Looking at the Information You Gathered

The second part of our basic definition of assessment describes this next stage in the assessment cycle: "Assessment is the process of gathering information about children from several forms of evidence, then *organizing and interpreting that information.*"

Compiling and summarizing

What do you do with all those anecdotal records, rubrics, checklists, work products, photographs, and notes from discussions with parents that you have filed every day (. . . well, maybe every week or so) over several weeks or months of collecting and recording evidence about each child? Perhaps parent meetings are coming up, interim progress reports are due, or you need guidance for curriculum planning in important content areas.

A systematic organizational process will help you compile and summarize the large amount of information, as the first step toward deciding what the information tells you about the children's development and learning. One method for organizing information is to use a *portfolio* approach. Another method is to create a summary of compiled information.

What Is a Portfolio?

A portfolio is a purposeful collection of evidence of a child's learning, collected over time, that demonstrates a child's efforts, progress, or achievement. Physically a portfolio might be a folder, box, or drawer devoted to the collection. It is not itself an assessment; it is a way of storing and displaying evidence from various types of assessments.

A child's portfolio might contain work samples of all kinds, photographs and accompanying explanations of significant constructions and activities, writing samples (from scribbles to stories), interviews, lists of books read, and other artifacts of learning. It might also contain any number of records about the child, such as rating scales, anecdotal records, and checklists.

In *portfolio assessment*, there is a systematic process for determining what goes in the portfolio, when and by whom (adult or child) a piece of evidence is collected, and how it is evaluated. Maybe that process dictates that portfolios contain similar items for all children, or that they reflect children's individual interests and strengths.

Most assessment guides provide summary information sheets that you can use. Both individual child and group summary sheets have important uses. Figures 7 and 8 [located at the end of this section] show examples of different approaches to compiling comprehensive information about an individual child. Figure 9 is a summary sheet profiling the progress of an entire class in areas of learning valued in that program. It is easy to see how useful class summaries are in planning for the group.

Many school districts and large early childhood programs provide their teachers with summary sheets, often keyed to their programs' expected outcomes and tied to progress reports for parents. Other programs develop their own sheets of easily constructed grids and forms specific to that individual program's goals. Some early childhood programs use computer software to help compile, organize, and summarize collected information. Several commercial curriculum and assessment guides accompany their materials with such software.

Basics of Assessment

However, the most critical thing that happens in summarizing is that we study and reflect on the possible meaning of the evidence we have so diligently collected. As we fit the pieces of evidence into a coherent whole, we develop a better understanding of each child and of the group. Summaries are useful for parents and administrators, but the person who learns the most from a summary is the teacher who compiles it!

Interpreting

In this step, we interpret the objective information we compiled with sensitivity, using our knowledge of children. We consider the evidence we have systematically collected, recorded, and summarized, using our best professional judgment and the understanding and insight that come from daily interactions with children. These challenges are part of what makes interpretation a high-level professional activity of teachers.

The guidelines that follow will help you in deciding what the assessment information you have gathered might—and might *not*—mean.

Ensure the adequacy of the information

Your interpretation can be only as sound as the assessments you used, and it is most likely to be trustworthy when based on evidence from different sources, methods, and contexts. Work from recorded information, not memory. Draw your inferences from the patterns you see in your compilations and summaries of the evidence, not from bits of information in isolation.

Compare evidence with expectations

It is not very useful to document simply that a child can do two out of five motor activities on a skills checklist or understands seven out of ten of the "concepts of print." When it is time to interpret our assessment results, we need some frame of reference to help us determine what those results mean in terms of that child's learning. Is seven "good enough," or does the child's performance still need to improve?

If the outcome statements (e.g., standards or benchmarks) you are working with are specific enough, you can often make a direct comparison and determine what a child knows and can do in relation to those expected outcomes. Here's an example:

> Part of the assessment information you have collected relates to important science objectives in the school's curriculum guide. One of these objectives is that children "Use attributes and functions of objects to *group* those that are alike."

