

COR

Child Observation Record (COR)

Information for Decision Makers



High/Scope Educational Research Foundation



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An Introduction to the Child Observation Record (COR) Assessment System

Educators and caregivers of young children need good measures of child development, because effective assessment informs teachers about children's developmental progress and their response to teaching and caregiving practices. Good measures of child development can help parents and the taxpaying public evaluate whether their investment in early childhood programs is justified. In addition, such measures help to define basic goals for the care and education of young children because they map out significant dimensions of child development for everyone concerned.

High/Scope's COR child assessment system grows from this vision of effective, meaningful assessment for young children. The COR system consists of two instruments, the Preschool Child Observation Record (COR), and the Child Observation Record (COR) for Infants and Toddlers. Together these two measures provide comprehensive, continuous developmental assessment for children from birth to age 6 years. The COR may be used in any developmentally oriented program, including but not limited to those using the High/Scope Curriculum and approach.

To provide a useful and accurate picture of children's development and abilities, a high-quality assessment instrument must have four important components. It should be:

- developmentally appropriate
- reliable
- valid
- user-friendly

Both COR instruments meet these requirements. They are developmentally appropriate both in process, because they are based on observations that occur during the course of a normal day, and in breadth of content, because they look beyond physical growth and language acquisition to all aspects of young children's development. The Infant-Toddler and Preschool CORs are reliable and valid; the research supporting this is summarized in Appendices A and B. Finally, both measures are user-friendly. It is not necessary to bring in an outsider to administer them; nor is it necessary to disrupt any part of the program's routine.

What Is the COR and How Does COR Assessment Work?

COR assessment is based on six child development **categories** that represent broad domains of child development. For the Preschool COR,

these categories are *initiative; social relations; creative representation; movement and music; language and literacy; and mathematics and science*. The Infant-Toddler COR has a parallel set of six categories: *sense of self; social relations; creative representation; movement; communication and language; and exploration and early logic*. Within each category, children are assessed on three to eight COR **items** that describe developmentally important behaviors. (The Preschool COR has 32 items, the Infant-Toddler COR has 28). Each item has five **levels** that indicate a typical developmental sequence for that behavior, enabling COR users to assign precise ratings to their observations of children.

To carry out the assessment, teachers or caregivers spend a few minutes each day writing brief notes (called “anecdotes”) that describe significant episodes of young children’s behavior. They record their notes on printed forms or in computer files, and then classify and rate them according to the COR categories, items, and levels. For example, after witnessing 4-year-old Althea’s play with a pretend rocketship, a preschool teacher might jot down a few notes and later expand these into the following anecdote:

2/15 At work time in the block area, Althea put all the large wooden blocks side by side on the floor, then put three chairs on top of the blocks, got a pair of goggles and a steering wheel, and said, “Cal and Jolene, get on! This rocket ship is taking off fast and it’s going to Hawaii.”

This item would be considered a level 4 (*Child makes a model with three or more basic parts*) under Preschool COR item *I. Making and building models (Creative representation category)*. This item might also be classified and rated in other developmental categories as well (for example, *language and literacy*).

COR anecdotes like this, gathered on a child over time and systematically rated according to the COR framework, are the basic units of information that are compiled and analyzed to provide a comprehensive portrait of each child’s developmental gains and of the progress of the group as a whole. Using COR forms and software, a variety of reports may be generated from this information.

About the Preschool COR

The Preschool Child Observation Record (COR) made its debut in 1992, with a second edition published in 2003. High/Scope’s development of an observation-based child assessment instrument had its roots in the early childhood community’s desire for an authentic assessment that could be used in any developmentally appropriate early childhood setting, including preschools, Head Start and Early Head Start programs, prekindergarten classrooms, day care centers, and family child care homes. Many early childhood educators needed an assessment instrument that could be used as part of the child’s daily routine, without removing the child from the classroom as is done with most test-style instruments. Educators also wanted a broad instrument that looked at all the key areas of growth nurtured in high-quality programs for young children, in contrast to the available instruments, which often were narrowly focused on a few areas or were screening instruments designed mainly to identify problems and deficits.

The Preschool Child Observation Record is designed as a tool for such comprehensive, curriculum-linked assessment in early childhood programs. It includes sections assessing the foundations of language, literacy, mathe-

mathematics, and science and a teacher guide that provides ideas for classroom activities that are directly tied to COR items. Using these and other COR resources, program staff can assess children's progress comprehensively and use the resulting information both to improve their program and to enhance the quality of the information in the reports they provide to others.

About the Infant-Toddler COR

Today, the significant increase in the number of infants and toddlers who are enrolled in child care highlights the critical need for all those concerned about the quality of care to understand the importance of looking systematically at all areas of each child's development. Every day, countless opportu-

Preschool COR Categories



Initiative



Social Relations



Creative Representation



Movement and Music



Language and Literacy



Mathematics and Science

nities for interactions that might add rich and varied details to the adults' understanding of individual children are overlooked by staff in infant and toddler settings. This happens in part because staff are not trained to recognize the complexity of child development and in part because they do not have assess-

ment tools that encourage thoughtful, wide-ranging observations. The Child Observation Record for Infants and Toddlers is an observational instrument that can provide well-rounded, systematic assessment in programs serving children from the ages of 6 weeks to 3 years.

Infant-Toddler COR Categories



Sense of Self



Social Relations



Creative Representation



Movement



Exploration and Early Logic



Communication and Language

The Advantages of COR Assessment

Here are a few of the many advantages of using the COR in infant-toddler and preschool programs:

The process of gathering data for completing a COR assessment generally takes place over a period of weeks or months and requires no change in the children’s daily routine. This contrasts with high stakes, test-style assessments conducted at specific times in artificial situations established for the benefit of the assessment.

The COR’s more authentic approach to assessment reflects an assumption that children demonstrate an amazing capacity to learn new skills within a relatively brief period of time. Thus, teachers or caregivers are best able to support a child’s growing repertoire of actions and ideas by focusing on what the child is doing at the moment instead of looking for and commenting on what he or she is not yet able to do. This kind of assessment asks only that program staff actively observe a child’s behaviors and activities as they go through the daily routine. By “actively observe,” we mean that the teacher makes it a habit to interact with children and observe and record notes about their activities and behaviors throughout the entire day.

The COR facilitates the planning process. As teachers or caregivers sit down to plan with the other classroom or center staff, we recommend they ask themselves three questions:

- What did we see children doing today?
- What do their actions tell us about them?
- How can we provide materials and interact with children to support their play and learning tomorrow?

These questions prompt a teaching team to examine children’s actions, interpret them in terms of child development, and plan follow-up support strategies.

The *What’s Next* teacher/caregiver guides that come with the Preschool and Infant-Toddler COR Kits provide specific teaching and caregiving suggestions directly tied to COR observations, allowing a seamless transition between assessing children and planning experiences to support their development. This assessment/planning process helps adults see children’s progress over time. Because the COR is used as a planning framework, they will be able to plan how to support the children’s development in a variety of areas, not just one or two.

The use of observation-based assessment instruments such as the COR helps to professionalize early childhood teachers and caregivers. Consistent use of the COR to evaluate and report on children’s development not only educates the teachers or caregivers but also helps others who have contact with early childhood programs to understand that working with young children is an important professional role. By highlighting the richness and complexity of young children’s development, observational assessment underscores the complexity and crucial importance of the caregiver or preschool teacher’s job.

The COR offers an especially effective way to gain specific information on the culture of each child in multicultural, multilingual centers, particularly in the case of children who do not yet communicate well in English. We encourage teachers or caregivers with English as a Second Language (ESL) children in their rooms to use COR assessment not only because of its value in gathering culturally specific information but also because it

focuses on what children **can** do, not on what they cannot do. By contrast, using a diagnostic test when ESL children are just adjusting to an English-speaking environment can result in a child being flagged as having a problem when there isn't one. Since COR observations take place over a longer period of time and focus on a broad range of developmental achievements, children's strengths are more likely to be noted. An added benefit of this type of assessment for ESL children is that their parents may also participate in the assessment process; sharing stories about their child is a task that few parents can resist, and early childhood staff often find that encouraging parent and family members to participate in this way promotes their involvement in other aspects of the program as well.

How Teachers and Caregivers Can Use Data From the COR

The COR can be used in the following ways by teachers or caregivers:

- **Assessing growth both for individuals and children grouped in various ways**—COR results can be analyzed to assess development for individual children, for the group as a whole, for particular age groups, and so forth.
- **Evaluating the curriculum**—The COR helps teachers and caregivers spot gaps in their curriculum. Because the COR looks at all aspects of development, it enables early childhood staff to pinpoint particular categories they may have overlooked in their planning.
- **Documenting changes over time**—We all are familiar with the astonishing rate at which young children grow. The COR documents these changes as they occur

over time—ensuring that neither program staff nor parents miss anything crucial!

- **Self-education about child development**—The COR is an excellent source of child development information and may help new or less experienced teaching and caregiving staff understand that taking care of young children involves considerably more than just “baby sitting.”
- **Evaluating the room group or program as a whole**—The COR is an important tool for reflecting on a single room's effectiveness or an entire program's progress and successes in fully meeting the developmental needs of the children served.

Using Results From the COR With Parents

Parents know their child better than anyone else, and they have daily opportunities to observe his or her development at home and in other settings outside the care setting. Thus, when teachers or caregivers seek to assess a child's development with the COR, they need parents' guidance and support. Program staff are the experts in principles of children's care and development; parents are the experts on their child. Working together, they are a winning combination.

When parents become familiar with the COR, they are better able to understand the developmental profiles teachers or caregivers complete for their children, and they are more likely to contribute child observations of their own to supplement those made by program staff. Program staff can encourage parents to understand and use the COR by sharing daily anecdotes. For example, a teacher might write

an anecdote on a note card and slip it in the child's cubby for the parent to take home. These "anecdotes to go" encourage parents to note and share their own child observations with teachers. Such exchanges help to maintain open communication, encourage parent involvement, and further cement the bond of trust between parents and program staff that is essential to children's well-being.

The COR also allows program staff to prepare reports for parents that summarize the observations and developmental material collected; these reports can then serve as the foundation for conferences with parents. The Family Report form in the Preschool COR Kit and the Observations About Your Child form in the Infant-Toddler COR Kit can be used for these reports (see page 21 for a sample page from a completed Observation About Your Child form). By looking at the developmental summaries in these family reports together with the developmental charts given in the *Parent Guide* that comes with either instrument, parents can see where their children are in a particular learning area and where they are heading.

