

# Assessment Tools in the 21st Century

by Jason K. Feld and Kathryn S. Bergan

Is it time to assess our assessments? The success of learners is highly influenced by the kinds of environmental supports and learning opportunities provided in their home, preschool, and community settings. It is vital that decision-making regarding children's learning and development be based on accurate and current information about the child's abilities, interests, and needs. While there is general agreement that rapid access to accurate, objective, and continuous information on children's learning is essential for effective decision-making, choosing the right assessment system requires careful consideration of what is needed to appropriately inform all those invested in the promotion of learning (parents, teachers, administrators, and policy makers).

Assessment systems for the 21st century are being called upon to do many things, including:

- track children's progress over extended periods of time,
- analyze and report learning for a variety of audiences, and
- create linkages between assessments and planning.

As a result of recent technological breakthroughs, dynamic assessment systems for managing learning place these goals within reach of preschool programs. The new systems are transforming the ways in which we gather and use information on children's development to promote learning. As always, the effectiveness of any method depends on objective and

appropriate use. The observation skills of the teacher are critical to good assessment. Assessment systems that support and complement caregiver observation techniques are increasingly valuable to preschool programs.

## Preschool Assessment: Beginning With the Basics

So, where does the preschool program begin in selecting a system that *both* meets its assessment needs and is aligned with its technological readiness? What questions should we ask in this new millennium of technology in order to arrive at an informed decision about choosing an assessment system for our program? In answering these questions, a good starting point is to remind ourselves of the basics when it comes to choosing assessment tools.

Jason K. Feld, Ph.D., is vice president of Assessment Technology, Inc. (ATI), creators of Galileo technology. He also serves on the Board of Directors of Childtime Children's Centers and on early childhood research committees in various states. Dr. Feld's areas of expertise include children's learning, developmental assessment, program quality, and outcome evaluation.



Kathryn S. Bergan, Ph.D., is director of operations and administration of Assessment Technology Inc. (ATI), creators of Galileo technology. She has provided care for children and adolescents as a certified psychologist for over 20 years. Dr. Bergan's areas of expertise include children's learning, developmental and clinical assessment, and administrative decision-making.

## ***Distinguishing Features of Screening and Developmental Assessment Tools***

Like most things in life, assessment tools come in a variety of shapes, sizes, and purposes (e.g., screening, developmental assessment, program evaluation, outcome documentation). Screening is the proper course of action when the primary interest of an assessment is the early identification, prevention, or remediation of potential developmental problems. If the results of screening suggest some current or potential difficulties, then referral to a specialist for a more comprehensive evaluation may be the course of action. Because screening tools are typically administered only periodically and are used primarily to detect difficulties, they should not be used as a proxy for developmental assessment or ongoing educational planning.

Developmental assessment is the direction to take when the primary interest of the assessment is to provide effective learning opportunities for children and to document progress across a variety of developmental domains. Developmental assessment is an ongoing process of measuring a child's ability and changes in ability as he progresses along a path of development. Consequently, in choosing a developmental assessment system for your program, determine the extent to which the following can be accomplished with each system:

- Chart children's growth and development along a developmental path.
- Facilitate planning for individual children and small groups.
- Modify curriculum in ways that meet children's needs and program goals.
- Provide rapid links between assessment results, activities, and lesson planning.
- Communicate effectively with parents.

- Provide data analysis at various program levels (child, center, program).
- Assist in program management and decision-making.
- Document developmental outcomes through a variety of reports.
- Filter variables that might influence developmental outcomes.
- Conduct program self-assessment and decision-making.

Ongoing assessment of children's abilities in this natural context provides a vital source of information for the design of learning opportunities and the formation of environmental supports in the preschool setting. Let's take a look at some of the essential ingredients of good assessment methods.

### ***Accurate, Objective, and Continuous Assessment***

Research has demonstrated that teachers are highly accurate observers in chronicling children's development. Regardless of whether teachers use paper or technology-based tools, effective observation is an integral part of developmental assessment of young children. Accurate information about child development and freedom from personal biases are essential in obtaining helpful observations and in interpreting observational information. In addition, gathering of information at a few distinct points in time will not be as helpful as an ongoing process of observing and recording children's progress. Developmental assessment of children's abilities on a continuous basis can enhance weekly lesson planning, individualize learning opportunities, and communicate children's success and needs to parents.

### ***Multiple Data Sources***

Because children express their abilities in a variety of ways (through samples of their work, their verbalizations, their

actions) and in a variety of environments (home and preschool), it is vital that assessment systems accommodate the various data sources available to help document "how we know what we know" about children. Data source documentation also adds an important level of credibility and defensibility to the information gathered throughout the assessment process.