> From a variety of evidence you have collected—observations of children working on their own; records of what children have done or said in interaction with adults and other children as they worked with materials they could group; photographs, drawings, and graphs that demonstrate their understanding of grouping—you can make a trustworthy determination of what the children have learned and what remains to be learned in relation to the expected outcome.

> Some of the children may be able to group objects on observable attributes but not on functions; some may be able to do both.

> From this information you can develop activities to keep all the children progressing toward this objective that identifies skills and understanding basic to all learning.

Note that in our example, the focus was on what each child had learned in relation to a standard (*criterion-referencing*), not whether the child was average, above average, or below average compared with what the other children knew (*norm-referencing*). This is an important distinction to make between two approaches to understanding what assessment results mean.

That said, meeting a standard is not the sum total of what you need to consider with respect to a child's development and learning. For example, often a child can and should go far beyond the skills and understandings called for in the benchmarks for a standard. You will want to think about what else that child can explore and how you can encourage further learning.

Compare evidence with a developmental continuum

Information you collect about what children know and can do takes on additional meaning when you look at that information in the context of a *developmental continuum*. Such a continuum describes the typical sequence of

Norm-Referencing vs. Criterion-Referencing

It is not the assessment tasks or items that distinguish an assessment as *norm-referenced* or *criterion-referenced*. Instead, the distinctive element is the comparison. Here is an example that may feel familiar from your own school experiences:

> Matt and Justin are second-graders in different classrooms. Each takes the same math test. Matt's teacher says that only the top five scores in the class will earn an A. Because his test score will be compared against his classmates' scores, Matt's math assessment is *norm-referenced*. In Justin's classroom, his teacher says that a score of at least 9 out of a possible 10 points will earn an A. Because each student's score in Justin's classroom is looked at independent of the other students' scores, his math assessment is *criterion-referenced*.

In norm-referencing, the comparison is with children who have taken the same assessment—the *norming group*. The norming group could be a national sample, the child's own classmates (as in Matt's case above), or anything in between. In assessing growth and development, our norming group might be "typically developing children"—a profile developed from the study of many human children over many years. A height screening, for example, is a comparison with children's typical height at that age, and therefore is a norm-referenced assessment. Results on a norm-referenced assessment are reported in terms such as whether a child scored above or below the average (or *mean*), or performed as well or better than a given portion of the norming group (*percentile*).

Standardized achievement tests typically are norm-referenced; for example, the Iowa Tests of Basic Skills, the Metropolitan Achievement Tests, and the California Achievement Tests. Norm-referenced assessment can indicate the relative standing of schools, districts, and states, as well as their standing relative to a national sample. For example, policymakers might want to know whether students in schools receiving low funding do as well on the tests as students from affluent schools do. Intelligence tests such as the Stanford-Binet and the Weschler Intelligence Scale for Children (WISC) and standardized screening tests such as the Early Screening Inventory and the Developmental Indicators for the Assessment of Learning-Revised (DIAL-R) are also norm-referenced.

In the classroom, a teacher's first impulse may be to compare children with other children in a group. But if only a few children are way behind the rest, do we conclude that everything is okay? Even if the entire group perform similarly, are they all behind or ahead of where they should be? To know that, we need to compare each child's performance with curriculum expectations—as in the grouping example (on the previous page). In other words, has each child acquired the knowledge or skill identified in our *criterion* (i.e., in our standard, benchmark, objective) as being important? Information from criterion-referenced assessments is directly useful in deciding what children have yet to learn.

Most assessments aligned with standards, whether developed by commercial publishers or education systems, are criterion-referenced.

child development and learning. Sometimes the continuum identifies the steps of the sequence as being associated with certain ages, stages, or grade levels, with the caution that all children must not be expected to progress at the same rate or reach a particular step at the same time. A continuum provides a starting framework for thinking about what range of things to work on with a group of children at a particular age or grade.