Using Results From the Preschool COR in Head Start Programs

Today Head Start uses the Head Start Child Outcomes Framework as a guide in fulfilling their child assessment and self-assessment requirements. The Preschool COR categories and items align very closely with the Head Start Child Outcomes Framework. However, the issue remains of aggregating the extensive data COR assessment produces into a report that Head Start can use. High/Scope's CD-ROM and Web versions of the Preschool COR automatically translate COR results into statistics,

charts, and graphs that meet Head Start's reporting requirements. Users of the paper-and-pencil COR may refer to the High/Scope Web site (www.highscope.org) for more information on aligning COR results with Head Start Outcomes.

Using Results From the COR with Other Potential Audiences

In addition to teachers or caregivers, parents, and Head Start staff, the following other audiences may find a variety of uses for COR results:

- **Other program staff**—Staff who are occasional participants in the program (for example, therapists, special educators, and trainers) may use the COR when they attend daily planning or in-service training sessions as a way of assessing children's individual or group progress and of identifying support strategies or areas of the program to target for improvement efforts.
- **Administrators**—Administrators may use COR results to document program changes over time or to familiarize themselves with the development of children in different rooms.
- **Funding sources**—Funding agencies, boards of directors, or licensing authorities may want to know how children in a particular program are developing as a factor to consider in allocating program funds. The COR is a concise and objective way to document young children's development over time.
- **Program evaluators and researchers**—Because the COR is a systematic evaluation tool, evaluators may be interested in its assessment of individual



or group development over time. The COR may be useful to those studying child development as well as to those evaluating programs and curriculum approaches in general.

How the Preschool COR Relates to the Infant-Toddler COR

The Infant-Toddler and the Preschool COR address the same dimensions of development and have the same general format. As mentioned earlier, the six Preschool COR Categories are roughly parallel to the six Infant-Toddler COR Categories, and 24 items in

the Infant-Toddler COR directly correspond to items in the Preschool COR. As a rule of thumb, the Preschool COR begins two levels higher than the infant-toddler instrument, so a score on any of the similar infant-toddler items may be computed by adding 2 to the score on the corresponding Preschool COR item. In other words, a 1 on the Preschool COR corresponds to a 3 on the Infant-Toddler COR. However, while this general rule for equating scores on the two instruments was used in the revision of the Preschool COR, the corresponding levels on the current versions of the two CORs have neither the same wordings nor even the same meanings.

COR Components

The Contents of the Infant-Toddler and Preschool COR Kits

The following components of the paper-and-pencil Infant-Toddler and Preschool COR Kits provide all the necessary materials for a year's assessment in an infant and toddler room of 12 children or a preschool class of up to 25 children. Each component of the Infant-Toddler COR has a corresponding component in the preschool version.

- **User Guide**—This manual explains the rationale for COR assessment, describes the validity and reliability studies for the instruments, and perhaps most important, explains how to use each component.
- **Observation Items**—This guide contains the actual COR assessment tool, plus explanatory material that describes and clarifies each of the COR categories, items, and levels. A sample page from the Preschool COR *Observation Items* guide is given on p. 22.
- **What's Next**—This manual is designed to help teachers or caregivers put their COR-based child observations to work as they plan ongoing strategies, experiences, and activities to support children's development. A sample page from the Infant-Toddler *What's Next* manual is given on p. 23.
- **Child Anecdotes booklet**—This booklet of forms is designed for recording a child's *anecdotes*, brief notes on developmentally important behaviors. The form is designed to prompt users to date and score each anecdote while recording it. A sample filled-out page from the Preschool COR *Child Anecdotes* booklet is given on p. 20.
- **Child Information and Developmental Summary**—This form provides one convenient location for summarizing and storing significant information about each child.
- **Group Summary (Infant-Toddler COR)/Class Summary (Preschool COR)**—This form allows users to summarize COR results for their whole group, enabling users to document growth for an entire group over time.
- **Observations About Your Child (Infant-Toddler COR)/Family Report (Preschool COR)**—This form is used to create reports for parents about their child that can be discussed at parent conferences or home visits. A sample page from the Infant-Toddler Observa-

tions About Your Child form as given on p. 21.

- **Parent Guide**—This booklet explains what the COR is and invites parents to participate in the assessment process by recording anecdotes based on the COR. The *Guide* is in both Spanish and English.
- **COR Poster**—This wall-sized poster lists COR categories and items.
- **Complete Desk Poster**—This is a desk-sized, laminated poster that folds into a tent shape for easy use. The poster shows the key elements of the COR system.

The above COR Kit components are also available separately.

COR Computer Applications

CD-ROM versions. High/Scope offers CD-ROM versions of both the Infant-Toddler and Preschool COR that provide another way

to use COR assessment. These programs enable users to record and store their observations of children's development on their computers and to rapidly generate COR scores and reports based on this information. The software automatically compiles and analyzes Preschool COR ratings both for individual children and for the group and presents these findings in both graphic and narrative forms. The software makes it easy for users to update and change pieces of information they have recorded in COR computer files. When a new piece of information is available or a modification is needed in the information already stored in the program, users need only



CD-ROM versions of the COR

Contents of the Infant-Toddler COR Kit



*Observations Items** manual, 3
*User Guide**, 1

*What's Next: Planning Strategies and Activities Around Infant-Toddler COR Observations**, 1

Anecdotes Forms booklet, 25

*Parent Guide**, 25

Group Summary form, 5

Child Information and Developmental Summary form, 25

Observations About Your Child form, 25

Infant-Toddler COR Poster*, 1

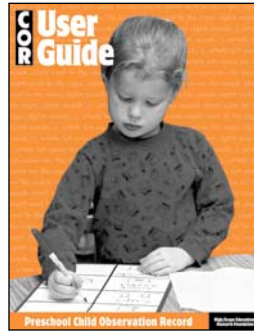
Complete Desk Poster*, 3

* This item is included along with the software in the Infant-Toddler COR for CD-ROM Kit

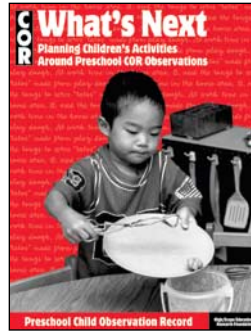
Contents of the Preschool COR Kit



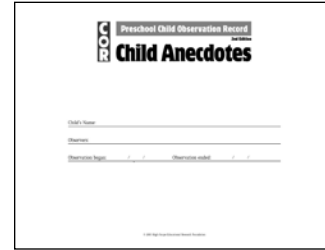
*Observations Items** manual, 2



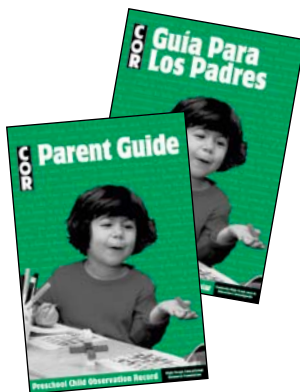
*User Guide**, 1



*What's Next: Planning Children's Activities Around Preschool COR Observations**, 1



Child Anecdotes booklet, 25



*Parent Guide**, 25

COR	Class Summary									
	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Class Summary form, 1

Child Information and Developmental Summary form, 25

Family Report form, 50

Preschool Child Observation Record

I. Initiative

- A. Making choices and plans
- B. Solving problems with materials
- C. Initiating play
- D. Taking care of personal needs

II. Social Relations

- E. Relating to adults
- F. Relating to other children
- G. Resolving interpersonal conflict
- H. Understanding and expressing feelings

III. Creative Representation

- I. Making and building models
- J. Drawing and painting pictures
- K. Pretending

IV. Movement and Music

- L. Moving in various ways
- M. Moving with objects
- N. Feeling and expressing steady beat
- O. Moving to music
- P. Singing

V. Language and Literacy

- Q. Listening to and understanding speech
- R. Using vocabulary
- S. Using complex patterns of speech
- T. Showing awareness of sounds in words
- U. Demonstrating knowledge about books
- V. Using letter names and sounds
- W. Reading
- X. Writing

VI. Mathematics and Science

- Y. Sorting objects
- Z. Identifying patterns
- AA. Comparing properties
- BB. Counting
- CC. Identifying position and direction
- DD. Identifying sequence, change, and causality
- EE. Identifying materials and properties
- FF. Identifying natural and living things

Preschool COR Poster*, 1

High/Scope Preschool Key Experiences

Preschool Child Observation Record

1. Initiative

2. Social Relations

3. Creative Representation

4. Movement and Music

5. Language and Literacy

6. Mathematics and Science

Complete Desk Poster*, 2

*This item is included along with the software in the Preschool COR for CD-ROM Kit



enter the information once, and the program automatically updates all relevant records, charts, graphs, and reports. The need for some of the printed COR components is eliminated for users of the CD-ROM versions of the COR.

Computer Assistant. This application expands the options for using the COR. The Infant-Toddler and Preschool COR Computer Assistants allow users to work with the COR on a handheld PDA. The CD-ROM version of either the Infant-Toddler or Preschool COR is required to run the corresponding version of the Computer Assistant, which may be used with any handheld unit employing Palm software.

OnlineCOR. Another option for using both the Infant-Toddler and the Preschool COR is to use it online through *OnlineCOR.net*. This Web-based COR streamlines the process of gathering, interpreting, and reporting information on children's development and provides families with a vehicle for participating in their child's assessment. Using this data, the site generates reports both on individual children and on class progress. Many of the reports generated in the OnlineCOR are available in both English and Spanish, including the Family Report. Here are some of the reports that may be created:

Tally Sheet — A summary of a child's COR scores for each time period

Growth Profile — Graphs that show a child's progress in each category, for each time period

Journal — An online record and communications tool for teachers or caregivers and families to share (its accessibility to families is one of OnlineCOR's special features)

Category Reports — Summaries of the child's skills, with corresponding activities

expressly designed to support a child's particular levels of development

Family Reports — Summary of a child's progress in key developmental areas for parents and other family members

OSEP Reports — Automatically generate reports for the Office of Special Education Programs (OSEP) to meet Federal reporting requirements and assist teachers and administrators in evaluating programs as well as reporting results

Head Start Outcomes Reporting — Special features are built-in to OnlineCOR to support Head Start staff:

- Generate reports at the class, site, or program level
- Display assessment results in terms of the six COR categories, as well as in terms of the eight Domains and 13 federally mandated Elements/Indicators of the Head Start Child Outcomes Framework
- Display growth from one period to another
- Analyze Head Start Outcomes results by key demographic data

OnlineCOR.net is the next generation of Web-based software products designed for teachers, administrators, and parents. In addition to the full range of available reports, OnlineCOR boasts other valuable benefits such as:

- New ways to aggregate data
- The ability to share child data with a specialist
- Customized data fields
- Access to a built-in Resource Center

Those interested in OnlineCOR, or just in exploring the site are encouraged to visit at *OnlineCOR.net* and take the tour.

