Plentiful mathematics materials.	CMC Total = 4	CMC Total = 8	CMC Total = 9	CMC Total = 10
Row 3: Plentiful perceptual, motor, and physical development materials.	CMC Total = 7	CMC Total = 8	CMC Total = 10	CMC Total = 11
Row 4: Plentiful social studies/social-emotional materials.	CMC Total = 2	CMC Total = 3	CMC Total = 5	CMC Total = 6
Row 5: Plentiful science materials.	CMC Total = 1	CMC Total = 2	CMC Total = 3	CMC Total = 4
Row 6: Plentiful diversity of human experiences materials.	CMC Total = 2	CMC Total = 3	CMC Total = 4	CMC Total = 5

Item I-C There is a safe outdoor play area with ample space, structures, and materials to support many types of movement.			
Row 1: The outdoor play area is safe and there is space and play structures that allow for movement.			
Level 1 Example Evidence	There is no outdoor play area.	The children are taken for a walk during outside time instead of playing because there isn't an outside area.	The children took a walk around the building and in the parking lot of the center. The weather was not inclement, however, there was some flooding on the playground.
Level 2 Example Evidence	Per observation, children jump and climb in and out of the wooden house. There are no structures for swinging or sliding.	The outdoor area allows for jumping and climbing. There are no opportunities for swinging or sliding.	The playground is just outside the classroom. There are no play structures. There is a paved area with a Little Tikes basketball setup and a grassy area with badminton.
Level 3 Example Evidence	All-natural outdoor play space with a dreamcatcher climber, large sand area, cedar balance beam, mud kitchen, wooden bridge, cedar stage and seating, slide, and climbing logs.	Area for running and jumping, and a play structure child can climb on and slide down. There are no swings or structures for swinging.	The outdoor play area does not have a structure on it that allows children to swing. There is a house that children can go into and small slides that children can climb up and slide down on. Children have grassy space to run and jump but there are no structures children can climb and jump from.
Level 4 Example Evidence	One climbing structure has 3 slides, a tunnel, and a walkway to the climber with a slide; Climber 2 has two slides and a bridge walkway. There are 2 balance beams, 6 swings, steps, and levels for	Large play structure with ladders/slides, climber, steps, basketball hoop, balance beam, ride on bus, swings, and lily pads. There is a large grassy area where children	Children and adults access playground from door in hallway that leads directly outside. There is a large paved area right outside the door. There is also a hill that leads down to the playground. Outdoor area has 8 swings, 3 slides, 1

	children to jump from. There is a cement/paved area with a 4-square and hopscotch.	played “tag” during the observation.	climbing structure, 4 benches, 1 table, and a soccer net. There are grassy areas and areas with cement and wood chips.

Item I-C There is a safe outdoor play area with ample space, structures, and materials to support many types of movement.			
Row 2: Outdoor area includes portable materials for active play.			
Level 1 Example Evidence	No portable materials were used while children played outside.	2 Tonka trucks in the sandbox but no one could use the sand box; it was too wet.	Children asked for sidewalk chalk.
Level 2 Example Evidence	Teachers brought out balls and soccer goals.	2 sets of stilts, 2 scooters, and 3 balls	2 balls, 3 stopwatches, sand toys, and 2 Hula- hoops
Level 3 Example Evidence	Observed portable materials include trikes, plastic cars, balls, chalk, large wooden blocks, sand toys, trucks, plastic kitchen furniture. Some of the portable equipment is broken and weathered.	There are books, water table toys, science buckets, bubbles, drawing materials, shovels and sand toys, and musical instruments.	There are trikes, 3 cozy coupes and 5 ride-on "bikes" w/o pedals; big wheel, b-ball hoop, 1 ball, chalk, crates, and a kitchen.
Level 4 Example Evidence	Shed outside with portable materials that children can take from and put back in the shed: —balancing stilts —musical instruments —large balls with handles —variety of small balls —cones —Hula-hoops —bats	There are swings, hammocks, a sand area with shovels, trucks, buckets, pots and pans, bikes, scooters, wagons, rocks, a tractor tire embedded in the dirt, tables, a play house, water pump (pitcher pump), PVC pipes, balls, and books. Children scooped dirt, pulled wagons, rode bikes & scooters; climbed on the climber; used pvc pipes as	—3-passenger Teeter-Totter —Bikes —Scooters —3-passenger round bike —Easel —Kitchen set —Rolling sand table —Sand toys, scoops, funnels, containers, lizards, boats, colander —Drum and musical instruments —Footballs —Round balls

	—balancing boards —foam noodles —beanbags with beanbag toss —pompoms —parachute —bowling pins and balls —Velcro paddles and balls —plastic horseshoes —Frisbees —plastic shopping cart —easel —bikes —1 sensory table filled with purple sand and 1 sensory table filled with pine cones	horns and telescopes; swung on swings and in hammocks; made sand cakes for a birthday; walked/balanced on logs; played house; sat on a big tire in the sun; talked with a friend; moved big rocks to looked for worms.	—Bean-bag toss easel with pockets for beanbags —Basketball hoop w/balls —Small trucks with 2 Little Tykes garages —Sidewalk chalk —Bubbles —Mountain rocks —Ring toss —Mitts and balls (Velcro) —Small plastic balls, 4” —Soccer ball —Volleyball —Hula-hoops —Tent —Cooperation ball slide on ropes —Snow shovels —Sleds —Snow claws —Jump ropes

Item I-D Children's work and environmental print are on display.			
Row 1: Adults display children's work throughout the learning environment in many ways.			
Level 1 Example Evidence	8 coffee filter butterflies are on the wall in the book area at adult eye level.	14 watercolor paintings in the art area at adult eye level.	5 paper-plate suns, all painted yellow, on the wall at children's level in the book area.
Level 2 Example Evidence	On the bulletin board (adult eye level) were paper-plate spiders and finger-painted rainbows, all the same. There were two examples of emergent writing down low in the writing area.	Children's displays were in the art and block area and included drawings, collages, paintings, stamps, photos of block buildings, and class-made books. Displays are at both child and adult eye level.	All work is adult level and only in one corner of the room. All work is child-initiated and includes paintings, pictures, writing, and charts.
Level 3 Example Evidence	The artwork displayed throughout the classroom includes child-initiated drawings, samples of writing, collage art, paintings, and stamp art. There are also photographs in centers of children playing (e.g., drawing, building, etc.) in those areas. Artwork in the house area is posted at adult eye level.	Children's work is displayed on the back of shelves in a variety of places in the classroom. Work includes photographs, drawings, and quotes from the children about their work. Artwork included children's scribblings, ditto color pages, black construction paper with chalk in different colors, and decorated paper bags made to look like pumpkins.	Some work is at children's eye level and some is above. There are photos of children doing various types of work in all interest areas. In the art area and on back wall there is a variety of different types of art displayed. There are paintings, drawings, writing samples, collages, and photos.
Level 4 Example Evidence	Displayed work included collages, chalk drawings, drawings of children's families, children's writing — their names, watercolor	Children's work consists of paintings, drawings, photos of projects, collage materials project, writings.	Children's work was displayed in all interest areas and included child-initiated drawings, paintings, collages, and photos of children at work. All work was displayed at

	paintings, and recall graphs. Family drawings posted in the book area; variety of children's artwork posted in the block, house, and toy areas; children's chalk drawings posted by the cubbies near the door; examples of children's representations of their names in the writing area; variety of children's collages posted in art area at children's eye level.	The children's work is displayed in different parts of the classroom: discovery area, the bathroom, by the children's cubbies, in the studio, near the dramatic play area. The children's work is displayed at the children's eye level.	children's eye level. Homemade class books were on the bookshelf in the book area.

Item I-D Children's work and environmental print are on display.			
Row 2: Many examples of environmental print that encourage children to write letters, numbers, names and words are intentionally placed throughout the classroom.			
Level 1 Example Evidence	There are no words or letters placed in the classroom.	There is an alphabet strip; it is placed along the ceiling.	There is a cursive alphabet strip.
Level 2 Example Evidence	Children's names are on their cubbies and there are area names (Book Area, Kitchen, etc.).	The Daily Schedule, with the parts of the day, is posted near the carpet used for greeting time and includes photos of children engaged in the various daily activities.	There is a sign-up sheet and a job chart posted near the door of the classroom.
Level 3 Example Evidence	The children's names are displayed at eye level. There is a children's schedule and job chart. There are labels on materials, writing materials in all areas, and an alphabet chart.	There are children's cubbies with names and photos and hooks with names on them. There is a visual schedule. Interest areas and materials are labeled. There are hand-washing visuals with numbers on them for steps. There are writing materials in interest areas.	Children signed in at the beginning of the day. Children's pictures and names, and environmental print posted on an alphabet word wall. Interest areas and materials are labeled. Alphabet and number strips are located throughout the classroom. Children names are on cubbies and mailboxes. Hand-washing (just words) procedure posted by the sink.

