Measuring Quality in Early Care and Education: Updated Tool Comparison (CLASS & ECERS-3)

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Division of Childcare & Early Childhood Education
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CLASS & ECERS-3 Crosswalk

Introduction:
The purpose of this document is to provide an updated content analysis of the Early Childhood Environment Rating Scale (ECERS-3; Harms, Clifford, & Cryer, 2014) with the Classroom Assessment Scoring System (CLASS; Pianta, LaParo, & Hamre, 2008). Improving on its predecessor, the ECERS-R (Revised Edition, Harms, Clifford, & Cryer, 2005), the ECERS-3 now puts more emphasis on the role of the teacher in creating an environment conducive to developmental gains.

In comparing these two measures, the ECERS-3 focuses on very specific and tightly defined components of teaching and children’s experiences in the center itself, whereas the CLASS was designed to measure interactions between teachers and children in the classroom, and is more broadly aimed at concepts that lead to high-quality instruction. The CLASS does not measure the physical environment or provision of materials, such as high-quality physical facilities, well-established and robust health and safety practices, and use of a varied, well-developed curriculum. Theoretically and empirically, the structural components of the classroom would provide teachers with the materials needed to optimally interact with students. Therefore, the CLASS and ECERS have historically complemented one another – with the elements assessed with the CLASS building on the elements assessed with the ECERS.

A previous content comparison suggests the ECERS-R had a modest overlap with the CLASS, however results of our updated comparison show there is now a much larger overlap between the tools. Of the total 42 items on the CLASS measure, nearly three quarters (71%) are rated as “somewhat represented” or “clearly represented” in ECERS-3. The clusters “Positive Climate”, Teacher Sensitivity”, and “Regard for Student Perspectives”, are especially well matched in ECERS-3. As a result, the ECERS-3 clearly represents a significant improvement over the ECERS-R in assessment of quality teacher-child interaction.

While this improvement is promising, empirical studies of children’s outcomes that include measurement of the environment with both the CLASS and ECERS-3 are needed. Further, the revision of the Infant Toddler Environmental Rating Scale (ITERS-3) has become available since our review, and future research should consider an ITERS-3/Infant and Toddler CLASS comparison.

Crosswalk Methods:
Items in the CLASS represent a concept of high quality instruction that could be applied or recognized in a variety of situations. In addition to the overall concept title, each individual item consists of 3-5 sub areas that are components, and further descriptors of that item. For example, “Punitive Control” is made up of 1) yelling, 2) threats, 3) physical control, and 4) harsh punishment. In addition to a narrative-style grading matrix, a small side bar description on each page gives a more concrete sense of what that item meant to measure on what different levels of adherence or presence might look like in-person.

When rating each CLASS item’s fit within ECERS-3, we considered two things:

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1. The total number of times a CLASS item matched well with any ECERS-3 item
2. The percentage of each CLASS item’s sub-areas that were involved in those matches

For example, some CLASS items like Punitive Control have a small number of overall matches (5) but still received the highest match rating (“clearly represented”). This was because the existing matches were such a clear fit and nearly all of the CLASS item’s sub-areas were represented in that match. Continuing in this fashion, each CLASS item was reviewed line-by-line through each ECERS-3 component and matches were compiled and rated as being “not or rarely represented”, “somewhat represented”, or “clearly represented” in ECERS-3.

After the initial ratings were complete, all areas of uncertainty were reviewed by a curriculum content expert. In addition, the entire crosswalk has subsequently been reviewed by a second outside content expert at Arkansas State University. Final results are displayed in brief on pages 4-5, with detailed appendices beginning on page 6.

Overview of the CLASS:

The CLASS dimensions are based on development theory and research suggesting that interactions between students and adults are the primary mechanism of student development and learning (Greenberg, Domitrovich, & Bumbarger, 2001; Hamre & Pianta, 2007; Morrison & Connor, 2002; Pianta, 2006; Rutter & Maughan, 2002). The CLASS dimensions are based on interactions between and among teachers and students in classrooms; scoring for the dimensions is not determined by the presence of materials, the physical environment or safety, or the adoption of a specific curriculum. In the CLASS, the focus is on what teachers do with the materials they have and on the interactions the teachers have with the students. CLASS contains 42 items organized into 10 clusters. At the broadest level, these clusters are grouped into 3 domains: Emotional support, classroom organization, and instructional support

Overview of ECERS-3:

ECERS is perhaps the most commonly used measure of quality in early childhood education classrooms today, and has been repeatedly validated over time (e.g., Aboud & Hossain, 2011; Burchinal, Kainz & Cai, 2011; Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Cryer et al., 1999; Whitebook, Howes, & Phillips, 1989). It examines materials, physical facilities, schedule, curriculum, etc. as well as the quality of teacher-child interactions.