Frequently Asked Questions

Who should complete the COR?

The COR is most useful when filled out by the staff members most familiar with the children—the teachers or caregivers. Parents are encouraged to contribute observations they have recorded as well. If the COR is to be used in research, outside observers may be trained to make observations and to complete the COR.

Is training necessary for COR users?

To assist those who are new to COR assessment in completing the COR accurately and developing effective assessment strategies, we recommend High/Scope COR training. High/Scope offers several COR training options, including workshops at High/Scope headquarters or on site and an online workshop. See p. 24 for more information on COR training.

When should you complete the COR?

Classroom or center staff should complete the COR two or three times a program year—for example, as the year begins, halfway through, and as the year ends. The timing for completing the COR depends on the specific evaluation

concerns of the user. The COR may be used as often as you wish to document children's developmental status and progress. Head Start programs, for example, are required to complete their assessment three times during their program year.

Where do staff members get the information needed to complete the COR?

Information for COR ratings comes from the daily, ongoing anecdotal notes kept by teachers or caregivers and from items the child may have made or produced. We recommend that programs using the print version of the COR use the *Child Anecdotes* booklet as an organized way to maintain records of child observations, but programs may also develop their own forms for note taking. The CD-ROM and Web versions of the COR have a built-in system for managing anecdotes.

How many anecdotes do teachers or caregivers have to write each day?

There is no minimum or maximum number of anecdotes staff members should collect each

day. It is not realistic to attempt to write notes, in every category, on every child, every day. Recording anecdotes for some children every day is a realistic goal, however. Staff teams may also consider focusing on a particular COR category or an area of the setting each day.

Can an anecdote or child work sample apply to more than one COR item?

Yes! Teachers or caregivers often find that certain anecdotes or portfolio items can be used as supporting evidence for two or more COR items. These anecdotes may be cross-referenced on the anecdote forms or in the computer files.

Writing and scoring anecdotes seems like a lot of work. Are there any shortcuts?

The more teachers or caregivers use the COR, the easier the process will become. If they invest some time in the beginning becoming familiar with the different categories and items, they will find that the task no longer seems overwhelming. Each team must be creative and find out what works best for them.

How much time should staff members expect to spend every day to do the COR?

Throughout the day, teachers or caregivers should be jotting down very brief notes about what they see children doing. Altogether, this should take only a few minutes. The process of transforming rough notes to formal notes (entered in the *Child Anecdotes* booklet, in the

computer, online, or in the file system the program has set up) can be accomplished in 20 to 45 minutes daily. At the same time, however, teachers or caregivers should be planning or modifying the next day's activities based on what they have observed. For example, if they have noted that a child or several children were very involved with filling and emptying containers of water that day, they might decide to add additional materials for filling and emptying (for example, corks, beans, plastic peanuts, oats, and various containers). The time staff members spend on COR-related tasks gradually becomes a natural part of observing, interacting with, and planning for children. As they become more experienced with COR assessment, staff members eventually see COR note taking and planning as work that enhances the time they spend with children rather than as an extra job that takes them away from more important things.

Does the COR help with lesson plans?

The COR instruments are designed to represent a comprehensive cross-section of the activities we can expect children to engage in as they develop from infancy to age 6. Observing for these developmentally normal activities will produce a comprehensive portrait of each child's abilities. If, however, teachers or caregivers find they have gaps in the COR notes and materials they have been assembling, they can use this knowledge to select materials that are likely to provide experiences in that category or item. Regular use of the COR allows staff members to make plans related to the children's interests they observed that day rather than to an arbitrarily

selected topic. The materials they select will provide an opportunity for the children to try out abilities and experiences they have not observed up to that point.

Will all children show growth in all areas?

Some children will show significant growth in certain COR categories while seeming to stand still in others. Other children will show a relatively steady growth across most categories. Some children are ready to read as early as 3 or 4 years, while others are not ready until first or second grade. These kinds of differences also occur in other areas of development such as movement, mathematics, and social abilities. These are natural developmental differences you may expect with any group of children.

What is the meaning of the item levels? For example, should all 3-year-olds be scoring at level 3?

There is no correlation between level 3 and age 3 or between level 4 and age 4. The five levels that follow each item represent stages of development. The behaviors associated with each level go from simple (1), to more complex (5). Although the item levels are not intended to be associated with age, there certainly will be times when a 3-year-old is assigned a level 3.

Are there age norms for the COR?

We recommend against using age norms for infants, toddlers, or preschool children, and we do not provide them for the COR. It is all

too easy to misuse age-related information; age norms, such as the percentage of children scoring at a particular level, can create narrow expectations for children, particularly when norms are used with young children. The pace of development varies greatly from individual to individual, so that children's status on certain traits and abilities at particular ages is not very predictive of their later status on the same traits and abilities. It is usually a mistake to place children in particular programs based on age-related scores, because their scores on a particular ability relative to their peers' could shift in the next month, or even the next week.

Why don't some anecdotes fit into any of the COR categories?

Teachers or caregivers may find that they collect some anecdotes that don't happen to fit with any of the items on the Infant-Toddler or Preschool COR but that do tell them a lot about a child's understanding of the world, his or her interests, and the best ways to support that child. This does not mean that the information is any less valuable, just that it doesn't fit into the COR.

What about numerical scores? Since parents grew up with them and are accustomed to seeing them on their older children's assessments, parents often expect to see a score of some kind—even for a preschooler!

Space is not provided on the Family Report form for COR levels because the numbers do not convey useful information for parents. We



believe it is more useful to keep the information we share with parents anecdotal, because of the detailed pictures these observations provide. The use of actual information about the individual child is something that parents grow to understand and value.

Does the Preschool COR address areas like phonemic awareness and complex vocabulary?

Yes! The *language and literacy* category has eight items, covering such areas as using vocabulary, using complex patterns of speech, showing awareness of sounds in words, and using letter names and sounds.

Can the Preschool COR be used in Head Start? How does the COR align with the Head Start Outcomes Framework?

As described earlier, the Preschool COR was developed with Head Start requirements in mind and it is highly compatible with Head Start's approach to child development and assessment. The COR categories, items, and levels align with the Domains, Elements, and Indicators of the Head Start Child Outcomes Framework. The CD-ROM and Web versions of the COR automatically translate COR data into Head Start Outcomes reports. Head Start programs can thus use the COR to expedite their assessment and reporting process.

Can COR assessment be used for children with special needs?

The Preschool and Infant-Toddler CORs are based on developmental levels, not chronolog-

ical age. Using a combination of the Infant-Toddler and Preschool COR, you can measure the full developmental range of a child with special needs. Through data analysis, based on a nationally representative sample of children, High/Scope has developed a scientifically based way to translate and align COR with the Office of Special Education Programs (OSEP) scores and required OSEP reports. This reporting system, *OSEP Reports for COR*, is available on a CD-ROM to be compatible with the Manual or CD-ROM versions of COR. OnlineCOR subscribers will have OSEP reports built-in. OSEP reports for COR translates COR scores into the ECO 7-Point scale score and creates the reports you need to be in compliance.

Can I use the COR to assist me in developing an IEP (Individualized Educational Plan)?

As special education programs increasingly move toward forming objectives that reflect developmentally appropriate practices, they find that the traditional methods for assessing and writing IEPs for the children in their programs are unsatisfactory. This may be solved by organizing procedures for child observation, assessment, and IEP development around the COR. Teachers who have tried this with the COR have reported positive results. These teachers report that IEPs look a bit different. They not only include such traditional IEP areas as gross- and fine-motor development, language, concepts, self-help, and socio-emotional development, but also highlight such nontraditional areas as problem-solving, expressing emotion, and expressing initiative.



Can the COR be used as a screening instrument to determine placement?

The COR is not designed to screen children for problems and deficits. Rather, it is an observational assessment instrument that documents children's growth over time based on evidence in the form of anecdotes and child creations. By contrast, screening instruments do not use anecdotes or work samples as evidence but instead rely on data collected as children perform a set of standardized tasks. While COR data is collected and scored over a period of months, screening instruments are typically adminis-

tered one time, with the results often used to make high-stakes decisions.

Can the COR be used to evaluate early childhood staff?

The COR is not designed to be used for teacher or caregiver evaluation. As mentioned above, the COR is primarily intended to document children's growth over time. However, the Preschool COR can be used, along with High/Scope's Preschool Program Quality Assessment (PQA), as part of a teacher evaluation. An infant-toddler version of the PQA is under development.

Samples

Sample Page From the Preschool COR Child Anecdotes Booklet

Language and Literacy	Language and Literacy	Language and Literacy
<p>/ 6/16 (Circle one) Item → Q <input checked="" type="radio"/> R S T U V W X Date <u>SG</u> (Circle one) Level → 1 2 <input checked="" type="radio"/> 4 5 Observer _____</p> <p>At work time in the house area, Asia used an empty cake mix box, a cake pan, and a mixer. She told Sue [teacher] "Hey, look, I'm using the mixer to make a cake for my mom!"</p>	<p>/ 6/20 (Circle one) Item → <input checked="" type="radio"/> R S T U V W X Date <u>CB</u> (Circle one) Level → 1 <input checked="" type="radio"/> 2 3 4 5 Observer _____</p> <p>At greeting time, Asia listened to Paul's dad read "The Very Hungry Caterpillar." When Paul's dad read "and on Tuesday he ate through two _____," Asia said, "Pears!"</p>	<p>/ 7/1 (Circle one) Item → Q R S T <input checked="" type="radio"/> U V W X Date <u>SG</u> (Circle one) Level → 1 <input checked="" type="radio"/> 2 3 4 5 Observer _____</p> <p>During work time in the book area, Asia sat on the beanbag chair and looked at all the pictures in "Flower Garden," turning the pages from right to left.</p>
<p>/ 7/13 (Circle one) Item → Q R S <input checked="" type="radio"/> T U V W X Date <u>CB</u> (Circle one) Level → 1 2 <input checked="" type="radio"/> 3 4 5 Observer _____</p> <p>At small-group time, working with the finger paints, Asia said, "The paint feels icky sticky."</p>	<p>/ / / (Circle one) Item → Q R S T U V W X Date _____ (Circle one) Level → 1 2 3 4 5 Observer _____</p>	<p>/ / / (Circle one) Item → Q R S T U V W X Date _____ (Circle one) Level → 1 2 3 4 5 Observer _____</p>

Letter Recognition Record: Circle the letters child identifies and names (Item V).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Sample Page From the Infant-Toddler COR Observations About Your Child Form

I. Sense of Self

Developmental summary:

Kyle initiates physical contact with a person. He recognizes his own body parts. Kyle repeats an action to make something happen again and he feeds himself finger foods.