Level 4 Example Evidence	Children sign in daily using name and symbol; Interest area signs include area name and photo; Alphabet and numerical strips placed in the writing area and dramatic play area; Children's names visible throughout room on cubbies, artwork, writings, and “go home” folders; Clock in LGT area and dramatic play area; real calendar in LGT area and near the door; hand-washing chart with pictures, words, and numbers near the sink; word cards in the writing area, art area and dramatic play area.	Sign-in sheets with children’s names, letter-linked symbols, and numbers that match each child's cot/bag; Interest areas have signs; Shelves and toy bins are labeled; ABC strip posted at children’s level in book area; Children’s names and letter-linked symbols visible on cubbies; Children’s names on cots; Computer keyboards; Hand-washing reminders with words, numbers, and pictures located by both sinks; Labeled objects; Clock in house area with numbers; Maps in house area	Sign in sheets; Interest area signs; Word wall with children's names and environmental print; Letters on bathroom door; Color names on wall; Number 1 to 20 on wall; Science charts with details of experiments with apples; Children's names on cubbies; Labeled objects; Clock with numerals; Alphabet poster; Prediction charts, shared writing, poems; Daily routine with names and numbers

Item II-A Adults Support Children's Understanding of the Consistent Sequence of Events (Daily Routine).			
Row 1: Adults support children's understanding of the consistent routine and sequence of events in a school day.			
Level 1 Example Evidence	There is a typed schedule posted next to the telephone above the heads of the children.	No schedule is posted. During choice time, T said: "We need to clean up for snack." No other parts of the day were referenced.	There is a schedule posted in the LGT area at children's eye level; teachers and children did not talk about the parts of the day.
Level 2 Example Evidence	There is a posted daily schedule for children. The schedule includes text and images. At the start of the day, T said: "Come meet me at the carpet for group."	Visual Routine (with words) posted under the smart board. T said loudly: "5 minutes till group. Finish up." T: "Ok, are we ready? I am going to call your name; you are going to clap your syllables and go to your table." CA and T said loudly: "It's time to clean up."	Schedule is posted at child level with pictures and words using the HighScope schedule cards. During the morning meeting, the teacher announced that instead of doing music they would go to the gym.
Level 3 Example Evidence	Ch to T: "When are we going outside?" T asked the question back: "When are we going outside?" TA: "To transition to go outside, you are going to do shapes. You are going to	Daily schedule is at child eye level. T: "What do we do after we eat? Look at our schedule up there." Pointed to daily schedule. Ch: "Nap." T: "We do have rest time."	A1: "That's open during book time." C1: "I think we can do that at dismissal." A1: "Oh, you think maybe at dismissal, ok."

	come up and pick a shape." Daily routine is posted on the side of the art cabinets; clipart and text at child level.	T: "Five more minutes. And then what?" Ch: "Then we go inside and wash our hands and go to the carpet and listen to a story and then small group and then work time." T: "You remembered our afternoon schedule."	A1: "Someone said that it might rain, so we would have to take this off if we can't go outside. So work time would be longer." (pocket chart) T: "Go wash your hands; it's time for lunch." Daily schedule is posted vertically on the wall near the large-group area; it contains written text (in a pocket chart).
Level 4 Example Evidence	Daily schedule is posted at children's level with words and HighScope symbols. T1: "We're going to large group." C2: "What are we doing for large group?" T1: "We're doing partner dancing." One parent came to pick up a child after story time. C1: "It's time to go home?" T1: "We're going to eat snack and then do large group."	Daily schedule is posted at children's level in the social area where they have large group. A3: "Z, I'm wondering if you washed your hands?" C1: "Yes." A3: "Ok, then what is the next step, what do we do next?" C1: "Sign in; I did." A1 to Ch: "Yes, as soon as we go to small group, that will be your table."	The visual daily schedule is at eye level for children. The visual schedule has simple pictures and words for each part of the day. Teachers referred to the routine at multiple times throughout the day talking about what came next: T: "We have one more minute to finish before morning message." T: "It's almost time to clean up." T: "We are moving to large-group now." T: "Off to recall time."

	C2: “We already did large group.” T1: “We did large group one time today but remember we do large group two times a day.” C2: “But we only have one small group.” T1: “We do only have one small group.” T1: “After story time is snack time. “	Child’s job was to check the schedule; she asked to do this during free choice. She went to review it with A3. T1: “We need to finish snack so we can go outside; then it’ll be time for rest time.”	At group, C1 moved the marker on the schedule. T: “Look, S moved it to small-group time. That’s what's next. Then we will do planning.”

Item II-A Adults Support Children's Understanding of the Consistent Sequence of Events (Daily Routine).			
Row 2: Adults are thoughtful about letting children know when transitions to a different (within and outside of the classroom), group, or activity will occur.			
Level 1 Example Evidence	There was a five-minute warning before cleanup from choice. No other portions of the day were announced in advance.	During work time, children flashed lights and loudly announced cleanup. T1: "Put it away, small group is over." No other transition warnings were observed.	Child's job was to let other children know that there were five minutes left to play at work time. No other warnings for transition were observed.
Level 2 Example Evidence	T said loudly: "We just finished cleanup; I wonder what comes next on our schedule?" T went over to the visual schedule to change it to recall: "After recall we will read a book and then go outside." TA: "E (five-minute job)." E turned lights off. TA said loudly: "5 more minutes to clean up. Sing the song, E." E went around the room banging a drum. T said to children in the block	At choice time, children were given a 5-minute warning with the lights off. Children were quietly awakened individually from rest time. Teachers opened the blinds first, and then turned on the lights. Teacher announced loudly to class: "Freeze! Everyone come to the rug." There were visitors from the dentist's office.	At choice time, A1 announced: "One more minute." A1 sang a cleanup song and joined children on the carpet to begin group. After lunch, children were redirected to sit back at the tables until there were less than 3 children in line. A child waited alone at the table; all chairs were stacked. The teacher redirected children in line: "You're first, he's next in line, and then you're after him…."

	and dramatic play areas: “Four more minutes.” T said loudly to all children at their small-group tables: “We are going to move like a vehicle of your choice to read aloud. “		
Level 3 Example Evidence	T: “I’m going to show you some pictures. When you see your picture, you will go to your small group.” “Who's this guy? What's his last name?” “Mrs. A's table. ___ is going to Mrs. B's table.” “What's ___’s last name?” Children get up and head to small group as they see their matching picture or as they are directed. T: "Get in line.” Children get in line for gym. “Okay are we going to be noisy as elephants or quiet as mice?” T walked around to children	T stands at the front of the tables: "You guys have a couple more minutes to finish up with your breakfast." T: "Next we're going to plan before we move to work time. If you are in my group, move to the block area. If you are in Mrs. W's group, you can stay right here." T: "Boys and girls, look at the time. What does it say?" C: "No time!" C2: "Cleanup time." T: "Almost! It says we have about one minute." T to Ch: “You are ready to go home. After outside time, it’ll	At the end of large group: T1: “C1, how should we get to the sink to wash our hands?” (for snack) C1: “Walk.” T1: “C1 says we should walk to the sink.” C2: “I want to hop.” T1: “You can hop.” Breakfast: T1 quietly said, as she ate breakfast with children: “5 more minutes to finish breakfast.” Several children said: “OK.” Work Time: T1: “Watch the green (sand) timer. When the green timer gets down to the bottom, you put the tablets away.”

	in the gym: “2 more minutes at gym.” T walked around the classroom: “5 more minutes at choice time.” After lunch activities: “You can go get your stuff and then we are going to head outside.” Call on children a few at a time.	be time for your mom to pick you up.”	T1 stood in one spot in toy area and said to all: “Ten more minutes, guys.” Transition to large group: T1: “Friends, books away please.” (no warning)
Level 4 Example Evidence	Work Time: T: “All this stuff you are piling on me we're going to have to clean up at cleanup time in 20 minutes.” A child flashed the lights and told everyone: “5 more minutes.” T: “Let's head to the carpet for recall; then we'll figure out where we're going to clean up.” T: “After recess, we'll have meeting circle.”	At arrival, A2 went around the room and told children and adults playing that there would be five more minutes to play. A2 gave information about small group at the end of the large group: “At small group today, we will be exploring magnets.” Before small group ended children were given a 2-minute and then 1-minute warning. They were also told that they could use the materials at free choice.	Ch to TA: “The clock is on the four.” TA repeated: “You’re right. What do we do when the clock is on the four?” Ch: “We pick up and go to the carpet to read books.” <u>Work Time</u>: SA gave 5-minute warning signs to the special helper. Child went around and showed the 5-minute sign. (Sign had the number 5 on it). Child pretended to be a cat while taking the sign around the room. T walked around the room: “It looks like L is telling us that we have 5 more minutes left to

	T: “If you're finished with small group, you can put your things away and get ready for lunch.” T: “One more person needs to finish in the bathroom and then we'll shut the lights off for rest time.”	While outside, the teacher moved around the space and told children: “We have about five more minutes until we line up for inside.” During work time, T told a child: “We only have about five more minutes to work on this. Then it’ll be time to clean up and head for recall.”	play.” Special Helper turned the lights off and said: “Time to clean up.” T moved around the room: “I see the lights are off now; it must be time to clean up. Let’s clean up and get ready for group.” <u>Large Group:</u> Child helper moved the clip on the daily schedule. T asked: “What comes next?” Children: “Work time!” T: “You’re right; and then we will clean up and do our small groups.”