By comparing information about a particular child with the developmental continuum, you can approximate where in development that child is now, which milestones and understandings the child has mastered to reach that point, and which should occur later if the child gets appropriate learning experiences and opportunities. For example, young children differ dramatically in their ability to hold and use writing and drawing instruments, an essential skill even in today's mouse-and-keyboard world. Some children's first encounter with pencils, pens, crayons, and markers comes in kindergarten; for others it comes much earlier. Some children gain fine muscle control early; others struggle for years. But there is a predictable sequence in how children's abilities typically develop, as shown in Figure 10. The examples of children's work show points in this developmental sequence.

Referring to the continuum informs our interpretation of the evidence we have gathered (and may guide our next steps). Do the children's abilities fall in a range appropriate for their age and developmental level? If not, what might be the reasons? What additional evidence might add to our understanding?

Compare performances at two or more points in time

We can draw conclusions about what progress a child has made if we have collected evidence over time in such a way that the evidence is comparable. One way to ensure comparability is to use the same assessment procedures each time; that is, to use a *standardized* approach. For example, you might compare writing samples with previous writing samples that used the same tools and paper; or compare physical dexterity on tasks that used the same equipment, setup, and directions.

Whether the child is making *enough* progress would be a separate comparison of performance with expectations or typical development.

What "Standardized" Assessment Is and Isn't

Standardized is not—or should not be—a dirty word in early childhood assessment. We do assessment that is standardized when we do our best to be consistent and uniform, or *standard*, in our methods so results can be compared. If we assess different children for the same skill or understanding, or the same child over time, we give the same instructions, allow the same amount of time, provide the same materials, look for the same behavior, follow the same steps, record information on the same form. We can develop and use standard procedures for making certain kinds of observations, for collecting children's work products, and for eliciting their responses. Standardization saves time, as well as increases the reliability and fairness of our assessments.

The photos below show a simple, standard cutting task that a teacher had children do over a period of several days. Provided with the same kind of paper and scissors, each child was to snip on the short lines, cut on the line across the paper, and cut on the curved line to produce the semicircle. The two examples show the range in abilities of the group.

As part of such an assessment it would be important to observe the children while they were cutting, to see how each held the scissors and paper. The child whose work is shown on the left could benefit from some help learning to use scissors.
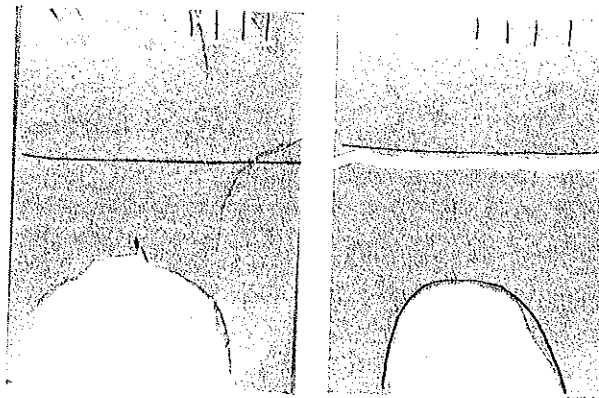
Standardized assessment can also refer to something more elaborate and structured in which procedures and instruments are specified, teachers are trained in how to use them, and the assessments are expected to be consistent and comparable across classrooms, schools, and centers. The Work Sampling System (Meisels et al. 2001) is one example. The system consists of three standard components—a developmental checklist, a portfolio of children's work, and summary reports of children's progress. The processes that teachers are taught in order to gather and interpret the basic information in the classroom are also standardized.

The most standardized assessment is the *standardized test*. Specially constructed according to a set of testing standards (see AERA/APA/NCME 1999), a standardized test requires a trained examiner to administer it and interpret its scores. Standardized tests often are used for accountability purposes and in the screening and diagnosis of special needs.

Standardized testing of young children is controversial. NAEYC's (2003) position statement *Early Childhood Curriculum, Assessment, and Program Evaluation* offers guidance in using the results of standardized tests and how to safeguard young children.