Supporting anecdotes:

08/17 During choice time Kyle noticed his caregiver walk into the room. He crawled over, held out his arms, and smiled.

09/26 During choice time Kyle scooted over to the shelves and pulled down a pop-up toy. He banged his hand on it until the clown popped up. He looked at me [Melody]. I pushed the clown down and he again banged his hand until the clown popped up again. He repeated this sequence for about 5 minutes.

Parent observations:

Mom said that Kyle sometimes drinks from a cup at home, though he still wants his bottle at bedtime.

II. Social Relations

Developmental summary:

Kyle seeks physical contact with his primary caregiver and in her presence he plays peekaboo with an unfamiliar adult. He babbles or gestures to another child. Kyle uses physical contact to express an emotion. He responds to another's distress by seeking comfort for self. Kyle seeks the company of another child and plays alongside.

Supporting anecdotes:

09/20 As they were getting ready to leave, Kyle played peekaboo with Hoodo's mom.

10/14 During outside time Joanie fell down and started crying. Kyle saw it happen and went over and patted her on the back.

8/31 After finishing his snack, Kyle went over to the block area, where Rosalva was stacking the cardboard blocks. Kyle sat close by with some of the smaller wooden blocks and played with them.

Parent observations:

Mom said that she noticed that Kyle was becoming a bit more comfortable around strangers. In the store he wouldn't turn away if someone looked at him. Sometimes he'd even smile! He also showed a real fascination with his older sister.

Sample Page From the Preschool COR Observation Items Guide

Initiative Social Relations **CREATIVE REPRESENTATION** Movement & Music Language & Literacy Mathematics & Science



I. Making and building models

- J. Drawing and painting pictures
- K. Pretending

ment of language and representation skills, preschoolers are beginning to put their feelings into words. Verbalizing feelings is an important step for young children because it helps them gain some control over their feelings and the actions these feelings set in motion. Children also begin to look at themselves with increased self-awareness.

Level 1. Child expresses an emotion.

Without using words, the child exhibits a positive or negative emotion, such as anger, happiness, sadness, grief, envy, awe, joy, or frustration.

- 3/28 Outside, digging in the sandbox, Nathan cries when Diana throws sand on him.
- 1/30 At greeting time, when singing the “Getting to Know You” song, Serena smiles and jumps up as the group sings her name.

Level 2. Child comforts another child.

The child offers comfort (patting, hugging, kissing, giving something to a child) to another child who is hurt or in distress.

- 2/15 At greeting time Cody hugs Blake when he cries after his mom leaves.
- 4/13 At work time in the house area, Earl brings Emily her blanket when she trips and cries.

Level 3. Child talks about an emotion.

The child uses words to express or describe an emotion. (“I’m mad at you!” “I’m happy you sat by me!” “Teacher, Molly is sad and crying.”) This level applies whether the child is talking about his or her own emotion or someone else’s.

- 10/21 At work time in the house area, Nolan tells Andrew, “I’m mad—don’t take my truck!”
- 12/16 When Mariah’s grandma arrives to pick her up at the end of the day, Mariah hugs her and says, “I’m so happy you came to get me!”
- 9/16 During snack, Willis turns to his friend Max and says, “Are you excited about coming over to my house?”

Level 4. Child represents an emotion through pretend play or art.

The child portrays an emotion while enacting a pre-

tend role or describing something he or she has made.

- 2/5 At work time in the house area, Timothy pretends to be sad because his pretend dog dies. He cries and rubs his eyes.
- 11/12 During work time Victoria describes her drawing to the teacher. She says, “This is me and I’m really happy!”

Level 5. Child identifies an emotion and gives a reason for it.

For this level to apply, the child must verbalize an emotion and then give a reason for it (“Sari is sad today because she misses her mommy”).

- 5/5 At greeting time Rachel tells Phakama, “Last night I heard a thunderstorm, and I cried because I was scared.”
- 3/13 At arrival Jameka tells the bus aide, “I’m happy because I’m going to Granddaddy’s Wal-Mart and then to the big school.”

Sample Page From the Infant-Toddler *What's Next* Guide

eat 'getti and sleep with me." "She ate spaghetti with you and slept with you in your bed!" you exclaim. Bethany says, "Uh huh!"

ITEM U Speaking

LEVEL U-1 Child makes cooing sounds.

These strategies will help you support children at level 1 as they begin making sounds and responding to others around them.

- Provide a quiet space and time during which you can watch for and hear a child's contented cooing. For example, as Theo wakes from his nap, he may coo at his favorite stuffed bear sitting next to him. Watch and enjoy his cooing. When it stops you might say, "You were cooing to your bear, Theo. Let's take your bear with you while I hold you in the rocking chair."
- Throughout the day, be attentive to how a child responds to you, to other children, and to objects around him. Talk with him, follow his gaze to see what he is looking at, and imitate his sounds and actions. This will encourage him to make different sounds to communicate different things. For example, during outside time while sitting in the swing, Hector may make squealing noises. You might imitate the noises and say, "You sound happy to be in the swing, Hector!"
- Interact with a child individually in a playful way, making sounds with your lips and voice. Feeding and diapering times offer good opportunities for this type of interaction. Give the child time to imitate you and continue to communicate to you through sounds. You might blow raspberries on Porter's belly while you change his diaper, or smack your lips together after he is done eating. Wait for his response, and repeat the sounds if he seems to enjoy them.

LEVEL U-2 Child babbles.

The following strategies will help you support children at level 2 as they begin to string together consonant and vowel sounds.

- Maintain an environment in which children's babbling can be heard and is valued as an important way of communicating.
- Throughout the day, as a child explores her environment, watch and listen for her babbling sounds. Imitate these sounds and wait for the child's response. If Faye says, "Ba, ba, ba, ba, ba," you might say, "Ba, ba, ba," back to her. To Jenna, who babbles while eating her banana, you might say, "Ya, ya, yum, you like that banana!"
- Be attentive to balancing "want something," task-oriented language you use with "want nothing," descriptive language. Examples of task-oriented language



COR Training

COR training, available through High/Scope, is recommended for teachers and caregivers using the COR for the first time and is the most desirable approach for getting an entire staff off to a good start with this assessment tool. High/Scope training provides in-depth information on the individual COR items, guided practice with anecdotal note taking and scoring, and exploration of observation strategies for teachers, caregivers, and parents. An added benefit of COR training is that it increases

staff members' knowledge of child development and enhances the quality of their teaching practices. Training options include workshops at High/Scope headquarters, on-site workshops, and online training.

For more information or to register for COR training, please visit the High/Scope Web site, www.highscope.org, e-mail us at training@highscope.org, call us at 734-485-2000, ext. 218, or fax us at 734-485-4467.

Appendix A: Preschool COR Development and Validation

Final Instrument Development

To examine the psychometric characteristics of the Preschool COR, Head Start teaching staff of the Equal Opportunity Commission of St. Clair County Children’s Services in Port Huron, Michigan, collected data from 160 children in spring 2002 and 233 children in fall 2002. After the spring study, COR project staff revised four items and made minor wording changes in seven other items to address the concerns raised, then used the new version in the fall study.¹ Findings from these studies of the revised COR are posted at the High/Scope Web site (<http://www.highscope.org>).

On the basis of findings from the first study in the spring, we decided to combine the four shorter categories that had only three to five items into two longer categories that have eight items each. We combined *Initiative* and *Social Relations*; we also combined *Creative Representation* and *Movement and Music*. As a result, for data aggregation and statistical purposes, the preschool COR has four categories of eight items each:

- *Initiative, Social Relations*
- *Creative Representation, Movement and Music*
- *Language and Literacy*
- *Mathematics and Science*

Item Statistics

Table 1 (on this page) presents the age distribution for the spring study and the fall study. For both studies, the age range was 3 years 0 months to 5 years 5 months, but, as expected, the children were older in the spring than in the fall, with an average age of 4 years 2 months in the fall study and 4 years 9 months in the spring study.

Table 1. Percentages of Children of Various Ages in the Two COR Studies

Age in Years and Months	First Study: Spring 2002	Second Study: Fall 2002
3-0–3-5	1.2	14.2
3-6–3-11	9.2	17.7
4-0–4-5	10.4	35.3
4-6–4-11	33.7	29.3
5-0–5-5	39.9	2.6

Note. Spring 2002 $N = 154$; fall 2002 $N = 230$

Tables 2 and 3 (on pages 27 and 28) present findings from the two studies for each COR category and item: the number of cases, mean score, standard deviation, and percentage scoring 1, 2, 3, 4, and 5. Table 2 presents statistics for the first study in spring 2002. Table 3 presents statistics for the second study in fall 2002. The tables are arranged in the order of actual occurrence, even though the order for the typical program year would be fall followed by spring. These children were not selected to be statistically representative of all children or even of all Head Start children. Nor are the children the same in both studies, so differences between the two sets of scores do not represent gains. With these caveats in mind, these scores do nonetheless provide some basis for comparison with the COR scores of other groups of children.