Item II-B There is time each day for child-initiated activities in the classroom and during outdoor time.			
Row 1: Adults allow children to carry out their intentions using all accessible materials during classroom child-initiated activity for an extended period of time.			
Level 1 Example Evidence	Play time was from 9:30–10:10 am. Teachers placed materials on 4 tables: 1. Crayons and coloring books 2. Magna-Tiles 3. 5 board puzzles 4. Bingo stampers and paper T assigned the children to tables: "OK, you can play with the materials in front of you for 10 minutes. Then we will move to the next station." Every 10 minutes T said: "Time to move to the next station."	At work time, a community reader stopped by to read to the children. T1 had children all leave their activities and sit on the carpet to be read to as a group. The visitor waited about 10 minutes until all the children were quiet. The children had only been playing for about 10 minutes. When the reading was finished they went on to snack time.	At work time, T2 stopped everyone to let them know they were getting too loud: "My, oh my, you are all being way too loud. Quiet down now or play time will be done." She stopped them 3 times and then decided they were done after 20 minutes: "That is all! We are done here. It is cleanup time."
Level 2 Example Evidence	Two girls colored with crayons at the art table. When there were a lot of bubbles in the water table, the teacher closed the table and the block area next to the water table. A child was told: "Keep the trucks on the	Play time was scheduled for 45 minutes. Children played in the house area, built with blocks, and did puzzles at the table. Two boys ran and chased each other. T1 told them to stop. When they continued running, T1 gave them a timeout, making them	Work time was observed from 9:20–9:55 AM. Children got out the cardboard ramps to extend their play with the cars. T2 was in the dressup area playing store and ordering food. Other children played with cars on the ledge, racing them and talking about which cars are the fastest

	carpet, please." A boy looked at a book in the book area.	sit out the rest of the play time, another 10 minutes.	and slowest. T1 uses work time to assess children, calling them over one at a time for about 10 minutes each.
Level 3 Example Evidence	Children pretend to cook in the house area with T2 making "brunch" at T2's request. Children build with Legos in the block area. Three children play at the water table. A child puts some water in an empty container and takes it to the house area. Another child goes to do the same. T1: "You can only take the water if you are going to the water table." Ch points to the house area. T1: "You can't have water in the house area; if you want to play with water, take it to the water table." Ch: "Can I play on the computer?" T: "There is only one that works, so when someone is done you can have a turn."	Three children went and used large blocks to build structures. One child got envelopes and art materials, sat at a table writing, and put paper in envelopes. Two children went to the toy area to build. One child found items that were mentioned in the read-aloud story and told his own version of the story (the teacher was invited to listen and watch). Three children played with dolls (some children dressed up). T1 announced cleanup time without warning. Children had 30 minutes of free time.	A child sat in the loft and played with puppets. Two girls dressed baby dolls in the house area and carried them around the classroom. T1 helped a child wrap masking tape around different pieces of paper. The sand/water table was closed (T1 announced they would not be playing there today because of the bubble problem the day before).

Level 4 Example Evidence	Choice time was observed from 9:15 –10:05 AM. One child took the train from the block area to the house area to set it up. Children made soup with letters; a child used the beanbag toss; three children used sticks and blankets to build a tent, adding tape to hold the blankets to the poles. Ch 1 said: "I am the dad and I'm going to change the baby. You be the uncle and get the bottle." Ch2: "I am going to go play with G and the puppets."	Work time was observed from 9:05 –10:00 AM. Two girls made strawberry soup for T1 in the house area. A boy made a "rocket ship" with the Magna-Tiles. Another boy pushed a Tonka truck around the classroom with play food in the bed. Ch told T1 in the art area: "I'm making a card for my mom."	Work time was observed from 9:16 –10:09 AM. Children filled muffin tins with play dough. They carried pretend food to other areas. A girl mixed paints at the easel. Children put beads and shells in play dough. Two girls packed purses with a variety of items and carried them in the classroom. Children wore dressup clothes while working in other areas. Three boys built ramps with blocks.

Item II-B There is time each day for child-initiated activities in the classroom and during outdoor time.			
Row 2: Adults allow children carry out their intentions using all accessible equipment and materials during the outdoor child-initiated activity for an extended period of time.			
Level 1 Example Evidence	Children did not go outside to play.	Children went outside to play, but were told to stay on the blacktop with the balls (2 basketballs, 4 playground balls) because "It is too muddy to use the playground." Ch1 and Ch2 ran after a playground ball that rolled onto the grass. T: "Come back to the blacktop. No playground today."	During outdoor time the teachers split the group into two. T1 played "Duck, Duck, Goose" with her group and T2 played "Red Light, Green Light." After 15 minutes T1 announced, "Time to go back inside. Let's go!"
Level 2 Example Evidence	During outside time the children ride tricycles, play with balls, and run on the grass chasing each other. After about 10 minutes the teachers call to children to join in the parachute games. When some children say *no*, they are told they must join in the game.	As children prepare to go outside, getting their jackets on, T1 announces that they will not be allowed to play on the climber because it is wet from rain overnight. They go out and play for 30 minutes.	At outside time children played with balls, swung on swings, and chased each other. T2 joined in the game of chase, decided who was "it" and tried to make the children follow her rules to the game: "Look, it's his turn; you have to run and chase him."
Level 3 Example Evidence	Outside time lasted 35 minutes. Some children were shoveling snow with shovels and others were building a snowman. One child pulled	Children played on swings, ran, rode bikes, and ran back and forth on the climber's bridge. T2 played with children in the playhouse pretending to	Children played tag, pretended to be wolves, dug in the sandbox, and some children made a car under the play structure with a steering wheel

	another child on a sled. Two girls laid on their bellies on the swings. One child dragged out all the jump ropes and left them in a pile of snow. T2 shouted to her, "Before you play with the snow shovels, you must clean up all the jump ropes you left out over there."	cook. After about 20 minutes, T1 gave a 5-minute warning to go inside.	and chairs. Some children rode tricycles then switched activities to play tag. T1 stopped them in the middle of their game of tag and asked them to park their trikes against the wall before they started another activity.
Level 4 Example Evidence	Outside time was observed from 10:45–11:25 AM. Six children threw balls and hit them with bats or paddles. Two children balanced on balancing stilts on the sidewalk. One child strapped a drum over his shoulders and walked around outside playing the drums. Children dipped chalk in water and drew on chalkboard easel. One child played a drum on top of the play structure. One child picked flowers and said, "I'm picking flowers for my mom." T1 said, "You're picking flowers for your mom. Okay." One child rode	Outdoor play took place from 11:15–12:00. Children rode on bikes, used the swings, played with Hula-hoops together, and rolled down a hill. A boy kicked a ball with the teacher, then went to the climber. Children used sidewalk chalk on the cement; a girl asked the teacher to draw hopscotch for them.	Children were outside from 10:50–11:28 AM. Children used balloons and Hula-hoops at the balance beam. Some children held the hoops and walked across the beam. One child tried to roll the hoop down the beam. T1 and children threw balloons through the hoops. C: "The floor is lava." T: "What does that mean?" C: "You will turn into the lava monster. Scream!" One child walked across the beam, and then ran to the basketball hoop. Two boys dug in the sandbox. A girl was swinging and then ran to the climber.

	a bike while holding a container full of chalk.		

Preschool Program Quality Assessment — Revised (PQA-R)

Research Foundation

Introduction

The HighScope Educational Research Foundation developed the Preschool Program Quality Assessment-Revised (PQA-R) in response to research that shows high-quality early learning is directly related to academic and life success (Schweinhart et al., 2005; Snow, Burns, & Griffin, 1998). There is growing evidence that educators who use data-driven instruction have a greater impact on student learning outcomes (Datnow, Park, & Wohlstetter, 2007; Petrides & Nodine, 2005). Researchers have consistently found that two interrelated sets of indicators — process and structure — influence the quality of the educational experiences for children, especially our most vulnerable children (National Institute for Early Education Research, 2002). HighScope based the PQA-R on process and structure indicators identified in the research as most relevant to providing a high-quality preschool experience, including learning environment, teaching-learning routines, adult-child interactions, language, literacy, mathematics, critical thinking, curriculum, planning, assessment, and parent engagement (Ehrlich et al., 2018). We conducted an extensive review of the extant literature to provide the research base for the items chosen to assess three essential domains: the Learning Environment; Teaching and Learning Routines and Adult-Child Interactions; and Curriculum, Planning, Assessment, and Parent Engagement.

Domain 1: Learning Environment

Young children are affected by their surroundings but, more importantly, the preschool environment influences the teaching and learning process (e.g., Anders et al., 2012). Intentionally organizing and preparing the learning environment to help support children's development is critical. Specifically, it is important that the learning environment is inclusive, provides a variety of classroom materials, and includes different interest areas. Additionally, there should be a safe outdoor area with permanent structures and portable materials that allow for diverse kinds of movement and play.