The ECERS-3 is an updated version of the ECERS-R that has been revised to include a greater focus on the quality of teacher-child interactions. ECERS-3 contains 35 items and is organized into 6 clusters: Space and furnishings, personal care routines, Language and literacy, learning activities, interaction, and program structure.

2 http://curriculaconcepts.com/about/; Jamie Morrison Ward, President, Curricula Concepts
3 http://asuchildhoodservices.org/#/staff_directory; Janice Carter, Program Coordinator, Arkansas State University Childhood Services
Crosswalk Table:

<table>
<thead>
<tr>
<th>CLASS Items</th>
<th>CLASS Elements Represented in ECERS-3?</th>
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<tbody>
<tr>
<td></td>
<td>Item not or rarely represented</td>
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<tr>
<td>Positive Climate</td>
<td></td>
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<tr>
<td>1. Relationships</td>
<td></td>
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<td>2. Positive Affect</td>
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<td>3. Positive Communication</td>
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<td>4. Respect</td>
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<tr>
<td>Negative Climate</td>
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<td>5. Negative Affect</td>
<td></td>
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<tr>
<td>6. Punitive Control</td>
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<tr>
<td>7. Sarcasm/Disrespect</td>
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<td>8. Severe Negativity</td>
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<tr>
<td>Teacher Sensitivity</td>
<td></td>
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<tr>
<td>9. Awareness</td>
<td></td>
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<td>10. Responsiveness</td>
<td></td>
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<tr>
<td>11. Address Problems</td>
<td></td>
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<td>12. Student Comfort</td>
<td></td>
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<tr>
<td>Regard for Student Perspectives</td>
<td></td>
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<tr>
<td>13. Flexibility and Student Focus</td>
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<tr>
<td>14. Support for Autonomy and Leadership</td>
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<td>15. Student Expression</td>
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<tr>
<td>16. Restriction of Movement</td>
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<tr>
<td>Behavior Management</td>
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<td>17. Clear Behavior Expectations</td>
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<td>18. Proactive</td>
<td></td>
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<td>19. Redirection of Misbehavior</td>
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<td>20. Student Behavior</td>
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<td>Productivity</td>
<td></td>
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<td>22. Routines</td>
<td></td>
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<td>23. Transitions</td>
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<td>24. Preparation</td>
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<tr>
<td>Instructional Learning Formats</td>
<td></td>
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<tr>
<td>25. Effective Facilitation</td>
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<tr>
<td>26. Variety of Modalities and Materials</td>
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<tr>
<td>27. Student Interests</td>
<td></td>
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<tr>
<td>28. Clarity of Learning Objectives</td>
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</tbody>
</table>

Table Guide:

This table shows the overall number of matches between each CLASS item and the ECERS-3, along with the overall level of similarity between the two.

See Appendix A for a more detailed breakdown of each match.
| 29. Analysis and Reasoning | 3 |
| 30. Creating | 8 |
| 31. Integration | 6 |
| 32. Connections to the Real World | 19 |

**Quality of Feedback**

| 33. Scaffolding | 3 |
| 34. Feedback Loops | 0 |
| 35. Prompting Thought Processes | 1 |
| 36. Providing Information | 0 |
| 37. Encouragement and Affirmation | 9 |

**Language Modeling**

| 38. Frequent Conversations | 15 |
| 39. Open-Ended Questions | 7 |
| 40. Repetition and Extension | 0 |
| 41. Self- and Parallel Talk | 2 |
| 42. Advanced Language | 8 |

<table>
<thead>
<tr>
<th>10 Subscales, 42 Items</th>
<th>Item not or rarely represented</th>
<th>Item somewhat represented</th>
<th>Item clearly represented</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 of 42 Items (29%)</td>
<td>16 of 42 Items (38%)</td>
<td>14 of 42 Items (33%)</td>
<td></td>
</tr>
</tbody>
</table>

*Although there is a very large number of matches for this area, the content of the matches does not fit well within the spirit of CLASS’s description. CLASS describes this area as the teacher using a variety of materials and modalities to actively and creatively engage students and keep their attention during a lesson. However, the matching items in ECERS-3 only require the variety of materials are available at all, or specifically reference availability during free play or center time. There are also very few matches that reference the use of multiple modalities. Therefore, this item has been scored as “somewhat represented”.