In the spring study, COR data were collected on 160 children, with data on all the items collected on 66 of them, 41% of the total sample. No one item had data for fewer than 71% of the children. By category, data on all the items were available on 87% of the children for *Initiative, Social Relations*; 84% for

Table 2. Spring COR Item Statistics

Item	Number of Cases	Mean	Standard Deviation	1	2	3	4	5
COR Total	66	3.47	0.57	5.5	13.7	27.0	37.8	15.9
Initiative, Social Relations	139	3.23	0.67	8.2	14.2	34.3	33.0	10.3
Making choices and plans	160	3.44	0.77	1.3	7.5	43.8	41.3	6.3
Solving problems with materials	152	2.92	1.10	10.5	23.7	38.2	18.4	9.2
Initiating play*	152	3.83	0.71	0.0	5.9	17.1	65.1	11.8
Taking care of personal needs	153	3.46	0.87	0.7	10.5	43.1	33.3	12.4
Relating to adults	152	3.38	1.04	7.9	3.3	46.7	27.0	15.1
Relating to other children	153	3.35	1.02	5.2	12.4	37.3	32.7	12.4
Resolving interpersonal conflict	147	2.79	1.27	18.4	23.8	32.7	10.9	14.3
Understanding and expressing feelings	155	2.66	1.37	27.1	27.1	6.5	31.6	7.7
Creative Representation, Movement and Music	134	3.37	0.63	4.9	17.1	32.3	27.6	18.1
Making and building models	153	3.01	0.96	6.5	22.2	38.6	29.4	3.3
Drawing and painting pictures	160	3.40	1.24	11.9	8.1	29.4	29.4	21.3
Pretending	150	3.33	0.97	5.3	10.0	40.7	34.7	9.3
Moving in various ways	152	3.83	1.14	1.3	12.5	28.9	16.4	40.8
Moving with objects*	160	4.38	0.76	0.0	3.8	5.6	40.0	50.6
Feeling and expressing steady beat*	150	2.59	0.80	2.7	48.0	40.7	4.7	4.0
Moving to music*	148	3.07	1.17	12.8	23.6	9.5	51.4	2.7
Singing	146	3.39	1.07	2.7	11.6	54.8	5.5	25.3
Language and Literacy	146	3.09	0.89	15.5	18.6	18.0	36.2	11.7
Listening to and understanding speech	154	2.90	1.33	26.6	7.1	22.1	37.7	6.5
Using vocabulary	152	2.85	1.20	14.5	31.6	13.2	36.2	4.6
Using complex patterns of speech	155	3.47	1.19	1.3	24.5	29.0	16.1	29.0
Showing awareness of sounds in words	145	2.77	1.35	24.1	24.8	8.3	35.2	7.6
Demonstrating knowledge about books	155	3.52	0.92	0.6	20.0	14.2	57.4	7.7
Using letter names and sounds	154	3.32	1.58	21.4	11.0	20.1	9.1	38.3
Reading	149	3.29	1.02	4.0	26.2	10.1	56.4	3.4
Writing	149	2.87	1.28	27.5	3.4	27.5	38.3	3.4
Mathematics and Science	81	3.15	0.83	10.0	20.4	26.1	31.3	12.2
Sorting objects	147	2.93	0.85	4.8	25.2	43.5	25.9	0.6
Identifying patterns	138	2.86	1.18	17.4	17.4	34.1	23.9	7.2
Comparing properties	149	3.07	1.40	18.8	19.5	16.8	26.2	18.8
Counting	153	3.73	1.01	2.0	15.0	11.1	51.6	20.3
Identifying position and direction	146	2.79	1.03	8.9	36.3	24.7	27.4	2.7
Identifying sequence, change, and causality	140	2.52	1.03	31.4	18.6	26.4	13.6	10.0
Identifying materials and properties	118	2.48	1.37	33.1	22.0	19.5	14.4	11.0
Identifying natural and living things	113	2.75	1.19	15.0	31.0	27.4	16.8	9.7

Note. Findings come from the first COR study of 160 children in spring 2002. Percentage scoring at each level (1, 2, 3, 4, 5) is indicated in columns 4–8.

*The wording of this item was revised following this data collection, so these statistics do not apply to the published version.

Table 3. Fall COR Item Statistics

Item	Number of Cases					Mean	Standard Deviation	1	2	3	4	5
	1	2	3	4	5							
COR Total	60	40.3	.47	32.0	21.3	5.2	1.2					
Initiative, Social Relations	171	13.0	.51	24.6	50.7	8.4	3.4					
Making choices and plans	233	7.7	.90	21.0	45.9	24.0	1.3					
Solving problems with materials	215	9.3	.79	39.5	42.3	8.8	0.0					
Initiating play	231	7.4	.77	19.5	64.1	6.9	2.2					
Taking care of personal needs	232	1.3	.68	21.1	64.2	11.2	2.2					
Relating to adults	230	7.8	.74	4.8	74.3	11.3	1.7					
Relating to other children	229	9.2	.86	33.2	43.2	13.5	0.9					
Resolving interpersonal conflict	204	20.1	1.06	38.2	30.4	4.9	6.4					
Understanding and expressing feelings	211	38.4	1.29	18.0	31.8	0.9	10.9					
Creative Representation, Movement and Music	174	25.1	.59	27.3	35.9	8.1	3.5					
Making and building models	224	36.2	1.04	20.1	35.3	7.6	0.9					
Drawing and painting pictures	225	42.7	1.29	7.6	30.7	14.2	4.9					
Pretending	223	24.2	.96	20.6	46.2	8.5	0.4					
Moving in various ways	233	8.2	1.12	49.4	21.5	10.3	10.7					
Moving with objects	228	11.4	.76	22.4	61.0	5.3	0.0					
Feeling and expressing steady beat	228	15.4	.82	46.1	34.6	2.2	1.8					
Moving to music	225	52.9	.95	26.7	16.9	0.9	2.7					
Singing	203	9.4	1.03	24.6	42.4	16.7	6.9					
Language and Literacy	207	34.4	.56	33.3	21.1	9.7	1.5					
Listening to and understanding speech	224	51.8	1.04	16.5	24.1	7.1	0.4					
Using vocabulary	225	24.9	.92	44.0	22.7	7.6	0.9					
Using complex patterns of speech	232	6.0	.98	39.2	35.8	12.5	6.5					
Showing awareness of sounds in words	183	63.4	.72	30.1	3.8	2.2	0.5					
Demonstrating knowledge about books	231	10.0	.96	32.0	33.3	23.8	0.9					
Using letter names and sounds	205	66.3	.86	25.4	2.4	4.4	1.5					
Reading	214	3.3	.69	71.0	16.8	8.4	0.5					
Writing	210	59.5	1.11	6.7	23.8	9.5	0.5					
Mathematics and Science	99	40.3	.55	32.0	21.3	5.2	1.2					
Sorting objects	207	26.1	.83	37.7	34.3	1.4	0.5					
Identifying patterns	206	68.0	.73	20.9	9.7	1.5	0.0					
Comparing properties	198	52.0	1.15	22.7	9.1	14.6	1.5					
Counting	221	15.4	.94	20.8	49.3	13.1	1.4					
Identifying position and direction	224	18.3	.73	52.2	27.2	2.2	0.0					
Identifying sequence, change, and causality	181	53.0	.95	24.3	19.3	1.1	2.2					
Identifying materials and properties	193	61.7	.82	24.9	11.9	0.0	1.6					
Identifying natural and living things	190	34.7	.97	51.1	4.2	6.8	3.2					

Note. Findings are based on the corrected scores of the second COR study of 233 children in fall 2002. Percentage scoring at each level (1, 2, 3, 4, 5) is indicated in columns 4–8.

Creative Representation, Movement and Music; 91% for *Language and Literacy*; and 51% for *Mathematics and Science*. In the fall study, 32 teachers collected COR data on 233 children, with data on all the items collected on 60 of them, 26% of the total sample. However, no one item had data for fewer than 78% of the children. By category, data on all the items were available on 73% of the children for *Initiative, Social Relations*; 75% for *Creative Representation, Movement and Music*; 89% for *Language and Literacy*; and 42% for *Mathematics and Science*.

Under standard procedures for completing the COR, a COR item is not scored until the teacher has written an anecdote about the child's behavior that supports the score given. Strictly speaking, this means that if a teacher has not completed even one item in a category, none of the data for that child in that category, or indeed on that entire COR, can be used in a rigorous data analysis. To achieve this standard in the COR validation studies we would have had to require that anyone completing a COR had to complete all the items, without exception. However, that requirement was not met in these two studies.

The average COR Total scores were 2.49 in the fall study and 3.47 in the spring study. The spring average was higher than the fall average, as one would expect. However, as explained earlier, this difference does not constitute a gain score because the averages come from different sets of children in different program years. Ten items had average scores below 2.00 in the fall, but no items had scores this low in the spring. No items had average scores above 3.00 in the fall, but 18 items had scores this high in the spring. With the full range of the items from 1.00 to 5.00, the item averages ranged from 1.45 to 2.94 in the fall and 2.52 to 4.38 in the spring, indicating good use of the items' full ranges.

One would expect that while some children would score at each available level of a 5-point item, most children would score low at the beginning of the program in the fall, and most would score high at the end of the program in the spring. These expectations were borne out by the findings. In fact, for the COR Total score, 72% of the children scored 1 or 2 in the fall. Of the items in the fall, most children scored low on 18 items, and most scored in the middle on 14 items. In the spring, 65% of the children scored 3 or 4, with similar distributions for most of the items.

Reliability

Reliability is defined as how well various measurements of the same thing (such as a group of similar items or two observers completing the same items) agree with one another. In examining the COR's reliability, we examined the internal consistency of its items, using the Cronbach alpha coefficient. We also examined inter-observer agreement, using Pearson product-moment correlations between two sets of observers, the teachers and assistant teachers in 10 classrooms (20 observers in all). For both alpha coefficients and correlation coefficients, 1.00 represents perfect reliability, and .70 represents a degree of reliability that is acceptable for everyday, low-stakes judgments about groups of children.

Internal consistency

As shown in Table 4 (on this page), the alpha coefficient of internal consistency for all 32 COR items was very sound: .94 in the first study and .91 in the second study. The alpha coefficients for the four categories were also acceptable, ranging from .79 to .88 in the spring study and .75 to .80 in the fall study.