Recognize that a child's level of functioning varies

A child's performance on any one assessment should be seen as an indicator of that child's *range* of functioning (skills, understandings, development), rather than as an indicator of "true" performance. In fact, it is not necessary—and usually is not possible—to identify a child's level of functioning precisely.

Thinking in terms of a range makes sense in view of the difficulty in assessing young children and the variable nature of their development and learning. What any young child seems to know and be able to do as measured by a specific assessment at a specific time also significantly depends on a number of factors, including the extent to which you helped the child with the assessment, whether the child is just beginning to learn or has achieved mastery, and possible errors in measurement.

Consider the context

Because young children behave differently in different contexts, some assessment information makes sense only if you consider the time, setting, environmental influences, available materials, people involved, and possible home and community influences. For example, looking at the context, we should suspect environmental circumstances are challenging this child's ability to focus attention on the learning tasks at hand:

> Levon is an active, friendly first-grader whose performance has begun to deteriorate. Since her teacher rearranged the classroom, sometimes Levon does not finish a task, rushes through, or doesn't follow directions, especially in the work period that follows recess. Levon now faces the classroom's open doorway into a busy hall. She shares the table with her two best friends. And she must turn sideways in her chair to see the whiteboard and the teacher.

In addition, factors having to do with the adult doing the assessment—for example, his or her familiarity to the child and level of assessment skills—make an enormous difference in a young child's performance in one-on-one assessment situations.

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Seek the insights of others

Some teachers find that discussion with other teachers is one of their most valuable tools for trying to figure out what the wealth of assessment information means. This interaction may be especially valuable if you are a newcomer to assessment and you have access to colleagues with more experience.

Talking with children's families can also give teachers insights that are very useful in interpreting various kinds of assessment evidence. Family members may describe things the child does at home, for example, that you have not observed in the classroom or found in other assessments. This information can alert you to go back and try other ways to tap the child's knowledge and skills.

Interpret cautiously, conclude tentatively, and recheck

Interpreting the assessment you do for immediate classroom use does not require as many safeguards as interpreting information that may be reported to parents, next year's teacher, or an outside agency. In the classroom, if you see you have misjudged, you can immediately adjust. But if you are assessing for the purpose of accountability or in decisions such as placement or referral, the consequences of a hasty or mistaken interpretation can be serious.

Review your assessment's reliability and validity. Look for bias. Consider the challenges unique to the assessment of young children such as their uneven development, sensitivity to context, and all the rest. Assess again later; assess in another way.

Always consider several possible interpretations of the information. Among those possibilities, consider whether you are being less than objective in your interpretation. For example, perhaps we have blamed children for their rowdy behavior at transitions, until a more objective look reveals that we are part of the problem by hurrying the children to get ready for the next activity.

Learning about children and learning from children as we assess them can yield insights into ourselves that help us to grow as teachers and as people. Looking beneath the labels we may so readily apply enables us to "see" youngsters in a different light and respond to them in more appropriate ways.

This challenge, for teachers to continually self-monitor and self-correct, is another reason why insightful, on-target interpretation is such a high-level professional activity.

Figure 7. A summary sheet on an individual child

This one-page *Child Progress and Planning Report*, by Teaching Strategies, is a form for a narrative record, designed as a report for the child's parents as well as a summary sheet.

CREATIVE CURRICULUM®
DEVELOPING PRESCHOOLERS

Child Progress and Planning Report

Child's Name: _____ Date: _____

Teacher(s): _____ Family Member(s): _____

Summary of Developmental Progress:

SOCIAL/EMOTIONAL	COGNITIVE
Sense of Self; Responsibility for Self and Others; Prosocial Behavior	Learning and Problem Solving; Logical Thinking; Representation and Symbolic Thinking

PHYSICAL	LANGUAGE
Gross Motor; Fine Motor	Listening and Speaking; Reading and Writing

FAMILY COMMENTS AND OBSERVATIONS:	NEXT STEPS AT SCHOOL AND AT HOME:

Teacher(s) Signature: _____ Family Member(s) Signature: _____

Reprinted with permission from Dodge, D.T., Colker, L.J., & Heroman, C., *The Creative Curriculum® Developmental Continuum Assessment Toolkit for Ages 3-5*, Child Progress and Planning Report. © 2001 Teaching Strategies, Inc., Washington, DC, www.TeachingStrategies.com.