(See next page for a breakdown of each match)
## Appendix A: List of ECERS-3 Items

<table>
<thead>
<tr>
<th>ECERS-3 Items</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Space and Furnishings</strong></td>
<td></td>
</tr>
<tr>
<td>E1. Indoor space</td>
<td>E28. Supervision of gross motor</td>
</tr>
<tr>
<td>E2. Furniture for routine care, play</td>
<td>E29. Individualized teaching and learning</td>
</tr>
<tr>
<td>and learning</td>
<td></td>
</tr>
<tr>
<td>E3. Room arrangement for play and</td>
<td>E30. Staff-child interactions</td>
</tr>
<tr>
<td>learning</td>
<td></td>
</tr>
<tr>
<td>E4. Space for privacy</td>
<td>E31. Peer interactions</td>
</tr>
<tr>
<td>E5. Child-related display</td>
<td>E32. Discipline</td>
</tr>
<tr>
<td>E6. Space for gross motor play</td>
<td></td>
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<tr>
<td>E7. Gross motor equipment</td>
<td></td>
</tr>
<tr>
<td><strong>Personal Care Routines</strong></td>
<td><strong>Program Structure</strong></td>
</tr>
<tr>
<td>E8. Meals/snacks</td>
<td>E33. Transitions and wait times</td>
</tr>
<tr>
<td>E9. Toileting/diapering</td>
<td>E34. Free play</td>
</tr>
<tr>
<td>E10. Health practices</td>
<td>E35. Whole group activities for play and learning</td>
</tr>
<tr>
<td>E11. Safety practices</td>
<td></td>
</tr>
<tr>
<td><strong>Language and Literacy</strong></td>
<td>6 Subscales, 35 Items</td>
</tr>
<tr>
<td>E12. Helping children expand vocabulary</td>
<td></td>
</tr>
<tr>
<td>E13. Encouraging children to use</td>
<td></td>
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<tr>
<td>language</td>
<td></td>
</tr>
<tr>
<td>E14. Staff use of books with children</td>
<td></td>
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<tr>
<td>E15. Encouraging children’s use of</td>
<td></td>
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<tr>
<td>books</td>
<td></td>
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<tr>
<td>E16. Becoming familiar with print</td>
<td></td>
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<tr>
<td><strong>Learning Activities</strong></td>
<td></td>
</tr>
<tr>
<td>E17. Fine motor</td>
<td></td>
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<tr>
<td>E18. Art</td>
<td></td>
</tr>
<tr>
<td>E19. Music/movement</td>
<td></td>
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<tr>
<td>E20. Blocks</td>
<td></td>
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<tr>
<td>E21. Dramatic play</td>
<td></td>
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<tr>
<td>E22. Nature/science</td>
<td></td>
</tr>
<tr>
<td>E23. Math materials and activities</td>
<td></td>
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<tr>
<td>E24. Math in daily events</td>
<td></td>
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<tr>
<td>E25. Understanding written numbers</td>
<td></td>
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<tr>
<td>E26. Promoting acceptance of diversity</td>
<td></td>
</tr>
<tr>
<td>E27. Appropriate use of technology</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Description of Matches

Below is each individual match between CLASS items and ECERS-3, as well as a description that justifies that match. The outline can be read as follows: CLASS item (CLASS item sub-areas); E13 = ECERS item 13; 1.2 = ECERS sub-item 1.2.