Inter-observer agreement

In the fall study, 10 pairs of teachers and assistant teachers both rated the same 41 children. The correlations between teachers and assistant teachers were as follows:

- .73 for COR Total
- .69 for *Initiative, Social Relations*
- .70 for *Creative Representation, Movement and Music*

Table 4. Alpha Coefficients of Internal Consistency Reliability for the COR

Category	First Study	Second Study
COR Total	.94	.91
Initiative, Social Relations	.82	.75
Creative Representation, Movement and Music	.79	.80
Language and Literacy	.85	.80
Mathematics and Science	.88	.75

Note. Findings come from the first COR study in spring 2002 and the second COR study in fall 2002.

Table 5. COR Factor Analysis

Item	Correlation With Factor				
	1	2	3	4	5
Percentage of variance explained	15.8%	12.7%	11.9%	10.1%	8.6%
Initiative, Social Relations (n = 139)					
Making choices and plans	–	–	–	.46	–
Solving problems with materials	–	–	.61	–	–
Initiating play	–	–	–	–	.72
Taking care of personal needs	.52	–	.48	–	–
Relating to adults	–	–	.44	–	–
Relating to other children	–	–	.59	–	–
Resolving interpersonal conflict	–	–	.74	–	–
Understanding and expressing feelings	–	–	.53	–	–
Creative Representation, Movement and Music (n = 134)					
Making and building models	–	–	–	.70	–
Drawing and painting pictures	.41	–	–	–	–
Pretending	–	–	–	.58	–
Moving in various ways	–	–	–	–	.65
Moving with objects	–	–	–	.63	–
Feeling and expressing steady beat	–	–	.54	–	–
Moving to music	–	–	–	–	.58
Singing	–	–	–	.45	–
Language and Literacy (n = 133)					
Listening to and understanding speech	–	.41	–	.45	–
Using vocabulary	.53	–	.41	–	–
Using complex patterns of speech	.46	–	–	–	.42
Showing awareness of word sounds	–	.58	–	–	–
Demonstrating knowledge about books	–	–	–	–	–
Using letter names and sounds	–	.80	–	–	–
Reading	–	.76	–	–	–
Writing	–	.71	–	–	–
Mathematics and Science (n = 81)					
Sorting objects	–	.44	–	–	–
Identifying patterns	.58	.44	–	–	–
Comparing properties	.66	–	–	–	–
Counting	–	.61	–	–	–
Identifying position and direction	.74	–	–	–	–
Identifying sequence, change, and causality	.68	–	.43	–	–
Identifying materials and properties	.69	–	–	–	–
Identifying natural and living things	.60	–	–	–	.46

Note. Correlations greater than .40 are reported. The factor analysis's extraction method was principal component analysis; its rotation method was Varimax with Kaiser normalization. These findings come from the first COR study in spring 2002.

- .79 for *Language and Literacy*
- .73 for *Mathematics and Science*

These correlations are less than 1.00 for two reasons—differences between teachers and assistant teachers in which child behaviors they observed and differences in how they scored what they observed. While such differences diminish reliability, they can also be seen as a strength of a teaching team, a way in which team members complement each other by seeing different aspects of children’s behavior.

Validity

Validity is defined as how well an instrument measures what it claims to measure. Our assessment of the validity of the COR encompasses both internal validity, using confirmatory factor analysis to examine its internal structure, and external validity, examining correlations between the COR and important related measures, specifically those in the Cognitive Skills Assessment Battery (CSAB; Boehm & Slater, 1981) and children’s age and gender.

Table 5 (on page 30) presents the findings of a confirmatory factor analysis conducted with the data from the spring study. These findings provided the rationale for our changing from six to four COR categories. The factor analysis found four factors that clearly represented these four categories.

- Factor 1 had six of the eight *Mathematics and Science* items.
- Factor 2 had five of the eight *Language and Literacy* items.
- Factor 3 had six of the eight *Initiative, Social Relations* items.
- Factor 4 had four of the eight *Creative Representation, Music and Movement* items.

Factor 5 had items from each of the four categories, as did the first four factors. The first four factors accounted for 50.5% of the variance in the COR.

To assess the validity of the revised COR, in the fall study we administered the CSAB to 28 Head Start children on whom we also had COR data. The CSAB produces three scores—Basic Information (correctly identifying name, address, birthdate, and telephone number); Cognitive Skills (such as identifying body parts, colors, and shapes; recalling words and sentences; muscle coordination; vocabulary; and discriminating symbols, sounds, and words); and Response During Assessment (such as task persistence, attention span, and confidence). We selected

the CSAB because its items resemble COR items, but the two instruments are also different in both process and content, so that in general, moderate positive correlations between .40 and .70 were expected.

Table 6 (below) shows the correlations between CSAB and COR scores. The COR Total was moderately correlated with CSAB scores: .46 with Basic Information, .57 with Cognitive Skills, and .62 with Response During Assessment. COR *Language and Literacy* had the strongest correlations with CSAB categories, while *Creative Representation, Movement and Music* had the weakest. COR *Mathematics and Science* had weaker-than-expected correlations with CSAB categories. Of the three CSAB categories, Response During Assessment had the strongest correlations with COR categories.

Because COR categories are intended to represent the child’s learning based on various developmental opportunities, they should be moderately correlated with age, but not strongly correlated, which would suggest a dominant role of maturation. The fall study examined this question. Children’s ages were weakly but significantly (probability of less than 1 in 20) correlated with various COR scores: .31 with COR Total, .25 with *Initiative and Social Relations*, .16

Table 6. Correlations Between COR and Cognitive Skills Assessment Battery

COR Category	n	CSAB		
		Basic Information	Cognitive Skills	Response During Assessment
COR Total	10	.46	.57	.62
Initiative, Social Relations	23	.44*	.49*	.47*
Creative Representation, Movement and Music	22	.23	.31	.47*
Language and Literacy	26	.63**	.52**	.67**
Mathematics and Science	12	.22	.39	.40

Note. These findings come from the second COR study in fall 2002.

* $p < .05$; ** $p < .01$

with *Creative Representation, Movement and Music*, .33 with *Language and Literacy*, and .28 with *Mathematics and Science*; numbers of children in the analyses varied from 99 to 208.

It is desirable for an instrument such as the COR to be gender-neutral, that is, for scores to be no higher for boys or for girls. In fact, in the fall study none of the differences between girls' and boys' scores were statistically significant. As Table 7 (below) shows, girls' COR scores were a little higher than boys'. The largest difference was in the COR Total, for which girls' average score was .17 of a point higher than boys'.

Summary

To examine the statistical characteristics of the Preschool COR, Head Start teaching staff in one grantee collected data from 160 children in spring

2002 and 233 children in fall 2002. Children ranged in age from 3 years 0 months to 5 years 5 months. Some data were missing on most of the children. The average COR Total scores were 2.49 in the fall study and 3.47 in the spring study. The alpha coefficients of internal consistency for all 32 COR items were a healthy .94 in the first study and .91 in the second study, with alpha coefficients for the four COR categories ranging from .75 to .88. The COR scores of 10 pairs of teachers and assistant teachers were correlated at .73 for COR Total and .69 to .79 for the categories. The COR's internal validity was affirmed by a confirmatory factor analysis on data from the spring study, which identified four factors that fit the four COR categories rather well. The COR's external validity was supported by expected correlations between COR Total and the CSAB (.46 to .62) and between COR Total and children's ages (.31), and no significant association with gender.

Table 7. COR Scores by Child Gender

Category		Males	Females
COR Total	<i>Number of Cases</i>	30	30
	<i>Mean</i>	2.41	2.58
	<i>Standard Deviation</i>	(.47)	(.47)
Initiative, Social Relations	<i>Number of Cases</i>	88	82
	<i>Mean</i>	2.60	2.67
	<i>Standard Deviation</i>	(.53)	(.50)
Creative Representation, Movement and Music	<i>Number of Cases</i>	86	87
	<i>Mean</i>	2.33	2.47
	<i>Standard Deviation</i>	(.55)	(.62)
Language and Literacy	<i>Number of Cases</i>	105	101
	<i>Mean</i>	2.06	2.18
	<i>Standard Deviation</i>	(.55)	(.57)
Mathematics and Science	<i>Number of Cases</i>	50	49
	<i>Mean</i>	2.01	2.08
	<i>Standard Deviation</i>	(.61)	(.49)

Note. None of these differences were statistically significant with a probability of less than .05. These findings come from the second COR study in fall 2002.

Appendix B: Infant-Toddler COR Development and Validation

Summary

The High/Scope Infant-Toddler Child Observation Record is reliable and valid when used by caregivers with infants and toddlers in care and education settings. High/Scope developed the instrument with feedback from 38 practicing infant-toddler caregivers. Following this, the instrument's reliability and validity were studied with 20 caregivers, who observed 50 infants and toddlers (4 to 36 months old) in seven child care centers and one family child care home. The caregivers received 2 days of training before beginning their observations.

The alpha coefficients of internal reliability for ratings by caregivers were quite high—.99 for the 28-item scale, .92 or .93 for the items in each of the six categories. To assess inter-observer agreement, 18 of the caregivers worked in 9 pairs. Each pair observed the same children (a total of 42 across this group of centers), with instructions not to share information with each other regarding how they filled out the COR. The correlations between the scores of the two groups of pair members were .93 for the total scale and .83 to .91 for the categories.

The concurrent validity of the Infant-Toddler COR ratings was assessed by examining their correlations with 30 of the same children's scores on the Bayley Scales of Infant Development (Bayley, 1993). Infant-Toddler COR total and category scores were all correlated at .83 or higher with Bayley mental and motor age scores. Removing the effects of age, the Infant-Toddler COR total was still correlated at .36 with Bayley mental age and .26 with Bayley motor age.

The Need for Infant-Toddler Observational Assessment Instruments

The percentage of infants and toddlers receiving care outside the home is steadily increasing, and this growth is accompanied by an urgent need to offer these young children competent and sensitive care that is appropriate to their developmental status. The Infant-Toddler COR assists caregivers in offering optimum care by helping them focus their observations of children and providing a strategy for planning an environment and routine attuned to the individual needs of the children.