Figure 8. A summary sheet on an individual child

I. Personal and Social Development

A. Self concept
    F W S
1 Demonstrates self-confidence. (p. 1)
    Not Yet / In Process / Proficient
2 Shows initiative and self-direction. (p. 1)
    Not Yet / In Process / Proficient

B. Self control
    F W S
1 Follows classroom rules and routines. (p. 1)
2 Uses classroom materials purposefully and respectfully. (p. 2)
3 Manages transitions and adapts to changes in routine. (p. 2)

C. Approaches to learning
    F W S
1 Shows eagerness and curiosity as a learner. (p. 2)
2 Sustains attention to a task, persisting even after encountering difficulty. (p. 3)
3 Approaches tasks with flexibility and inventiveness. (p. 3)

D. Interaction with others
    F W S
1 Interacts easily with one or more children. (p. 3)
2 Interacts easily with familiar adults. (p. 4)
3 Participates in the group life of the class. (p. 4)
4 Shows empathy and caring for others. (p. 4)

E. Social problem-solving
    F W S
1 Seeks adult help and begins to use simple strategies to resolve conflicts. (p. 4)

II. Language and Literacy

A. Listening
    F W S
1 Gains meaning by listening. (p. 7)
2 Follows directions that involve a series of actions. (p. 7)

3 Demonstrates beginning phonemic awareness. (p. 7)
    Not Yet / In Process / Proficient

B. Speaking
    F W S
1 Speaks clearly and conveys ideas effectively. (p. 8)
2 Uses expanded vocabulary and language for a variety of purposes. (p. 8)

C. Reading
    F W S
1 Shows interest in and knowledge about books and reading. (p. 8)
2 Shows some understanding of concepts about print. (p. 9)
3 Knows letters, sounds, and how they form words. (p. 9)
4 Comprehends and responds to fiction and non-fiction text. (p. 10)

D. Writing
    F W S
1 Represents stories through pictures, dictation, and play. (p. 10)
2 Uses letter-like shapes, symbols, letters, and words to convey meaning. (p. 10)
3 Understands purposes for writing. (p. 11)

III. Mathematical Thinking

A. Mathematical processes
    F W S
1 Begins to use and explain strategies to solve mathematical problems. (p. 13)
2 Uses words and representations to describe mathematical ideas. (p. 13)

B. Number and operations
    F W S
1 Shows understanding of number and quantity. (p. 14)
2 Begins to understand relationships between quantities. (p. 14)

C. Patterns, relationships, and functions
    F W S
1 Sorts objects into subgroups, classifying and comparing according to a rule. (p. 14)
2 Recognizes, duplicates, and extends patterns. (p. 15)

D. Geometry and spatial relations
    F W S
1 Recognizes and describes some attributes of shapes. (p. 15)
2 Shows understanding of and uses direction, location, and position words. (p. 16)

Not Yet—child cannot demonstrate indicator
In Process—child demonstrates indicator intermittently
Proficient—child can reliably demonstrate indicator

F=FALL
W=WINTER
S=SPRING

The Work Sampling System Kindergarten Developmental Guidelines contains full descriptions of each performance indicator. (Number in parentheses indicates the page in the Guidelines where the indicator is described.)