1 **Relationships:** (Physical proximity, shared activities, peer assistance, matched affect, social conversation)
   a. E13
      i. 1.2 = Indication of cold or oppositional relationship between teacher and child
      ii. 1.5 = Restriction or absence of social conversation
      iii. 5.3 = Warm and encouraging attitude by teacher
      iv. 7.3 = Warm and encouraging attitude by teacher. Social conversation
   b. E18
      i. 5.3 = Warm and encouraging attitude by teacher
   c. E21
      i. 5.3 = Social conversation and warm interest in child
   d. E30
      i. 1.1 = Indication of cold or oppositional relationship between teacher and child
      ii. 1.2 = Indication of cold or oppositional relationship between teacher and child
      iii. 3.3 = Warm and encouraging attitude by teacher
      iv. 5.3 = Warm and encouraging attitude by teacher. Physical proximity.
      v. 7.1 = Warm and encouraging attitude by teacher
   e. E31
      i. 1.3 = Restriction or absence of social conversation and shared activities.
      ii. 5.3 = Warm and positive relationships among students

2 **Positive Affect** (Smiling, laughter, enthusiasm)
   a. E14
      i. 1.3 = Lack of affect while reading to children
      ii. 5.4 = Use of positive affect while reading to children
   b. E23
      i. 5.2 = Show of enthusiasm
   c. E30
      i. 5.1 = Smiling

3 **Positive Communication** (Verbal affection, physical affection, positive expectations)
   a. E13
      i. 1.2 = Indication of cold or oppositional communications
      ii. 5.3 = Indication of positive communication
   b. E30
      i. 1.1 = Lack of verbal or physical affection or bonding
      ii. 1.2 = Lack of positive communication
      iii. 5.3 = Physical affection
   c. E32
      i. 1.3 = Lack of positive expectations
      ii. 1.4 = Negative communication
      iii. 5.4 = Absence of negative communication
4 **Respect** (Eye contact, warm & calm voice, respectful language, cooperation and/or sharing)
   a. E13
      i. 5.4 = Encouraging sharing and cooperation
   b. E26
      i. 1.3 = Staff demonstrate prejudice
         ii. 7.2 = Respectful discussion of difference
   c. E30
      i. 5.1 = Eye contact and shared interests
         ii. 7.1 = Staff demonstrate respect for children
   d. E31
      i. 3.3 = Modeling respectful behavior
   e. E32
      i. 3.4 = Staff treat children with respect while disciplining

5 **Negative Affect** (Irritability, anger, harsh voice, peer aggression, disconnected or escalating negativity)
   a. E9
      i. 1.3 = Anger and harsh voice
   b. E13
      i. 1.2 = Irritable and/or negative affect
   c. E24
      i. 1.3 Irritable and/or negative affect
   d. E28
      i. 1.2 = Irritable or angry
   e. E31
      i. 1.3 = Peer aggression
   f. E32
      i. 1.1 = Anger, harsh voice
         ii. 1.4 = Anger

6 **Punitive control** (Yelling, threats, physical control, harsh punishment)
   a. E9
      i. 1.3 = Yelling
   b. E24
      i. 1.2 = Verbal threatening
   c. E28
      i. 1.2 = Punitive environment
   d. E30
      i. 1.3 = Physical control
   e. E32
      i. 1.1 = Physical control, yelling

7 **Sarcasm/Disrespect** (Sarcastic voice/statement, teasing, humiliation)
   a. E26
      i. 1.3 = Disrespect
8 **Severe Negativity** (Victimization, bullying, physical punishment)
   a. E31
      i. 1.3 = Bullying
   b. E32
      i. 1.1 = Physical punishment

9 **Awareness** (Anticipates problems and plans appropriately, notices lack of understanding and/or difficulties)
   a. E11
      i. 7.3 Anticipates problems and plans appropriately, aware of students who need extra support, assistance, or attention.
   b. E12
      i. 5.4 Aware of students who need extra support, assistance, or attention
   c. E14
      i. 5.2 Aware of students who need extra support, assistance, or attention
   d. E30
      i. 7.1 = Aware of students who need extra support, assistance, or attention
         ii. 7.2 = Aware of students who need extra support, assistance, or attention
         iii. 7.3 = Aware of students who need extra support, assistance, or attention, anticipates problems and plans appropriately
   e. E35
      i. 5.2 = Aware of students who need extra support, assistance, or attention, anticipates problems and plans appropriately