Most conventional infant and toddler assessment instruments are not appropriate for use in child care settings. Historically, assessment of infants and toddlers has usually taken place in research or clinical settings. Instruments used in research typically focus on a very specific behavior (for example, the length of time an infant looks at a particular picture) and provide data that are useful when comparing the behavior of groups of infants or toddlers. In contrast, clinicians may use a variety of assessment tools to evaluate the developmental status of a particular child. The tests used by clinicians may be norm-referenced or criterion-referenced and focus on cognitive, motor, language, social, or sensory skills or some combination of developmental domains. Generally, the tests must be administered one-on-one by highly trained personnel in a clinical setting. The results are then analyzed and interpreted by clinicians and, if necessary, developmental interventions are prescribed. Screening tools are also used to look at the development of infants and toddlers. These instruments are usually easy to administer and may be used by pro-

professionals and nonprofessionals alike, but they provide limited information and are generally employed to identify developmental delays and determine the need for further assessment.

The assessment needs of caregivers in infant-toddler child care settings are very different from those of researchers or clinicians, and the Infant-Toddler COR has been developed with the needs of caregivers in mind. The administration of the COR is based on ongoing observations of infants and toddlers as they go about their daily routine in their natural environment. In this way the COR recognizes the constantly changing nature of development and allows caregivers to document behaviors that reflect children's strengths in a variety of developmental domains.

Infant-Toddler COR Study Procedures

The reliability and validity of the High/Scope Infant-Toddler COR were assessed using the following two-phase strategy. The first phase of the study involved infant-toddler caregivers who were familiar with the High/Scope Child Observation Record for Ages 2½–6, referred to here as the Preschool COR (High/Scope Educational Research Foundation, 1992). These caregivers field-tested a preliminary version of the Infant-Toddler COR and provided feedback to project staff, who reviewed this information and made the necessary changes in the instrument. In the second phase, this revised version of the Infant-Toddler COR was tested for reliability and validity by caregivers who had no previous experience with other versions of the COR.

Phase One: The developmental field test

Project staff recruited 38 infant-toddler caregivers working at 2 private homes and 11 child care and early education centers around the country to pilot the preliminary version of the High/Scope Infant-Toddler COR. The caregivers or their supervisors were previous users of the Preschool COR and thus were familiar with the general format of and procedures for using the COR. They were given written instructions regarding observation of infants and toddlers and procedures for collecting anecdotes and completing the Infant-Toddler COR. The study participants were then asked to complete the Infant-Toddler COR for at least one child each over a period of 3 months and to record their comments about the content, feasibility, and relevance of the COR for

their work with children, families, and staff. Project staff then reviewed their comments and the completed CORs.

The caregivers observed a total of 47 infants and toddlers between 3 and 34 months of age; the age distribution was as follows: 3 children 3–6 months old, 9 children 7–12 months old, 7 children 13–18 months old, 14 children 19–24 months old, 10 children 25–30 months old, and 4 children 31–34 months old.

Project staff examined the collected anecdotes to check them for accurate assignment to COR items and levels and looked at the frequency distributions across levels on each item. Staff also reviewed the users' comments about the content and use of the instrument. On the basis of information gained through these procedures, staff made changes in wording to clarify some items and adjusted the levels of some items to create a more even progression of difficulty. The incorporation of these changes into the Infant-Toddler COR resulted in the version that was tested for reliability and validity.

Phase Two: Design of the reliability and validity study

Sample. To initiate the Infant-Toddler COR reliability and validity study, we sent letters to local infant-toddler caregivers inviting them to participate. Twenty caregivers in seven child care centers and one family day care home agreed to participate. None of these caregivers had previous experience with the High/Scope Preschool COR. Their median age was 28 years; 18 were females and 2 were males.

Table B-1 provides information about the background of the caregivers who participated in the study. As a group, they had varied work histories and educational backgrounds. Their experience working with infants and toddlers ranged from less than 1 year to more than 10 years. Their full-time school experiences ranged from 12 to 18 years, with a mean of 15.5 years. Half the group had bachelor's degrees and two (10%) had graduate degrees. These figures suggest that this group of caregivers was more highly educated than caregivers and preschool teachers in general (Cost, Quality, and Child Outcomes Study Team, 1995; Kisker, Hofferth, Phillips, & Farquhar, 1991). However, the caregivers in this sample had little specialized training in early childhood education or child development. Fifteen of them had no early education preservice training, three had 3 to 4 years, and two had 8 years; almost half the caregivers had

Table B-1
Background Characteristics of Caregivers in the Reliability and Validity Study

Background Characteristic	N	% of Respondents
Years working with infants and toddlers		
0 – 2	2	10
3 – 4	9	45
5 – 6	5	25
10 or more	4	20
Years of full-time schooling		
12 or fewer	2	10
13 – 14	3	15
15–16	8	40
17 or more	7	35
Training in child development		
Yes	11	55
No	9	45
Years of early childhood education training		
0	15	75
1 – 2	0	0
3 – 4	3	15
8	2	10

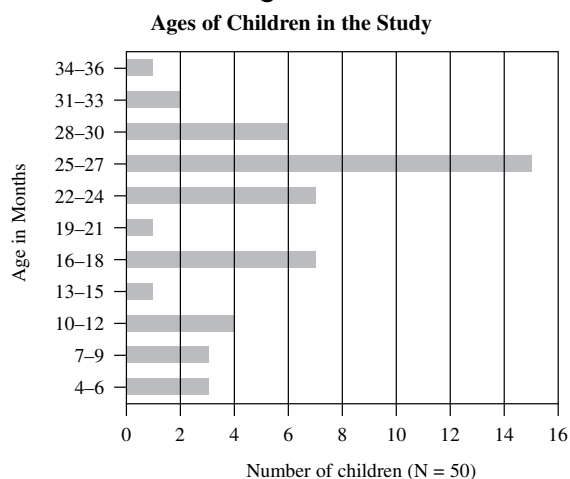
Note. Twenty caregivers participated in the study.

no training in early childhood education or child development.

These 20 caregivers observed a total of 50 infants and toddlers. To assess inter-observer reliability, 18 of the caregivers worked in pairs (9 pairs) to complete the Infant-Toddler COR assessments on 42 children, observing 3 to 6 children per caregiver pair. In one other center, 2 unpaired caregivers completed Infant-Toddler COR assessments on an additional 8 children. Of the infants and toddlers observed, 28 were male and 22 were female. Caregivers received no special instructions on selecting children to observe and thus selected them on the basis of such factors as the frequency and regularity of their program attendance.

The observations took place over a period of 3 months. At the midpoint of the observation period, children ranged in age from 4 to 36 months, with a mean age of 21 months and a median age of 24 months. Not surprisingly, as Figure 1 illustrates, the age distribution for the sample is skewed to the older ages. National surveys show that the percentage of children under age 3 years who spend some time in

Figure 1



nonparental care each week increases with age (Hofferth, Shauman, Henke, & West, 1998), so it is likely that the caregivers simply had more opportunities to observe children older than 1 year.

Training and follow-up. Project staff conducted a 2-day training for the 20 caregivers. Training began with a focus on anecdotal note taking. Participants practiced note taking as they observed video clips of children, learning how to format notes and keep them objective and concise. Next they practiced sorting the notes into COR categories, items, and item levels, with decreasing assistance from the trainers. This was followed by an inter-rater agreement check on how they sorted the notes. After this, participants completed the Infant-Toddler COR based on observation of a 35-minute video of one child and participated in a discussion of how to use the COR for program planning and during talks with parents. Finally, workshop leaders explained to the caregivers what they would be doing as participants in the project.

Training staff were on call to answer questions throughout the study. At the midpoint of the 3-month observation period, training staff reviewed the progress of each participant by checking the anecdotes collected to date and the assignment of these anecdotes to items and levels on the Infant-Toddler COR.

Reliability and Validity Study Findings

Table B-2 presents means, standard deviations, and ranges for each of the COR items based on the total sample of 50 children and 11 caregivers. Like the age

Table B-2
High/Scope Infant-Toddler COR Item Statistics

Category/Item	<i>N</i>	Mean	<i>SD</i>	Range
I. Sense of self	48	4.0	1.0	1.5–5.0
A. Expressing initiative	49	4.2	1.0	2–5
B. Distinguishing self from others	49	3.9	1.2	1–5
C. Solving problems	48	3.8	1.1	2–5
D. Developing self-help skills	48	4.1	1.1	1–5
II. Social relations	39	3.9	1.0	1.8–5.0
E. Forming an attachment to a primary caregiver	49	4.1	1.6	1–5
F. Relating to unfamiliar adults	42	3.9	1.2	2–5
G. Relating to another child	49	3.9	1.2	1–5
H. Expressing emotion	48	3.7	1.1	2–5
I. Responding to the feelings of others	39	3.7	1.1	1–5
J. Playing with others	48	3.9	1.2	1–5
III. Creative representation	46	3.9	1.1	1.7–5.0
K. Pretending	49	3.8	1.1	1–5
L. Exploring building and art materials	49	3.8	1.1	2–5
M. Responding to and identifying pictures and photographs	46	4.2	1.2	1–5
IV. Movement	45	3.9	1.0	1.8–5.0
N. Moving parts of the body	47	3.9	1.2	1–5
O. Moving the whole body	48	4.1	1.5	1–5
P. Moving with objects	45	3.6	0.9	1–5
Q. Moving to music	47	4.1	1.2	1–5
V. Communication and language	47	3.9	0.9	1.8–5.0
R. Listening and responding	49	4.0	0.8	2–5
S. Communicating interest nonverbally	47	3.9	1.2	1–5
T. Participating in give-and-take communication	46	3.9	1.1	2–5
U. Speaking	48	3.8	1.2	2–5
V. Exploring picture books	48	4.0	1.0	2–5
W. Showing interest in stories, rhymes, and songs	47	4.0	1.1	1–5
VI. Exploration and early logic	44	3.8	1.1	1.4–5.0
X. Exploring objects	49	4.1	1.1	1–5
Y. Exploring categories	45	3.8	1.3	1–5
Z. Developing number understanding	48	3.6	1.3	1–5
AA. Exploring space	45	4.1	1.2	1–5
BB. Exploring time	44	3.8	1.0	2–5
Total	39	3.9	1.0	1.8–5.0

Note. Eleven caregivers rated the performance of 50 children. Items have a potential range of 1 to 5, with 5 at the top.

distribution, the item means are skewed toward the top, but the ranges indicate that the items fit the sample well, with ranges from 1 to 5 for 18 items and 2 to 5 for 10 items. The table also presents the number of children rated on each item (out of the 50 children in the sample). The caregivers did not rate 1 or 2 children on 16 of the 28 items, 3 to 6 children on 7 of the items, 8 children on one item (*F. Relating to unfamiliar adults*) and 11 children on one item (*I. Responding to the feelings of others*). It is clear enough that infants and toddlers cannot relate to unfamiliar adults unless unfamiliar adults are present during the observation period, and it also appears that it is difficult for caregivers to observe signs of empathy in all infants and toddlers. The numbers of children identified for categories and the total score reflect the smallest number of children identified on any item in the category or total.