Item I-A: The indoor space has a variety of interest areas that have names and are intentionally organized.

The utility of interest areas in promoting specific desirable child behaviors has been identified in the research literature. Although there is no set rule for the number of interest areas, it is recommended by Vogel (2012) to have basic interest areas such as creative, construction, dramatic play, inquiry-based, and literacy areas. Having a number of different areas enables teachers to provide diverse activities and tailor activities to individual children's interests (Inan, 2009).

A study conducted in 1980 found that the presence of partitioned special play areas was associated with increased rates of fantasy play and peer interaction (Field, 1980). Additional studies have found that organization into learning zones is associated with attention and active engagement with peers (Dunst, McWilliam, & Holbert, 1986). Researchers have also identified the presence of clearly identified and specific areas throughout the classroom containing

conceptually or schematically clustered materials as potentially supportive of language learning and use (Roskos & Neuman, 2001).

Item I-B: Classroom materials are plentiful.

The six learning areas addressed in this item (i.e., literacy; mathematics; science; socioemotional skills; perceptual, motor, and physical development; and human diversity) are all important parts of the preschool curriculum. Early development of skills in these areas, particularly literacy and math, supports later school achievement (Yoshikawa et al., 2013). Language and literacy are present in all areas of children's education; math, science, and social studies all draw on language and literacy competencies, particularly as children enter the higher grades. Print materials and a literacy-rich environment that make literacy artifacts, such as functional signs, literacy tools, and literacy-enriched play tools (e.g., menus, coupons, pens and stationary, shopping list pads, recipe cards), available so children can enhance their literacy activity in play (Neuman & Roskos, 1992).

Early math outcomes are also important for children's future achievement and life outcomes; research finds that early number competence predicts math achievement and the rate of growth in math achievement through the third grade and math achievement in the 10th grade (Jordan, Kaplan, Ramineni, & Locuniak, 2009; Stevenson & Newman, 1986). Additionally, persistent math deficiencies can limit student career options (Eccles, 1997). A review of research on the use of manipulatives in math instruction for students from the kindergarten to college level found that, overall, manipulative use was associated with better learning outcomes than instruction without manipulatives (Carbonneau, Marley, & Selig, 2013). These positive effects, however, were moderated by the instructional techniques employed in each

study, indicating that manipulatives alone, without intentional use and instruction by teachers, are insufficient to support math learning.

Although less commonly integrated in preschool classrooms, science presents an opportunity to explore critical thinking skills as children observe, manipulate, and talk about their scientific experiences, and science supports language, literacy, and vocabulary development (Brenneman, Stevenson-Boyd, & Frede, 2009). Science in the classroom should be treated as more than learning lists of facts (Brenneman et al., 2009). Rather, children need hands-on experiences that allow them to handle, observe, and talk about concepts in order to understand what is new and different to them (Rivera, 1998).

Developing socioemotional skills is another central area of learning in preschool, and is beneficial to children's school performance as they grow older (Wentzel & Asher, 1995). Sociodramatic play is supported by research for developing and promoting children's socioemotional skills, including improving their role-taking ability, which is necessary for developing communication and empathy skills (Hughes, 2009). Many objects in a preschool classroom can be incorporated into sociodramatic play, particularly materials in areas that support dramatic play, such as the house area.

Motor skills are also important to children's success in school. Better overall motor skills in preschool have been found to be associated with third-grade reading achievement (McPhillips & Jordan-Black, 2007). Additionally, fine motor skills at kindergarten entry predict later achievement (Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010), which is unsurprising as fine-motor tasks are prevalent in school environments. To illustrate, one study found that kindergarten children are engaged in tasks that require fine-motor skills 46% of the time (Marr,

Cermak, Cohn, & Henderson, 2003). Motor skills have even been found to be more strongly associated with decoding, reading comprehension, and overall reading gains during kindergarten than executive function skills (Cameron et al., 2012). Beyond school achievement, fundamental motor-skills mastery contributes to other life outcomes, as it is associated with higher cardiovascular fitness and lower weight as children grow older (Lubans, Morgan, Cliff, Barnett, & Okely, 2010). Finally, perceptual skills including better musical skills and better musical sensitivity, which can be developed through the use of instruments and materials such as rhythm sticks, are significantly associated with better reading development and phonological awareness (Anvari, Trainor, Woodside, & Levy, 2002; Huss, Verney, Fosker, Mead, & Goswami, 2011).

Introducing children to human diversity and a diverse array of cultures is another important part of the preschool experience because children develop an awareness of differences in language, skin color, abilities, and customs by the age of three. In addition, they begin to develop attitudes towards others based on these differences (Grant & Haynes, 1995). The preschool classroom may be the first setting where children are interacting with children from a different cultural background than their own. Introducing classroom materials that allow children to interact with and learn about different cultures can create opportunities for meaningful interactions and instruction around diversity. The dramatic play area is a part of the classroom where such materials can be introduced (Kendall, 1983). Culturally relevant dramatic play centers that include items that represent the cultures of children in the classroom also give children an opportunity to draw from their home experiences to enhance play (Kirova, 2010; Salinas-Gonzalez, Arreguín-Anderson, & Alanís, 2018). Teachers should take care to ensure that

the materials they introduce for dramatic play, along with all other classroom materials, do not reflect cultural biases and are accessible to children of all abilities (Rettig, 2002). In addition to providing learning opportunities for the class, integrating materials that relate to the individual uniqueness of the children in the classroom provides environmental clues that children and their culture are seen as valuable within their classroom community (Cooper-Marcus & Sarkissian, 1986; Weinstein, 1987).

However, the introduction of materials representing human and cultural diversity into the classroom, which creates an opportunity for learning about diversity, is not in itself sufficient for learning without adult support (Salinas-Gonzalez et al., 2018; Souto-Manning, 2013). Children can interact with such materials in ways that act out their existing stereotypes and biases, therefore intentionality in instruction and in taking advantage of learning moments that arise during play on the part of the teacher is imperative (Salinas-Gonzalez et al., 2018). Materials must be integrated into the classroom and their introduction and culturally appropriate use guided by teachers in intentional ways to promote learning (Kirova, 2010; Salinas-Gonzalez et al., 2018). This intentional and appropriate use of materials is also true for other content areas. While abundant materials in the classroom addressing all the above-mentioned important areas of learning can support preschool children's development, it is important to note that the presence of materials is not enough. Children need the opportunity to use such materials in the context of meaningful interactions with teachers or peers or during an intentional instructional exercise to fully benefit from their availability (Williford, Vick Whittaker, Vitiello, & Downer, 2013).

Item I-C: There is a safe outdoor play area with ample space, structures, and materials to support many types of movement.

Being overweight early in childhood has been found to significantly predict adult obesity and health issues such as coronary heart disease (Baker, Olsen, & Sørensen, 2007). Furthermore, the development of gross-motor skills in childhood is associated with the level of physical activity a child engages in, with improved motor skills being associated with increased physical activity (Laukkanen, Pesola, Havu, Sääkslahti, & Finni, 2014). Improved motor skills in children have also been found to correlate with maintaining higher levels of physical activity as children age, as well as with higher health-related fitness levels (Barnett, Van Beurden, Morgan, Brooks, & Beard, 2008, 2009; Lopes, Rodrigues, Maia, & Malina, 2011). In contrast, delays in motor-skill development are associated with lower perceived physical competence (Robinson, 2011) and weaker academic achievement in later grades (Kantomaa et al., 2013). As such, providing opportunities for physical activity and motor development is important for a number of preschool children's long-term outcomes.

Research has shown that children prefer to play on playground structures rather than in open field spaces when such structures are provided (Farley, Meriwether, Baker, Rice, & Webber, 2008). As the number of structures available to children increases, so do observed rates of physical activity (Nielsen, Bugge, Hermansen, Svensson, & Andersen, 2012; Sugiyama, Okely, Masters, & Moore, 2010). Research has demonstrated that both fixed and portable playground equipment encourage increased rates of activity (Bower et al., 2008). Indeed, the provision of balls and other portable equipment along with ample open space in which to use such equipment was found to be more strongly associated with increased rates of moderate to

vigorous physical activity than fixed equipment (Brown et al., 2009). Thus, to support the development of motor skills and encourage physical activity in young children, outdoor play spaces should be large enough for all children to engage with equipment and should contain both fixed structures and portable materials.

Item I-D: Children's work and environmental print are on display.

Hanging children's work of all kinds, along with materials that relate to their individual uniqueness, provides environmental clues that children are seen as important and matter within their classroom community (Cooper-Marcus & Sarkissian, 1986; Weinstein, 1987). Such displays have also been found to improve children's performance on measures of self-esteem (Maxwell & Chmielewski, 2008). Additionally, hanging children's work can be used to make print visible in the classroom environment.