10 **Responsiveness** ( Acknowledges emotions, provides comfort and assistance, provides individualized support)
   a. E9
      i. 7.3 = Acknowledges emotions, provides individualized support
   b. E12
      i. 5.4 Provides individualized support
   c. E14
      i. 5.4 Provides individualized support
   d. E29
      i. 1.1 = Lack of individualized support or opportunities
         ii. 1.3 = Lack of individualized support or opportunities
         iii. 3.1 = Some individualized support or opportunities
         iv. 3.3 = Some individualized support or opportunities
         v. 5.2 = Individualized support or opportunities
         vi. 7.1 = Individualized support or opportunities
         vii. 7.2 = Individualized support or opportunities
   e. E30
      i. 7.1 = Acknowledges emotions, provides comfort and assistance
         ii. 7.2 = Acknowledges emotions, provides comfort and assistance
         iii. 7.3 = Acknowledges emotions, provides comfort and assistance
   f. E35
      i. 5.2 = Provides individualized support
11 **Addresses Problems** (Helps in an effective and timely manner, helps resolve problems)
   a. E31
      i. 1.2 = Lack of effective problem resolution
      ii. 1.3 = Lack of effective problem resolution
      iii. 3.2 = Some effective problem resolution
      iv. 5.2 = Effective problem resolution
   b. E32
      i. 7.3 = Effective problem resolution

12 **Student Comfort** (Seeks support and guidance, freely participates, takes risks)
   a. E28
      i. 5.2 = Freely participates
   b. E35
      i. 7.3 = Freely participates

13 **Flexibility and Student Focus** (Shows flexibility, incorporates student’s ideas, follows lead)
   a. E4
      i. 1.1 = Lack of flexibility or student-lead focus
      ii. 3.1 = Flexibility, student-lead focus
      iii. 7.2 = Flexibility, student-lead focus
   b. E9
      i. 5.1 = Flexibility, student-lead focus
      ii. 7.3 = Flexibility, student-lead focus
   c. E29
      i. 1.1 = Lack of flexibility or student-lead focus
      ii. 1.2 = Lack of flexibility or student-lead focus
      iii. 1.3 = Lack of flexibility or student-lead focus
      iv. 3.1 = Some flexibility or student-lead focus
      v. 3.2 = Some flexibility or student-lead focus
      vi. 3.3 = Some flexibility or student-lead focus
      vii. 5.1 = Flexibility, student-lead focus
      viii. 5.2 = Flexibility, student-lead focus
      ix. 7.1 = Flexibility, student-lead focus
      x. 7.2 = Flexibility, student-lead focus
   d. E35
      i. 5.1 = Flexibility, student-lead focus

14 **Support for Autonomy and Leadership** (Allows choice, allows students to lead lessons, gives students responsibilities)
   a. E4
      i. 1.1 = Lack of choice or student-lead focus
      ii. 3.1 = Availability of choice, student-lead focus
      iii. 7.2 = Availability of choice, student-lead focus
   b. E18
      i. 1.2 = Lack of choice or student-lead focus
      ii. 5.2 = Availability of choice, student-lead focus
   c. E19
      i. 7.1 = Availability of choice, student-lead focus
d. E21
   i. 5.3 = Availability of choice, student-lead focus

e. E29
   i. 1.1 = Lack of choice or student-lead focus
   ii. 1.2 = Lack of choice or student-lead focus
   iii. 1.3 = Lack of choice or student-lead focus
   iv. 3.1 = Some choice or student-lead focus
   v. 3.2 = Some choice or student-lead focus
   vi. 3.3 = Some choice or student-lead focus
   vii. 5.1 = Availability of choice, student-lead focus
   viii. 5.2 = Availability of choice, student-lead focus
   ix. 7.1 = Availability of choice, student-lead focus
   x. 7.2 = Availability of choice, student-lead focus

f. E31
   i. 1.1 = Lack of choice
   ii. 3.1 = Some choice

g. E32
   i. 7.3 = Student-lead focus, gives students responsibilities

h. E33
   i. 7.1 = Availability of choice, student-lead focus

i. E35
   i. 7.3 = Availability of choice, student-lead focus

15 Student Expression (Encourages student talk, elicits ideas and/or perspectives)

   a. E13
      i. 1.1 = No solicitation of student ideas/perspectives
      ii. 1.2 = Discourages expression
      iii. 1.3 = Discourages expression
      iv. 1.4 = Discourages expression
      v. 3.4 = Some encouragement of expression
      vi. 5.1 = Solicitation of student ideas/perspectives
      vii. 5.3 = Solicitation of student ideas/perspectives
      viii. 7.1 = Solicitation of student ideas/perspectives