Staff examined the mean scores by age for Infant-Toddler COR items and categories. Table B-3 presents descriptive statistics for each of three age groups. The table shows that, as expected, the mean scores increase as children's ages increase. For children under one year, the mean scores for each category ranged from 2.13 to 2.48. Mean category scores for children between the ages of 1 and 2 years ranged from 3.85 to 4.11, and mean scores for children between 2 and 3 years were slightly higher, ranging from 4.51 to 4.70 across categories.

Reliability

The reliability results include intra-observer alpha coefficients (Cronbach, Gleser, Nanda, & Rajaratnam, 1972) that describe the extent to which a single observer rated related behaviors in the same way (Suen & Ary, 1989); and inter-observer Pearson product-moment correlation coefficients that describe the extent to which two observers rated the same behavior the same way.

Alpha coefficients were computed for each of the six categories, as well as for the entire scale. The coefficients were uniformly high: .99 for the entire scale and .92 or .93 for each of the six categories. It is probable that these values are so high in part because of the high correlation between Infant-Toddler COR performance and chronological age. However, when alpha coefficients were computed separately for the three age categories, the values remained quite high: .94 for infants less than 1 year old, .95 for infants 1 to 2 years old, and .78 for toddlers 2 to 3 years old. The

Table B-3
High/Scope Infant-Toddler COR Statistics by Age

COR Category/Age	Mean	SD	Range
Sense of self			
Infants less than 1 year	2.48	.55	1.5–3.3
Infants 1 to 2 years	4.11	.68	2.5–5.0
Toddlers 2 to 3 years	4.65	.45	3.5–5.0
Social relations			
Infants less than 1 year	2.37	.58	1.8–3.7
Infants 1 to 2 years	3.86	.59	2.8–4.7
Toddlers 2 to 3 years	4.54	.61	3.4–5.0
Creative representation			
Infants less than 1 year	2.13	.32	1.7–2.7
Infants 1 to 2 years	3.94	.67	3.0–5.0
Toddlers 2 to 3 years	4.70	.48	3.3–5.0
Movement			
Infants less than 1 year	2.19	.52	1.8–3.2
Infants 1 to 2 years	4.11	.54	3.0–3.5
Toddlers 2 to 3 years	4.60	.36	3.8–5.0
Communication and language			
Infants less than 1 year	2.48	.44	1.8–3.2
Infants 1 to 2 years	3.85	.62	2.8–5.0
Toddlers 2 to 3 years	4.61	.41	3.4–5.0
Exploration and early logic			
Infants less than 1 year	2.19	.53	1.4–3.4
Infants 1 to 2 years	3.88	.66	2.4–4.6
Toddlers 2 to 3 years	4.51	.54	3.0–5.0
Total			
Infants less than 1 year	2.33	.45	1.8–3.2
Infants 1 to 2 years	3.94	.55	2.9–4.6
Toddlers 2 to 3 years	4.60	.39	3.5–5.0

Note. Scores have a potential range of 1 to 5, with 5 at the top. The sample of 50 young children had 10 infants less than 1 year old, 16 infants 1 to 2 years old, and 24 toddlers 2 to 3 years old.

high alpha values indicate that the various behaviors of infants and toddlers, as observed with the Infant-Toddler COR, are remarkably consistent, both within and across categories.

To assess reliability across caregivers, 9 pairs of caregivers completed Infant-Toddler CORs on a total of 42 children. The caregivers were instructed not to share anecdotes or any other information regarding COR completion with each other. In other words, each caregiver worked independently to complete the Infant-Toddler CORs for the children he or she observed.

For the analysis, we arbitrarily divided each pair and called one set of pair members Group 1 and the

other Group 2. As Table B-4 illustrates, the Infant-Toddler COR category means of the items completed by each group of caregivers were very similar, with an average category difference of only .05 point.

The Pearson product-moment correlations computed between the two groups of observers were .93 for the overall scale and .83 to .91 for the categories, as follows: *sense of self*, .89; *social relations*, .86; *creative representation*, .83; *movement*, .88; *communication and language*, .91; and *exploration and early logic*, .86.

These levels of agreement are acceptable for observational instruments. Some have argued that pairs of teachers or caregivers cannot be fully independent when they are working together, despite instructions to the contrary. Such mutual dependence would inflate the levels of agreement to some extent. In any case, these statistics indicate a high level of agreement between caregivers, evidence of the instrument's reliability across observers and the psychometric acceptability this brings.

The percentage agreement between the pairs of caregivers was also computed for each category; the results are presented in Table B-5. Exact agreement within categories ranged from 55 percent to 66 percent; exact or near agreement (ratings within one level of each other) ranged from 89 percent to 94 percent within categories.

Validity

Staff assessed the concurrent validity of COR ratings by examining correlations with a widely respected infant assessment instrument, the Bayley Scales of Infant Development (Bayley, 1993). The Bayley

Table B-4
High/Scope Infant-Toddler COR Category Means by Two Groups of Caregivers

Category	Group 1	Group 2
Sense of self	4.13 (.96)	4.18 (.99)
Social relations	3.99 (1.0)	3.98 (.99)
Creative representation	4.02 (1.0)	3.88 (1.1)
Movement	3.99 (.98)	4.02 (.93)
Communication and language	4.02 (.92)	3.99 (.99)
Exploration and early logic	3.95 (.98)	4.01 (1.0)
Total	4.02 (.94)	4.03 (.96)

Note. Scores are based on the ratings of a total of 42 children by 9 pairs of caregivers. One member of each pair is in Group 1, the other is in Group 2. Standard deviations are in parentheses.

Table B-5
Percentages of High/Scope Infant-Toddler COR
Scores on Which Caregiver Pairs Agree

COR Category	% in Exact N	% of Ratings Pairs	
		% in Exact or Near Agreement ^a	Agreement ^b
Sense of self	35	66	94
Social relations	30	64	92
Creative representation	33	63	89
Movement	34	59	94
Communication and language	32	57	94
Exploration and early logic	33	55	92
Total	30	60	93

Note. Statistics are based on ratings of a total of 42 children by 9 caregiver pairs.

^aRatings in agreement divided by all non-missing ratings.

^bRatings in agreement or near agreement (within one level of each other) divided by all non-missing ratings.

Scales have a long history of use in infant assessment; they are generally used as a developmental assessment tool by specially trained personnel in clinical settings. We computed Pearson product-moment correlations between mental and motor age scores derived from the Bayley on a subsample of 30 children who were part of the reliability study. These children were 8 to 35 months old when tested with the Bayley, with a mean age of 23.6 months. The Bayley assessments were completed immediately after the reliability data were collected, by an experienced examiner who had no knowledge of the results of the Infant-Toddler COR reliability study. The correlations are presented in Table B-6.

The Infant-Toddler COR scores are highly correlated with Bayley mental and motor age scores; all of the correlations are .83 or higher. This is partly explained by the fact that both Infant-Toddler COR scores and Bayley age scores are highly correlated with chronological age. To remove the common variance due to chronological age, we computed partial correlations, with the effects of age removed. As expected, this resulted in more modest correlations between the Infant-Toddler COR scores and Bayley mental and motor age, ranging from .10 to .51. After removing the effects of age, Bayley mental age was significantly correlated (at $p < .05$) with the Infant-Toddler COR total score and four of its categories—*sense of self*, *social relations*, *movement*, and *ex-*

ploration and early logic; Bayley motor age was significantly correlated only with Infant-Toddler COR *movement*, the most similar category.

Study Conclusions

This study indicates that, with two days of training, infant-toddler caregivers can use the Infant-Toddler COR to assess the behavior of infants and toddlers in care and education settings, producing results that are both reliable and valid. The internal reliability and inter-observer agreement of these ratings should be excellent. For the total Infant-Toddler COR score, the validity study found an alpha coefficient of internal reliability of .99 and a Pearson product-moment correlation coefficient between observers of .93. The concurrent validity should be excellent as well. In our study, the total Infant-Toddler COR was correlated .91 with Bayley mental age and .87 with Bayley motor age.

In the study, 20 caregivers observed 50 infants and toddlers. As such, it was large enough to accurately assess the instrument's reliability and validity, but not large enough to establish reliable age norms. As Figure 1 shows, the sample had 10 infants under 1 year old, 16 infants 1 to 2 years old, and 24 toddlers 2 to 3 years old. Many early childhood educators are justifiably wary of age norms because of the variability in the pace of children's development in their youngest years. We recommend that Infant-Toddler

Table B-6
Correlations Between High/Scope Infant-Toddler
COR Scores and Bayley Scores

Bayley Mental COR Category	Bayley Motor Age	Bayley Mental Age	Age-Partialled	
			Bayley Motor Age	Age
Sense of self	.89	.86	.46*	.34
Social relations	.88	.83	.43*	.27
Creative representation	.89	.87	.22	.26
Movement	.92	.90	.51*	.49*
Communication and language	.88	.83	.22	.10
Exploration and early logic	.89	.85	.44*	.28
Total	.91	.87	.36*	.26

Note. These Pearson product-moment correlations are based on a subsample of 30 children.

* $p < .05$.



COR users assess children's development not against age norms, but in light of their own development over time.

The 20 infant-toddler caregivers who participated in the validity study were typical of all infant-toddler caregivers in age and early childhood training and experience, even though half of them had bachelors' degrees. Infant-toddler caregivers vary greatly in their early childhood training and understanding. Training and use in the Infant-Toddler COR will advance their understanding of child development, but cannot substitute for preservice and inservice training in early childhood care and education.


The reliability and validity study did not include children with handicapping conditions, although High/Scope staff would like to carry out such a study and would encourage special educators and others who work with children with disabilities to use the Infant-Toddler COR to help identify areas both of strength and challenge in children's development.

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Child Observation Record (COR)

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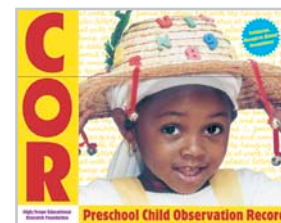
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
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