This page is part of the *Work Sampling System Kindergarten Developmental Checklist, 4th ed.*, used to profile an individual child's performance on the system's seven "major domains of learning." Each domain ("Personal and Social Development" etc.) is broken into "functional components" ("Self concept" etc.) designating the domain's content emphasis. "Performance indicators" ("Demonstrates self-confidence" etc.) in each component state the skills, behavior, attitudes, and accomplishments that teachers have taught and assessed. A later blank page gives the teacher space for recording additional information about the child.

Basics of Assessment

Figure 9. A summary sheet on a group

This *Class Summary Form* is part of High/Scope's observational assessment tool the *Preschool Child Observation Record (COR), 2d ed.* The form summarizes COR results for a whole group for up to three assessments.


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Figure 10. A developmental continuum for "use of writing tools," and samples of various children's work

Most children:

• Grasp writing implements with whole hand or fist; jab at paper; make scribbles with movement of whole arm; copy vertical and horizontal lines. (2–3 yrs.)

• Try a three-point grasp but position on instrument inconsistent; copy a cross and a circle; scribble with spots of intense color; use horizontal and vertical lines, crosses, and circles in pictures.

• Use correct hand grasp but position on instrument still inconsistent; copy a square and some letters (from first and last name); draw suns; draw human figures, a head with facial features (placement of eye, nose, mouth may not be correct); draw human figures with stick arms and legs and facial parts in correct place; scribble with repeated features and on a horizontal line (looks like writing); scribble leaving space between "words."

• Can form written letters (many inverted or mirror images); color between lines; draw buildings, cars, and boats (proportions incorrect—people are larger than the buildings); trees and flowers; draw with correct proportions; incorporate letters into scribbling; write letters of first name (may not write letters in a line); write letters of last name (may not write letters in a line); draw rectangle, circle, and square.

• Hold pencil with fingertips; draw triangles; follow simple mazes; copy most letters (some still inverted); form words with letters (words may run together, words may begin on one line and end on another); write upper- and lowercase letters and numbers 1–10.

• Can space words when writing; print accurately and neatly; copy a diamond correctly; begin to use cursive writing. (7–8 yrs.)
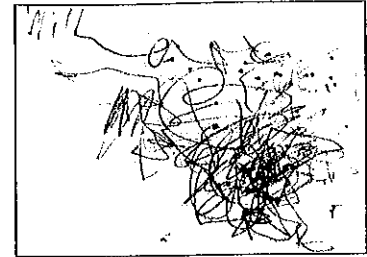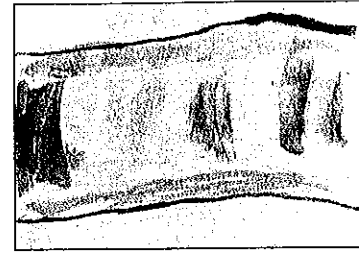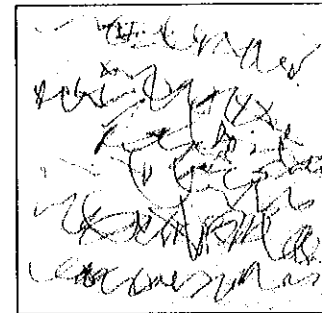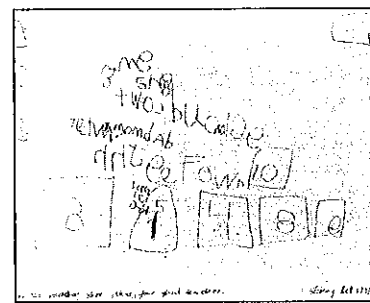
Continuum adapted from McAfee & Leong 2002, 226.
Copyright © 2002 Allyn & Bacon

1

2

3

4

These samples show points in the typical progression in writing ability as described in the developmental continuum:

• Jabs at paper, scribbles with whole arm movement
• Uses horizontal and vertical lines
• Scribbles, sometimes making random strings of letter-like forms and using wavy lines to imitate cursive writing
• Draws circles and squares
• Forms written letters and numerals
• Draws human figures; head with facial features
• Writes letters of first name