   b. E20
      i. 5.5 = Solicitation of student ideas/perspectives

   c. E23
      i. 7.2 = Solicitation of student ideas/perspectives

16 Restriction of Movement (Allows movement, is not rigid)

   a. E4
      i. 1.1 = Restriction of movement
      ii. 3.1 = Freedom of movement

   b. E6
      i. 1.1 = Restriction of movement
      ii. 3.1 = Allowance for movement
      iii. 5.1 = Allowance for movement

   c. E33
      i. 7.1 = Freedom of movement
17 Clear Behavior Expectations (Clear expectations, consistency, clarity of rules)
   a. E4
      i. 5.3 = Clear expectations/clarity of rules
      ii. 7.2 = Clear expectations/clarity of rules
   b. E31
      i. 3.2 = Consistency, clear expectations
   c. E32
      i. 1.2 = Lack of consistency
      ii. 5.1 = Clarity of rules, clear expectations
   d. E33
      i. 5.1 = Clear expectations
   e. E34
      i. 5.4 = Clarity of rules, clear expectations, consistency

18 Proactive (Anticipates problem behavior or escalation, low reactivity, monitors)
   a. E4
      i. 5.3 = Anticipates problem behavior or escalation, monitors
      ii. 7.2 = Anticipates problem behavior or escalation
   b. E11
      i. 5.3 = Monitors
   c. E30
      i. 7.1 = Low reactivity
   d. E31
      i. 3.2 = Anticipates escalation
      ii. 7.2 = Anticipates problem behavior or escalation
   e. E32
      i. 7.2 = Highly proactive, anticipates problem behavior or escalations
   f. E33
      i. 7.1 = Low reactivity

19 Redirection of Misbehavior (Effective reduction of misbehavior, attention to the positive, uses subtle cues to redirect, efficient redirection)
   a. E8
      i. 1.3 = Focus on the negative, ineffective redirection
   b. E16
      i. 1.2 = Ineffective redirection
   c. E30
      i. 7.1 = Attention to the positive
   d. E31
      i. 5.2 = Efficient redirection, effective reduction of misbehavior
      ii. 7.1 = Focus on positive
      iii. 7.2 = Efficient redirection
   e. E32
      i. 7.3 = Effective reduction of misbehavior, attention to the positive, efficient redirection

20 Student Behavior (Frequent compliance, little aggression and defiance)
a. E32
   i. 3.2 = Little/some compliance
   ii. 5.1 = General compliance
b. E33
   i. 1.1 = Lack of compliance
   ii. 3.3 = General compliance
   iii. 5.1 = General compliance

21 Maximizing Learning Time (Provision of activities, choice when finished, few disruptions, effective completion of managerial tasks, pacing)
a. E19
   i. 7.1 = Choice when finished
b. E29
   i. 3.2 = Some provision of activities
   ii. 5.1 = Provision of activities
c. E34
   i. 3.3 = Choice when finished
d. E35
   i. 7.3 = Choice when finished

22 Routines (Students know what to do, clear instructions, little wandering)
a. E32
   i. 5.1 = Students know what to do
b. E33
   i. 1.1 = Child wandering
   ii. 5.1 = Students know what to do, clear instructions, little wandering
c. E34
   i. 5.4 = Students know what to do, clear instructions

23 Transitions (Brief, explicit follow-through, learning opportunities within)
a. E8
   i. 1.3 = Long transition
b. E32
   i. Frequent, long transitions
c. E33
   i. 1.1 = Long transitions
   ii. 1.3 = Lack of follow-through
   iii. 1.4 = Long transition
   iv. 3.3 = Adequate transition
   v. 5.1 = Good transition
   vi. 7.1 = Brief transition

24 Preparation (Materials ready and accessible, knows lessons)
a. E33
   i. 1.2 = Lack of preparation
   ii. 3.2 = Sometimes prepared
   iii. 5.2 = Almost always prepared
25 **Effective Facilitation** (Teacher involvement, effective questioning, expanding children’s involvement)
   a. E13
      i. 7.1 = Effective questioning
   b. E23
      i. 7.2 = Effective questioning
   c. E24
      i. 7.2 = Effective questioning
   d. E27
      i. 7.2 = Expanding children’s involvement