Classrooms that provide a print-rich environment provide children with opportunities to see print and engage in print-related activities (Phillips, Clancy-Menchetti, & Lonigan, 2008). Recognizing and being exposed to environmental print is a key element of the development of print awareness, the knowledge that print can be used to represent an object (Neuman & Roskos, 1990, 1993; Pullen & Justice, 2003). In turn, this is prerequisite knowledge to reading (Pullen & Justice, 2003). Exposure to environmental print can also improve children's ability to read those words in context (Vukelich, 1994). One way to expose children to print is by using labeling, for example, labeling of interest areas and objects, as it has been shown that labeling is an important language-stimulation strategy for supporting child language development (Bunce, 1995; Girolametto & Weitzman, 2002). Exposing children to environmental print can be used in teaching as well; children whose teachers showed them

examples of letters in familiar environmental print (e.g., *S* on a stop sign, *M* on McDonald's branding) improved the letter writing and letter recognition more than peers who were only shown examples in standard manuscript form (Neumann, Hood, & Ford, 2013).

It is important, however, for teachers to note that environmental print does not lead to word reading on its own (Masonheimer, Drum, & Ehri, 1984; Vukelich, 1994). Likewise, while high-quality writing and literacy areas did improve alphabet knowledge, they did not improve name writing without teacher support (Guo, Justice, Kaderavek, & McGinty, 2012). Nevertheless, print materials and a literacy-rich environment that makes literacy artifacts, such as functional signs, literacy tools, and literacy-enriched play tools available to children, can provide opportunities for adult interaction that encourages children to think, speak, and interact in literate ways (Neuman & Roskos, 1993) besides enhancing their literacy activity in play (Neuman & Roskos, 1992). Thus, while print materials and a literacy-rich environment are not a sufficient condition for improvement in children's literacy skills, they are integral to facilitating teacher interactions, which can help children build their skills and interact with environmental print in new ways.

Domain 2: Teaching and Learning Routines and Adult-Child Interactions

Teaching and learning routines that match children's stage of development are crucial as they help to build classroom community, ensure efficient use of the available time, help to organize transitions, create predictability, and allow time for all the necessary elements of the preschool curriculum in the school day as well as time for spontaneous learning (Williams & Williams, 2001). Within the preschool classroom, high-quality adult-child interactions are important for

learning as they are the crux of children's social and academic development (e.g., Williford et al., 2013).

Item II-A: The classroom follows a consistent sequence of events during the school day.

As young children transition from home to school, they must learn an entirely new set of routines and expectations. These changes may feel confusing and overwhelming for some young children (Berk, 1994). When a child feels overwhelmed by a task (such as remembering what part of the day comes next), he or she may disengage (Bailey & Brooks, 2003) or engage in challenging behaviors (Stone, 1978). Teachers can support young students by sequencing their daily routine, displaying the routine in a visual way, and guiding children through transitions (Bailey & Brooks, 2003). When children know what to expect and can anticipate what part of the day comes next, they are developing the ability to navigate their classroom environment, and by doing so, gain independence and self-control (Osborn & Osborn, 1981).

Item II-B: There is time each day for child-initiated activities in the classroom and during outdoor time.

Young children typically come to school naturally curious and motivated to learn. Yet, research has shown that, for many, motivation decreases as they enter formal K–12 schooling (Cordova & Lepper, 1996). One strategy for enhancing motivation, is to allow children to make choices within the school day (Cordova & Lepper, 1996), for example, what and who to play with and in the way they use materials. When children are given choices, they are more motivated to persist in the face of challenges and are more likely to remain engaged in a task (Cordova & Lepper, 1996). A natural result of student choice is student interest. In turn,

children are better able to learn and retain content that is taught within a context interesting to them (Hidi, 1990; Lepper & Cordova, 1992). Moreover, when children are given the responsibility of making choices, they perceive themselves as more competent and aspire to greater challenges (Cordova & Lepper, 1996). Providing time for children to play is one type of activity in which children are provided with choice. Therefore, spontaneous play should form an important part of the preschool curriculum, which may lead to the development of a higher level of children's cognitive functions (Almy, 1967; Umek & Musek, 2001). To sustain sociodramatic and constructive play, children need sufficient, uninterrupted time for at least 30 minutes (Ward, 1996). Children need this time to generate ideas, assign roles, find materials, communicate, negotiate, and enact dramatizations.

Another part of the day that is especially ripe with opportunities for children to pursue their interests is unstructured outdoor playtime. Playing outside provides children with deep and authentic opportunities for learning (Bilton, 2002). Given the right physical environment and collective expectations, a variety of play types emerges during outdoor play (Maxwell, Mitchell, & Evans, 2008). Fantasy play, functional play, constructive play, and rule-based games benefit children's cognitive, social, and emotional development (Maxwell et al., 2008). Experts at the Society of Health and Physical Educators recommend that children spend 60 minutes engaging in unstructured play outside in order to receive its benefits (Committee on Physical Activity and Physical Education in the School Environment, Food and Nutrition Board, Institute of Medicine, Kohl & Cook, 2013). In order to maximize the benefits of unstructured play, teachers and school staff should structure the physical environment in such a way as to encourage physical activity behaviors (Bower et al., 2008; Brown et al., 2009) by maximizing

opportunities for children to be active and utilizing a variety of appropriate equipment, interactional strategies, and high-quality training for staff (EPAO, as cited in Bower et al., 2008).

Item II-C: Adults support children's ideas, actions, and developmental levels during child-initiated activities.

Allowing children time to engage in child-initiated activities bolsters child outcomes (Graue, Clements, Reynolds, & Niles, 2004). During child-initiated activities, children have discretion in how they complete activities and choose peers to work with, and they can opt out of activities (Stipek, Daniels, Galluzzo, & Milburn, 1992). Play is an example of a child-initiated activity and Vygotsky viewed play, when scaffolded, as being important for learning. Scaffolding occurs when an adult or more knowledgeable other (e.g., a peer) assists the child in performing at a higher level than would be possible without support and, in this way, extends his or her knowledge and learning during play (Han, Moore, Vukelich, & Buell, 2010). Adult scaffolding during play is important as it encourages children to learn self-regulation, cooperation, memory, language use, and literacy (Bodrova & Leong, as cited in Han et al., 2010).

Item II-D: There is time each day for adult-initiated, large-group activities that support each child's developmental level and **Item II-E: There is time each day for adult-initiated, small-group activities that support each child's developmental level.**

In a recent study, conducted by researchers at the Institute for Social Research, findings suggest that one of the biggest predictors of elementary students' success in math and reading is his or her teacher (RAND Education, 2012). Similarly, high-quality early education can significantly erase or minimize the achievement gaps that exist for many of our children

(Barnett, 2011; Camilli, Vargas, Ryan, & Barnett, 2010; Pianta, Barnett, Burchinal, & Thornburg, 2009) and one way to maximize the benefits of these early education experiences is by purposefully planning for instruction that meets the needs of each learner. In fact, teacher-directed activities, used in conjunction with child-initiated activities, have been shown to further support children's development and contribute to child outcomes (Graue et al., 2004).

Teacher-directed activities include large-group and also small-group activities or settings in which learning can take place. The competence of teachers to organize children in various settings has a large impact on children's learning (Sheridan, Williams, & Samuelsson, 2014) and may be more important than the nature of the setting itself. In these teacher-directed or adult-initiated activities, as in child-initiated activities, adults can scaffold children's learning. Scaffolding and modeling by adults help children to learn new knowledge when the task, skills, or concept that is introduced is moderately challenging rather than being too easy or too difficult (Acar, Hong, & Wu, 2017).

The use of a variety of formats in preschool is advocated in the position statement of the National Association for the Education of Young Children (NAEYC) on developmentally appropriate practice, which recommends the use of large-group instruction as well (NAEYC, 2009). DiCarlo, Pierce, Baumgartner, Harris, and Ota (2012) emphasize that various teacher behaviors, such as acknowledging children's responses and providing relevant materials during large-group instruction, predict preschool children's attentiveness and results in more effective large-group instruction.

Lou, Abrami, and Spence (2000) make the case that planning for small-group instruction is a highly effective way to support each student. Children in groups of between four and five

were shown to learn more than children in larger groups. In addition to the academic benefits small groups provide, small groups also provide opportunities for students to receive more individualized attention from their teacher. When teachers listen to and know their students as individuals, they are better able to adapt their responses to fit that particular child's needs (Bredekamp & Copple, 1997). By tracking the children's needs, teachers can follow their development and intentionally plan for ways to provide moderate challenges (Tomlinson, 2001). Brain research has shown that engaging in tasks just outside of one's zone of proximal development, as defined by Vygotsky (1978), stimulates enduring understanding.

Item II-F: Adults create a sensitive and responsive learning environment for all children.