• Copies letters (note in #5 how the "Bugle Boy" on the sweatshirt has been reproduced as the child looked down at the shirt he was wearing)
• Forms words with letters; words may run together or begin on one line and end on another (note the invented spelling and use of words to make a sentence)
• Writes upper and lower case letters and numerals
• Spaces words when writing; prints accurately and neatly (note in #9 that Brett makes use of the solid and dotted lines provided as support, but they seem to be of little help to Kaylee in #8)
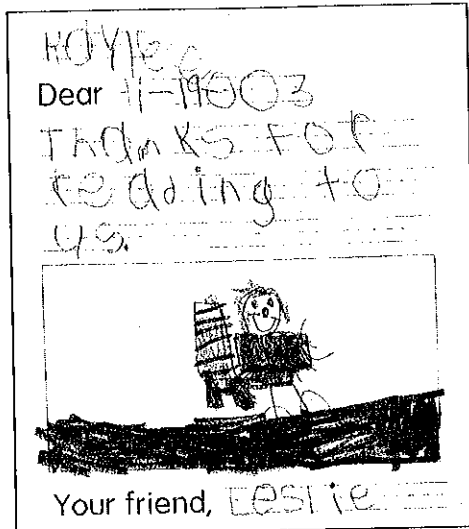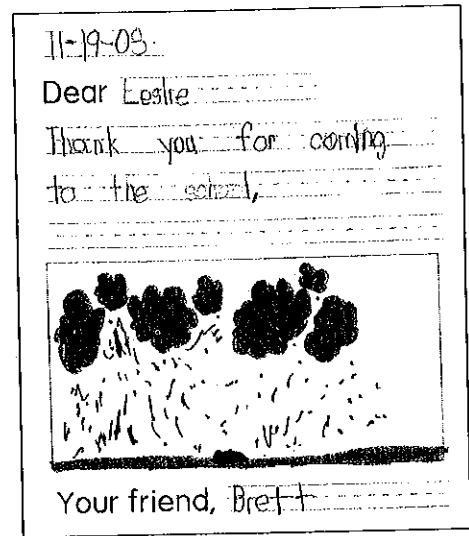

5

6

7
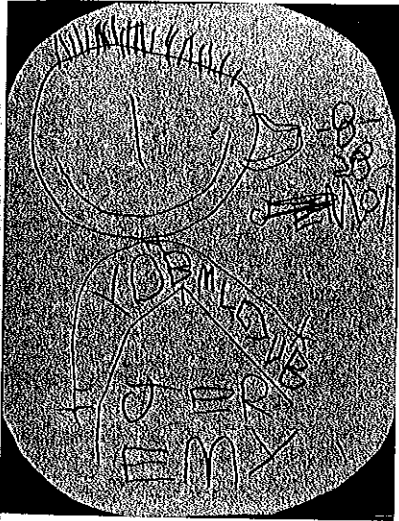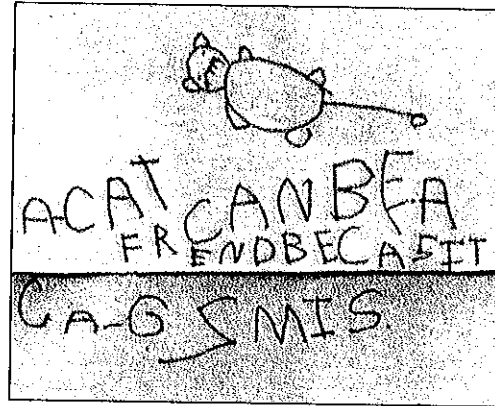
Figure 10, continued

8

9

These two thank-you letters, showing the range a teacher could expect within a class, could also be examples of *comparing evidence with expectations.*

If the expected outcome of the curriculum were "Uses conventions in varied forms of written communication (letters, notes, lists, school papers)," Kaylee's work shows she has a way to go to meet that expectation. She misplaces the recipient's name, the sender's name, and the date, although her message and picture are on target.