26 **Variety of Modalities and Materials** (Range of auditory, visual, and movement opportunities, interesting and creative materials, hands-on opportunities)
   a. E14
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Some variety of materials
      iii. 5.1 = Variety of materials
      iv. 7.3 = Variety of materials
      v. 7.4 = Variety of materials
   b. E16
      i. 3.1 = Some variety of materials, some variety of modalities
      ii. 5.1 = Variety of materials, variety of modalities
      iii. 7.4 = Variety of materials, variety of modalities
   c. E17
      i. 3.4 = Variety of materials
      ii. 5.1 = Variety of materials
   d. E18
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Some variety of materials
      iii. 5.1 = Variety of materials
      iv. 7.1 = Variety of materials
   e. E19
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Variety of materials
      iii. 5.1 = Variety of materials
      iv. 5.3 = Variety of materials; movement opportunity
   f. E20
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Some variety of materials
      iii. 5.1 = Variety of materials
      iv. 7.1 = Variety of materials
   g. E21
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Some variety of materials
      iii. 5.1 = Variety of materials
   h. E22
      i. 1.1 = Lack of variety of materials
      ii. 3.1 = Some variety of materials
      iii. 3.3 = Variety of materials
iv. 5.1 = Variety of materials
v. 7.1 = Interesting and creative materials
vi. 7.2 = Interesting and creative materials
i. E23
   i. 1.1 = Lack of variety of materials
   ii. 3.1 = Some variety of materials
   iii. 5.1 = Variety of materials
j. E25
   i. 1.1 = Lack of variety of materials
   ii. 3.1 = Some variety of materials
   iii. 3.2 = Some variety of materials
   iv. 5.1 = Variety of materials
   v. 7.1 = Variety of materials
k. E27
   i. 5.3 = Variety of materials
   ii. 7.1 = Variety of materials, movement opportunity

27 **Student Interest** (Active participation, listening, focused attention)
   a. E14
      i. 3.3 = Listening, focused attention
      ii. 5.3 = Focused attention, active participation
   b. E23
      i. 3.3 = Focused attention, active participation
   c. E27
      i. 5.1 = Active participation
      ii. 7.1 = Active participation
   d. E35
      i. 1.3 = Lack of active participation
      ii. 3.3 = Some active participation
      iii. 7.1 = Active participation

28 **Clarity of Learning Objectives** (Advanced organizers, summaries, reorientation statements)
   a. None found

29 **Analysis and Reasoning** (Why and/or how questions, problem solving, prediction/experimentation, classification/comparison, evaluation)
   a. E23
      i. 7.2 = Why and/or how questions, prediction/experimentation
   b. E24
      i. 7.2 = Why and/or how questions
   c. E27
      i. 5.1 = Problem solving

30 **Creating** (Brainstorming, planning, producing)
   a. E18
      i. 1.2 = Creativity not encouraged
      ii. 3.2 = Creativity allowed
      iii. 5.2 = Creativity allowed
b. E27
   i. 7.1 = Creativity encouraged

c. E29
   i. 1.2 = Creativity not encouraged
   ii. 3.2 = Some creativity allowed
   iii. 5.1 = Creativity allowed
   iv. 7.1 = Creativity allowed

31 Integration (Connect concepts, integrates with previous knowledge)
   a. E20
      i. 7.3 = Connect concepts
   b. E21
      i. 7.2 = Connect concepts
   c. E24
      i. 3.2 = Connect concepts
      ii. 5.2 = Connect concepts
      iii. 7.2 = Connect concepts
   d. E27
      i. 7.2 = Connect concepts, integrates with previous knowledge