High-quality interactions are those in which the teacher responds to the child's needs in a timely and appropriate manner (Howes & Hamilton, 1992). The teacher remains gentle and warm and finds ways to personalize the interaction to fit the individual needs of the child (Hamre & Pianta, 2005; Pianta, Hamre, & Stuhlman, 2003). Such relationships are formed through consistently positive interactions between children and adults. A high-quality relationship with a teacher in early childhood supports the development of social, emotional, and cognitive skills (Goosens & Van IJzendoorn, 1990). Moreover, a warm, positive relationship between teachers and children can predict whether a child is sufficiently well adjusted later in school (Pianta, Steinberg, & Rollins, 1995) and results in children having greater academic success throughout elementary school (Hamre & Pianta, 2001). In addition, social-emotional advantages can be gained from high-quality relationships with teachers, including engaging in

less destructive behavior (Howes, Matheson, & Hamilton, 1994) and being better liked by peers (Hamre & Pianta, 2001).

Providing positive comments is one way through which teachers can establish positive, high-quality relationships. However, praise is commonly given when a task is well done or completed, for example, "What a beautiful painting!" This kind of praise lowers children's confidence, their expectations of success when working on difficult tasks, and leads to dependency of children on an authority figure to tell them what is right or wrong (Hitz & Driscoll, 1988). Instead, teachers can use encouragement, which refers to positive acknowledgement that focuses on specific student efforts or specific attributes of the work completed, for example, "You worked for a long time on that painting!" As visible in those examples, encouragement does not place judgement on student work or give information regarding its value. Rather, encouragement avoids labeling or interpreting the work and focuses on the process rather than the evaluation of a finished product (Hitz & Driscoll, 1988). This helps children develop an appreciation of their own behaviors and achievements.

Item II-G: Adults encourage and support children to make plans and reflect upon their work.

Planning is a key component of executive functioning and is an important metacognitive process since it increases students' success in learning (Crook & Evans, 2014; Fisher, 1998). Hudson and Fivush (1991) state that age is a factor affecting children's planning abilities. As children grow to be five years of age, they are better able to think flexibly about their plans and adapt them when needed (Hudson, Shapiro, & Sosa, 1995). When teachers support children in making plans and scaffold their individual attempts to plan, they are providing the

child with opportunities to practice and become better planners (Hudson et al., 1995). This is particularly important for children from low-income households who may experience greater family turmoil, live in households that are noisy or crowded, and have fewer structured routines and rituals. The household chaos that may result from these circumstances, coupled with overburdened or stressed parents, can interfere with the development of young children's planning skills (Crook & Evans, 2014).

Recall or reflection time is the practice of mediating children's thinking in order to reflect on a past event. In the sequence of the daily routine, recall time follows work or playtime, which is preceded by planning time. In this way, children plan and reflect around the events of their playtime. By virtue of play time's highly interesting and personalized nature, children are increasingly motivated to think more deeply (Cordova & Lepper, 1996). However, while children in preschool learn and retain a great deal of information, they are less capable at retrieving relevant information independently, even within a familiar context (Perlmutter, Sophian, Mitchell, & Cavanaugh, 1981). Teachers and other supportive adults must then facilitate thoughtful opportunities for children to reflect on past experiences. Using cues such as colors, areas of play, or other descriptions, teachers can help children generate more comprehensive reflections than an independent or "free" recall might (Perlmutter et al., 1981). Teachers might also support children by modeling the reflective thinking process using a "think aloud" for children to view the internal process of reflection in context (Lindfors, 1999).

Item II-H: Adults support children's language and literacy development throughout the day.

The preschool years are crucial to the development of children's emergent literacy skills that will ensure a smooth transition into formal reading (Pullen & Justice, 2003). Moreover, the development of emergent literacy skills is imperative, as various aspects of emergent literacy have been found to predict later academic achievement (e.g., Bleses, Makransky, Dale, Højen, & Ari, 2016). Therefore, preschool teachers have the critical task to foster children's emergent literacy. Important interrelated aspects of emergent literacy are letter knowledge, phonological awareness, vocabulary development, comprehension skills, and writing skills.

Children's letter knowledge, the most basic skill of knowing the names of letters (Whitehurst & Lonigan, 1998), as well as their letter-sound knowledge, are emergent literacy skills that are important for later literacy (e.g., Lonigan, Burgess, & Anthony, 2000). Teachers can support the development of alphabetic knowledge and letter-sound associations by adult-mediation during play aimed at focusing on letters and their sounds (Pullen & Justice, 2003).

Related to letter and letter-sound knowledge is phonological awareness. Phonological awareness, or the knowledge that spoken words are comprised of various phonological units, is important for decoding, which children need for learning to read (Pullen & Justice, 2003). At preschool age, children's phonological awareness may be supported by using rhyme and alliteration during instruction or while playing as this helps children focus on the phonological structure of spoken language (Pullen & Justice, 2003). Blending (e.g., blending syllables into words) and segmenting activities (e.g., counting syllables in words) are other ways to support children's phonological awareness (Pullen & Justice, 2003).

Children's vocabulary development is also related to later reading and can be supported in many ways, for example, teachers can provide an ongoing description of their own activities or thoughts during storybook reading, or repeat or expand upon children's utterances (Pullen & Justice, 2003). To illustrate, Dickinson and Smith (1994) revealed the effects of preschool teachers' book reading on low-income children's vocabulary as well as on their comprehension. Children's comprehension skills, as result of storybook reading, can be improved if teachers ask open-ended, high-level questions during reading and encourage children's active participation (McGee & Schickedanz, 2007). Additionally, letting children retell stories supports their comprehension skills (Morrow, 1985).

Early or emergent writing is another foundational literacy skill that is important for children's later reading success (National Early Literacy Panel [NELP], 2008) and contributes to the development of letter knowledge and phonological awareness (Cabell, Tortorelli, & Gerde, 2013). Children's writing provides teachers with a window into what they know in regard to phonological awareness (Cabell et al., 2013). Teachers can use that knowledge to inform their instruction around writing and support each child's writing efforts. Teachers can incorporate writing into play activities, prompt children to draw and write about themselves, and point out the letters in children's names. Moreover, teachers can model writing skills by explicitly stating each step they make in constructing a text, for example, pointing out how a letter should begin with a greeting like "Hi" or "Hello", which is useful for children's acquisition of writing skills (Mayer, 2007). In sum, providing preschool children with rich writing experiences can contribute to laying a foundation for literacy learning (Cabell et al., 2013).

Item II-I: Adults support children's mathematics development throughout the day.

Young children instinctively compare quantities, observe, make patterns, and problem-solve in their play interactions with objects and peers (Linder, Powers-Costello, & Stegelin, 2011). A preschool teacher can act as a facilitator to make the child's informal connections to mathematics more explicit. Scaffolding and supporting early numeracy skills and general mathematics development in young children is important given the strong association between those early skills and later mathematical achievement (Raghubar & Barnes, 2017).

One aspect of early numeracy is subitizing, which means that a young child can determine the number of small sets without counting or, in other words, instantly (Linder et al., 2011). Preschool teachers may support children's subitizing skills through modeling. While the number of small sets can be determined by subitizing, counting is the only way to determine the exact number of small sets (Le Corre, Van de Walle, Brannon, & Carey, 2006). For this, children need to manage one-to-one correspondence, the basic skill of mapping each number word onto each item in a set (Raghubar & Barnes, 2017) which can be supported through counting together with children (Linder et al., 2011). One-to-one correspondence is central to the concept of cardinality (Sophian, 1988). Cardinality represents children's understanding that the last number word used when counting a set indicates the number of objects in that particular set (Raghubar & Barnes, 2017). Children who demonstrate cardinality therefore have a more sophisticated understanding of numbers than children who only count a set using one-to-one correspondence (Linder et al., 2011). Acquiring the cardinality principle is important as it is related to mathematical achievement at the end of preschool (Chu, Van Marle, & Geary, 2015) and is necessary for knowing the meaning of symbols and number words (Raghubar &

Barnes, 2017). In turn, symbolic number knowledge in the preschool years has been reliably associated with later mathematics achievement (Göbel, Watson, Lervåg, & Hulme, 2014).

Using measurement attributes to compare objects, such as quantity and length, is another fundamental component of children's mathematics development (Gerde, Schachter, & Wasik, 2013). Preschool teachers can teach children about measurement by providing them opportunities to learn about the physical properties of objects. One way to do this is by letting children make comparisons and by asking them guiding questions such as which of a set of objects is the tallest (Notari-Syverson & Sadler, 2008). The use of tools such as blocks and containers can be useful in this process. Another aspect of children's mathematics development in which teachers can take a supporting role is the knowledge of a variety of shapes. For example, teachers can talk with children about whether or not shapes roll and, in this process, elicit more information from children by asking questions (Gerde et al., 2013).

Item II-J: Adults support children's reasoning and problem-solving throughout the day.

Problem solving, a way to reach a goal that is not immediately attainable, is natural to young children because the world is new to them and, accordingly, they exhibit curiosity, intelligence, and flexibility as they encounter new situations (Tarim, 2009). It is important to build upon children's innate problem-solving tendencies by supporting and scaffolding children's reasoning in the problem-solving process.