32 Connection to the Real World (Real-world applications, related to students’ lives)
   a. E12
      i. 1.2 = Not related to students’ lives
      ii. 1.3 = Not related to students’ lives
      iii. 3.1 = Related to students’ lives
      iv. 3.2 = Related to students’ lives
      v. 3.3 = Related to students’ lives
      vi. 5.3 = Related to students’ lives
   b. E16
      i. 1.3 = Not related to students’ lives
      ii. 5.2 = Related to students’ lives
   c. E18
      i. 7.2 = Related to students’ lives
   d. E21
      i. 7.2 = Related to students’ lives
   e. E22
      i. 7.2 = Related to students’ lives
   f. E23
      i. 7.1 = Related to students’ lives
   g. E24
      i. 1.1 = Not related to students’ lives
      ii. 3.1 = Sometimes related to students’ lives
      iii. 3.3 = Related to students’ lives
      iv. 5.1 = Related to students’ lives
      v. 7.1 = Related to students’ lives
      vi. 7.3 = Related to students’ lives
   h. E34
      i. 7.1 = Related to students’ lives
i. E35
   i. 5.3 = Related to students’ lives

33 **Scaffolding** (Hints, assistance)
   a. E10
      i. 5.1 = Assistance
   b. E12
      i. 5.2 = Builds on existing knowledge to explain unfamiliar words
   c. E17
      i. 7.3 = Builds on existing knowledge to explain unfamiliar words and concepts

34 **Feedback Loops** (Back-and-forth exchanges, persistence by teacher, follow-up questions)
   a. None found

35 **Prompting thought processes** (Asks students to explain thinking, queries responses and actions)
   a. E24
      i. 7.2 = Asks student to explain thinking

36 **Providing information** (Expansion, clarifications, specific feedback)
   a. None found

37 **Encouragement and Affirmation** (Recognition, reinforcement, student persistence)
   a. E9
      i. 1.3 = Inattention/Discouragement
      ii. 5.3 = Encouragement
   b. E10
      i. 1.1 = Inattention/Discouragement
      ii. 3.3 = Encouragement
   c. E13
      i. 3.5 = Encouragement
   d. E19
      i. 5.4 = Encouragement
      ii. 7.3 = Encouragement
   e. E20
      i. 3.4 = Recognition and reinforcement
      ii. 5.5 = Recognition and reinforcement
   f. E21
      i. 5.3 = Encouragement

38 **Frequent Conversations** (Back-and-forth exchanges, contingent responding, peer conversations)
   a. E5
      i. 1.3 = No conversation/restriction of conversation
      ii. 7.2 = Encourages conversation
   b. E8
      i. 7.2 = Many conversations present
   c. E13
      i. 1.2 = No conversation/restriction of conversation
      ii. 1.3 = Little to no back-and-forth or contingent responding
iii. 1.5 = No conversation/restriction of conversation
iv. 3.3 = Some back-and-forth or contingent responding
v. 5.2 = Frequent back-and-forth or contingent responding
vi. 5.3 = Back-and-forth, contingent responding
vii. 5.4 = Assisted peer conversations
viii. 7.1 = Many conversations present
ix. 7.2 = Many conversations present
d. E20
   i. 5.3 = Many conversations present, Back-and-forth, contingent responding
e. E21
   i. 5.3 = Many conversations present, Back-and-forth, contingent responding
f. E24
   i. 5.2 = Many conversations present

39 **Open-Ended Questions** (Questions require more than a one-word response, students respond)
   a. E13
      i. 1.1 = Rote response questions often used
      ii. 3.1 = Some rote response questions used
      iii. 7.1 = Open-ended questions frequently used
   b. E18
      i. 5.3 = Open-ended questions frequently used
c. E20
   i. 5.3 = Open-ended questions used
d. D23
   i. 7.2 = Open-ended questions used
e. D24
   i. 7.2 = Open-ended questions used

40 **Repetition and Extension** (Repeats, extends/elaborates): None found

41 **Self- and Parallel Talk** (Maps own actions with language, maps student action with language)
   a. E12
      i. 3.2 = Maps student action with language
   b. E32
      i. 7.1 = Maps student action with language

42 **Advanced Language** ( Variety of words, connected to familiar words and/or ideas)
   a. E12
      i. 1.1 = Simple/restricted word variety
      ii. 3.2 = Some connection to familiar words and/or ideas
      iii. 5.2 = Some connection to familiar words and/or ideas
      iv. 7.1 = Variety of words
      v. 7.2 = Variety of words
      vi. 7.3 = Connection to familiar words and/or ideas
   b. E17
      i. 7.3 = Connection to familiar words and/or ideas
c. E34
   i. 7.2 = Variety of words