One way in which teachers can support children's reasoning is by asking open-ended questions that allow children to participate fully in the co-construction of an activity (French, 2004). This may help children to think about scientific concepts. While posing open-ended questions, preschool teachers can introduce scientific language and model forms for asking,

planning, describing, and explaining (French, 2004). Additionally, it is important that teachers engage children in and teach them how to observe, question, predict, and summarize to draw conclusions (Gerde et al., 2013), which may help improve their problem-solving skills. Also, letting children talk about this scientific process can increase their ability to talk about a range of scientific concepts (French, 2004).

Item II-K: Adults encourage thoughtful social interaction among all children throughout the day.

Children's social development, the ability to form positive relationships with adults and peers, is important to children's readiness for school and is correlated with positive academic outcomes (Hair, Halle, Terry-Humen, Lavelle, & Calkins, 2006; La Paro & Pianta, 2000). Peer interactions are of particular importance in preschool and teachers can support them by providing children with positive feedback about their social interactions and fostering cooperative play (Brown & Odom, 1995). When children spend too much time interacting with teachers or other adults, they have fewer opportunities to benefit from interaction with peers (Johnson, Ironsmith, Snow, & Poteat, 2000).

Item II-L: Adults diffuse conflicts and support all children in resolving conflicts.

Disagreements between peers represent a critical developmental challenge. The teacher's role in resolving children's conflicts is crucial since learning to deal with conflict promotes socially competent behaviors (Vestal & Jones, 2004). Teachers can diffuse conflict situations to prevent them from escalating but teachers can also act as facilitators by helping children to resolve their own conflicts (Chen, 2003). The latter involves assisting children in identifying the problem, articulating feelings, and generating and accordingly implementing

mutually agreeable solutions (Bayer et al., in Chen, 2003). In fact, it has been shown that children in preschool classrooms of teachers who used conflict resolution strategies had a higher number of relevant conflict solutions — which suggests they were able to think of more ways to solve interpersonal conflicts — than children whose teachers were not trained to enact conflict resolution strategies (Vestal & Aaron Jones, 2004). This study showed that children can be taught to think of more relevant conflict solutions when confronted with an interpersonal conflict.

Domain 3: Curriculum, Planning, Assessment and Parent Engagement

Preschool teachers' tasks and responsibilities are not limited to providing daily routines and engaging children in high-quality learning experiences but extend to professional responsibilities beyond the classroom. These professional responsibilities entail collaboratively planning teaching based on evidence-based teaching approaches, recording child progress and using it to inform instructional planning, and planning for and engaging parents in their children's educational efforts. Taken together, these responsibilities positively impact child development and future outcomes.

Item III-A: Adults use a comprehensive, evidence-based educational model(s)/approach(es) to guide teaching practices.

A promising strategy for increasing the impact of early childhood education involves implementing in preschool classrooms evidence-based teaching strategies and curricula that build skills progressively in various specific learning domains (Bierman, Heinrichs, Welsh, Nix, & Gest, 2017). To illustrate, an evidence-based preschool curriculum has been found to foster language and literacy as well as social-emotional skills (Nix, Bierman, Domitrovich, & Gill, 2013).

In addition, to achieve successful inclusion of all children, teachers should adapt the preschool curriculum for children with special needs to their developmental level (Ahmetoğlu, 2015; Sucuoğlu, Bakkaloğlu, İşcen Karasu, Demir, & Akalin, 2013).

Item III-B: Adults document the developmental progress of each child using measures validated for preschool-aged children.

The need for high-quality assessment in every preschool should not be questioned. To this aim, it is important that preschool children's assessments are developmentally appropriate and sensitive to the developmental characteristics of young children that relate to testing, such as the ability to understand instructions (Teale, 1988). Observations are one way to assess children's development and growth and various measures can be used to guide child observations. In fact, observations may be an even more appropriate assessment method for preschool-aged children than standardized testing, as they are intrusive and often performed under artificial testing conditions (Teale, 1988). In turn, assessment information is necessary to inform instructional decisions and may allow for early intervention for the children who are in need of this (Bayoglu, Bakar, Kutlu, Karabulut, & Anlar, 2007; Teale, 1988).

Item III-C: Adults record and use anecdotal notes to create lesson plans that are connected to learning goals and focused on learning through developmentally appropriate practices (play).

Anecdotal notes are written descriptions that provide a short, factual, objective, nonjudgmental account of an event or incident and do not include a teachers' interpretation of the event (Wortham, Barbour, & Desjean-Perrotta, 1998). These anecdotal notes can be used to document the skills and development they observe in the preschool classroom (Ratcliff,

2001; Wortham et al., 1998). An advantage of these notes over checklists is the richness and depth that could be documented in them. This type of information can be used to provide insights that may help the teacher more fully understand a child's behavior, development, or use of skills (Ratcliff, 2001). Specifically, this form of embedded, authentic assessment provides information about children's strengths and challenges and provides insight into how children learn and what they are learning (Wortham et al., 1998). Such information may be used to support summative assessment decisions. In addition, the information contained in these notes may be used to guide the selection of certain activities or teaching approaches (Rhodes & Nathenson-Meija, 1992; Wortham et al., 1998).

Preschool teachers may document the planning of classroom activities in lesson plans. In lesson plans, goals and objectives are chosen from yearly plans that state the objectives for children to attain during a whole year (Erden, 2010). Accordingly, these lesson plans should involve objectives appropriate for the age of preschool children as well as various activities, which can be either teacher- or child-directed, aimed to achieve these objectives (Erden, 2010; Justice, 2004).

The development of lesson plans, which can be done in advance, for example per week, is a responsibility of the entire team in preschool (Justice, 2004). The entire team must be knowledgeable about the structure and content of the plan. Furthermore, it is important that lesson plans and the objectives included in them are developmentally appropriate for preschool-aged children. Lesson plans can be used to enhance school readiness, but it should be realized that young children learn differently from older children or adults and their ways of making sense of the world rely heavily on play (Nicolopoulou, 2010). It is developmentally

inappropriate to enact an exclusively a top-down, directive approach for preschool-aged children rather than incorporating play in lesson plans. Instead, incorporating play is appropriate as play is not simply trivial, but is an intensely absorbing activity that serves as a source for learning and development (Nicolopoulou, 2010).

Item III-D: Adults provide many family engagement options, encourage two-way sharing of child information, and support families with program transitioning.

Parent engagement in preschool is essential for children's development and achievement through its influence on parent-child interactions as well as for parent-teacher relationships (e.g., Ma, Shen, Krenn, Hu, & Yuan, 2016; Mendez, 2010; Nix, Bierman, Motamedi, Heinrichs, & Gill, 2018). In fact, the meta-analysis of Ma et al. (2016) showed that the role of parental involvement in influencing learning outcomes was more important than the role of communities and schools. This home-school connection is particularly important for children and families from disadvantaged backgrounds who often lack exposure to high-quality resources (Mendez, 2010). Parental engagement involves participation of parents in classroom activities and the exchange of information between parents and teachers about a child's learning, behavior, and accomplishments (Fantuzzo et al., 2013; Ma et al., 2016). Also, parents may learn from teachers how to help their child at home, for example, by using resources and materials that are shared with parents (Fantuzzo et al., 2013; Mendez, 2010; Nix et al., 2018). Sharing information about children's development is of importance during transitions to enhance continuity between preschool, school, and home. In turn, this is important for the prevention of difficulties in transitions. For example, Alatalo, Meier, and Frank (2017) illustrate

that sharing information about children's literacy learning during the transition from preschool to elementary school is perceived by teachers as being important in this transition.

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Preschool Program Quality Assessment – Revised (PQA-R)

Technical Report

Preschool PQA-R Overview

HighScope developed the PQA-R to evaluate the quality of early childhood classrooms for four- to five-year-olds as well as identify the training needs of the classroom staff. The assessment is intended for classroom evaluation in that a trained independent evaluator rates the classroom characteristics. Alternatively, the tool can be used as a self-assessment tool by administrators or instructional staff for classroom planning and monitoring. The PQA-R can be used for research and evaluation as well as to provide information to policymakers, program administrators, families, and researchers. Each section comprises items that describe a broad array of classroom characteristics and rows that describe the quality of the classroom characteristics.

Assessors assign a level from 1 (no or poor quality) to 4 (highest quality) for each row. The rows are summed to produce an aggregate score for each section. Each section is then assigned a performance level of Low, Medium Low, Medium High, or High. The PQA-R defines quality along a continuum. Teachers and program administrators are able to see where each classroom lies along the continuum of quality and use the results to systematically plan school improvement goals and objectives. Based on classroom observations and structured interviews with teaching staff, PQA-R assessors rate classrooms on the quality of the learning environment, teaching and learning routines, adult-child interactions, curriculum, planning and assessment, and family engagement.

The assessment is made up of one form across three Sections: 1. Learning Environment; 2. Teaching and Learning Routines and Adult-Child Interactions; 3. Curriculum, Planning, Assessment, and Family Engagement. The form comprises 20 items and 61 rows across the three sections.

Administration, Scoring, and Interpretation

The PQA-R is an observational assessment and thus the reliability of the results and the effectiveness of its use relies on the ability of the observer to both observe accurately and score reliably. The administration of the PQA-R, for accountability purposes, requires a trained and reliable observer to spend at least 3 hours and up to an entire day in the preschool classroom to complete the form, as evidence for each row must be entered before the observer assigns scores. The trained observer completes the Materials Checklist and keeps a running log of all the activities and adult-child interactions observed during the observation period. Sections 1 and 2 contain rows that can be scored through observation only, and Section 3 contains rows that can only be scored by gathering additional information from classroom staff using the guiding questions provided. Each row is scored on a 4-point scale. Indicators for all scores 1–4

are described to assist assessor scoring. The scoring guide provides examples of evidence for each level to help the assessor determine the quality level for that row on a scale from 1 to 4.

The row scores are then totaled to get a Section Score. The Section Score is then interpreted into a Performance Level (i.e., Low, Medium Low, Medium High, or High). The overall results are reported as three Section Scores and three Performance Levels.

Development of the PQA-R

HighScope developed the PQA-R by revising and refining the original Preschool Program Quality (PQA) based on the extant research about how and what to measure to determine preschool classroom quality. Content experts reviewed the revised version to determine that the breadth and depth of quality indicators were included in the revised assessment. We subsequently revised the draft version based on the content experts' recommendations for improvement for use for the validation study to determine the validity, reliability, and fairness of the PQA-R results.

Validation Study

HighScope conducted three iterative rounds for the validation study. We conducted the first two studies to gather information through psychometric analyses and assessor feedback to revise and refine the instrument. We conducted the third study to determine the psychometric properties of the instrument (including cut scores) and further revise and refine the PQA-R for use during the 2018–2019 school year.

During the third study, 110 experienced assessors (with at least 2 years of experience using the prior version of the PQA-R) completed 196 PQA-R assessments of preschool classrooms. The assessors were from varied backgrounds and programs and had varied levels of education and experience in assessing classrooms using observation-based instruments. The preschool classrooms were a mix of state-funded preschools, federally funded preschools, and private preschools, including Montessori preschools. The classrooms were located in urban, suburban, and rural locations in nine states, and the teachers and students were of varied races, ethnicities, and income levels.

Results of the Validation Study

Scale Reliabilities (Cronbach's Alpha) (n = 196)

The scale reliabilities show good to excellent internal consistency. The Section 1 scale (Learning Environment) consists of 15 items ($\alpha = .84$), the Section 2 scale (Teaching and Learning Routines and Adult-Child Interactions) consists of 40 items ($\alpha = .94$), and the Section 3 scale (Curriculum, Planning, Assessment, and Family Engagement) consists of 14 items ($\alpha = .82$). Removal of any item within a section does not increase or decrease the internal consistency.

Results of the test retest reliability for section 1 and section 2 showed high test-retest reliability. The correlation between test and retest was around .94 in both cases.

Interrater Reliability

The effects of training on interrater agreement were determined through a study conducted by presenting trained assessors with 15 scenarios that described a classroom or adult-child interactions (e.g., *The Daily Routine is posted in words on the upper part of door for adults. Children review the question of the day and review the weather. T1 says they will go outside*). The assessors used the PQA-R to rate each scenario. A proprietary survey tool, KeySurvey, was used to administer the interrater reliability assessment and to gather the data. The assessor rater scores were compared to scores which a team of HighScope raters, who were familiar with the instrument, agreed on after rating the scenarios individually and accordingly agreed on the most appropriate score. Using the data collected from 110 assessors (raters) and 15 scenarios, three measurements of interrater agreement were used: exact and adjacent agreement percentages, Kappa for polytomous responses, and intra-class correlation using a two-way ANOVA random model. (Both the scenarios and assessors are random samples of their respective populations.)

The average exact percentage among the 15 scenarios was about 87%, while the adjacent percentage was about 99%. The average Kappa for multiple response options is 0.87; levels above .80 imply an excellent amount of agreement. The ICC (reliability of the mean) is 0.994 (95% CI: 0.989 - 0.997), implying an excellent degree of agreement among raters and suggesting that the scenarios, on average, were coded similarly among the 110 assessor raters.

Implementation Study

The implementation study was conducting during the 2018–2019 school year to determine the psychometric properties of the instrument (including cut scores) and further revise and refine the PQA-R to develop a fully operationalized assessment for the 2019–2020 school year.

During the implementation study, 117 trained assessors completed 889 PQA-R assessments of preschool classrooms. The assessors were from varied backgrounds and programs and had varied levels of education and experience in assessing classrooms using observation-based instruments. The preschool classrooms were a mix of state-funded preschools, federally funded preschools, and private preschools, including Montessori preschools. The classrooms were located in urban, suburban, and rural locations, and the teachers and students were of varied races, ethnicities, and income levels.

Results of the Implementation Study

Model Fit, Wright Maps, and Item Curve Characteristics (RASCH)

The weighted and unweighted Mean-Square fit statistics for 57 of the 59 items were all below 1.5, meaning that we did not observe misfit for any of those 57 items beyond that expected within the Partial Credit Rasch model. Two items were misfitting (above 2.0), indicating more noise than information. We determined that the two items were too important to delete so we reworded the items for clarity.

The Wright Map shows that our a priori predictions about the relative difficulty of items were correct. Items that are more difficult are at or near the top and items that are less difficult are at or near the bottom. Our Wright Map of MLE Estimates and Thresholds shows the general orderliness with which the polytomous item steps group with developmental level 1 at the bottom, followed by levels 2 and levels 3, with level 4 at the top. The polytomous Item Curve Characteristics across the items provide evidence of an orderly successive progression of developmental levels.

Scale Reliabilities (Cronbach's Alpha) (n=889)

The scale reliabilities show good to excellent internal consistency. The Section 1 scale (Learning Environment) consists of 16 items (α = .83), the Section 2 scale (Teaching and Learning Routines and Adult-Child Interactions) consists of 44 items (α = .95), and the Section 3 scale (Curriculum, Planning, Assessment, and Family Engagement) consists of 15 items (α = .86). Removal of any item within a section does not increase or decrease the internal consistency.

Correlations (Rasch): We show the intercorrelations among the sections of the PQA-R in Table 1.

Table 1 PQA-R: Section Correlations

PQA-R Sections	LE	Curriculum/Assessment
Learning Environment		
T/L Routines, A/C Interactions	.72	.73
Curriculum/Assessment	.70	

Interrater Reliability of the Implementation Study

The effects of training on interrater agreement were determined as well in the implementation study by presenting trained assessors with 20 scenarios that described a classroom or adult-child interactions (e.g., *Teachers are scheduled to plan on Fridays, but many times meetings are scheduled, absorbing the time set for teacher planning. Both teachers report that about once a month they are able to use the COR Advantage data to plan for children*). The assessors used the PQA-R to assess each scenario. A proprietary survey tool, KeySurvey, was used to administer the interrater reliability assessment and gather the data. The assessor rater scores were compared to scores that a team of HighScope raters, who were familiar with the instrument, assigned after rating the scenarios individually and together. Using the data collected from 117 assessors (raters) and 20 scenarios, three measurements of interrater agreement were used: exact and adjacent agreement percentages, Kappa for polytomous

responses, and intra-class correlation using a two-way ANOVA random model. (Both the scenarios and assessors are random samples of their respective populations.)

The average exact percentage among the 20 scenarios was 73.1%, while the adjacent percentage was 99.2%. The average Kappa for multiple response options is 0.833 (95% CI 0.773, 0.888); levels above .80 imply an excellent amount of agreement. The ICC (reliability of the mean) is 0.999 (95% CI 0.998, 0.999), implying an excellent degree of agreement among raters.

Developing Cut Scores for the PQA-R

Although the PQA-R reports the score for each row, it also aggregates the scores for all rows in a section. These aggregated scores are hard to interpret unless cut scores are identified that divide the scale into performance levels. Dividing the scale into meaningful segments allows for reporting performance levels for each section of the PQA-R as Low, Medium Low, Medium High, and High as well as reporting of the percentage of classrooms at each performance level. We analyzed the results using the Rasch Rating Scale Model and then used an application of Item Response Theory to identify the cut scores using Winsteps. This approach yields criterion-based cut scores without the need for subjective expert judgement.

This approach was used to identify cut scores to divide the scale, for each section, into four performance levels that can be described as follows:

Performance Level 1 High — Across the Section, assessors are more likely to endorse Level 4 than other response options, indicating a high level of quality overall.

Performance Level Medium High — Across the Section, assessors are more likely to endorse Levels 3–4 than other response options, indicating a medium-high level of quality overall.

Performance Level Medium Low — Across the Section, assessors are more likely to endorse Levels 2–3 than other response options, indicating a medium-low level of quality overall.

Performance Level Low — Across the Section, assessors are more likely to endorse Levels 1–2 than other response options, indicating a low level of quality overall.

Summary

The implementation study results show that the PQA-R assessment provides reliable and valid psychometric measurement of the quality of preschool classrooms in three key dimensions. Expected levels of intercorrelations between sections are evident in the data.