### ***Reliability, Validity, and Representation***

Typically, information about reliability, validity, and standardization can be found in the technical reports and documents that accompany any assessment system.

## ***Assessment Tools in the 21st Century: Moving Forward into the Future***

Once the basics are applied to narrow the field of options, the next step is to determine which delivery methods are best suited to meet the needs of your program, staff, children, and families. In essence, there are three kinds of delivery methods: paper-based assessment tools, stand-alone assessment software packages, and on-line systems for the electronic management of learning. Each method has its strengths and potential limitations.

### ***Paper-Based Assessment***

Paper-based assessment methods are available in several formats.

- **Pre-packaged Assessment Kit:** Typically a kit includes materials and manipulatives that are used by the child and adult during the assessment process. Also included are score sheets for recording the child's performance during the assessment and

forms for reporting assessment results.

- **Developmental Checklist:** Some checklists are included as part of a curriculum, while others are curriculum-independent; the latter is broader in scope and is useful with a variety of curriculums.
- **Anecdotal Note-taking and Narratives:** The observer records continuous descriptions of a child's performance, behavior, or interactions, the circumstances surrounding these events, and notes important developmental milestones.
- **Work Samples:** Samples of children's work are collected and interpreted. This information is typically summarized on forms that can be used to share assessment results with parents.

**STRENGTHS:** Each of these paper-based formats can be used independently or collectively to develop a comprehensive picture of a child's learning. These more traditional formats provide a viable option for programs not yet technologically ready to use integrated software or web-based systems, or for programs which choose not to use technology-based systems. Overall, they tend to be easily accessible for use during the day and require no computer skills on the part of the teacher.

**LIMITATIONS:** Paper-based systems offer a relatively static approach to developmental assessment. For example, typically the forms and materials included in these systems are "fixed" and therefore not easily adaptable to changing local program needs and public policy, practice, and standards for early childhood education. Published updates to these systems tend to occur periodically rather than continuously, creating a significant delay in the time it takes for programs to benefit from advances in research on child development learning. In addition, programs

using paper-based systems may find it difficult, costly, and time-consuming to aggregate data on classroom, center, and multi-center progress, making it difficult to gain the benefits from expanded analysis.

### ***Stand-Alone Assessment Software***

The movement toward the use of technology-based assessment tools was originally introduced through stand-alone computer software and is available in three formats.

- **Software Versions of the Original Paper-Based Tools:** Data on children's learning is entered directly into the computer or transferred by hand from the original paper-based forms. In addition to child level reports, some aggregation of data at the class level is possible in this format, but there are typically no electronic linkages between assessment results and instructional planning.
- **Software Containing Assessments Aligned with a Specific Curriculum:** Data is entered as described above, and capable of generating child and classroom reports. Usually the linkages between assessment results and instructional planning are curriculum-specific. Lesson planning capabilities may or may not be included.
- **Software that Flexibly Integrates Assessment, Planning, and Reporting:** Data is entered as above, but not linked to any specific curriculum. Adaptability may allow local programs flexibility in revising and updating assessment scales, building customized activities and lesson plans directly in the software, and expanding upon the data options for various data entry fields. Electronic linkages are possible between assessment results, goal setting, and weekly lesson planning. The more advanced formats also contain tools

for aggregating and reporting data at the child, class, center, and multi-center levels.

**STRENGTHS:** Centers have rapid access to continuous information on learning. Electronic linkages between assessment results, goal setting, and weekly lesson planning offer teachers increased resources and efficiency. With software allowing multi-level aggregation, supervisors and administrators can manage learning more efficiently. Usually, a demonstration CD from the software manufacturer is available for customer testing.

**LIMITATIONS:** The technology resources of a program is an important factor to be considered. There must be an adequate number of computers capable of running the software to accommodate staff needs. Technical support and training resources are additional considerations.

### ***Web-Based Assessment and the Electronic Management of Learning***

There has been a recent migration of assessment systems to the Internet. On-line assessment technology is currently available to programs in two formats:

- **Web-Based Assessment Systems:** These systems allow entering of data on children's learning on-line, are capable of data aggregation, and can produce a variety of reports that can be used to communicate with a variety of audiences. These systems make it possible to record, store, aggregate, and report outcome data on children's learning at a few points in time during the year (typically three distinct periods).
- **Systems for the Electronic Management of Learning (EML):** EML makes it possible for administrators and teachers to collect, organize,

access, analyze, and report information on children's learning on a continuous basis, and to electronically link such information to goal setting, planning, and outcome documentation. This means that features generally include a wide range of reports and filtering capabilities. EML is also distinguishable from a purely web-based assessment system in that it makes it possible for staff, parents, and administrators to gain rapid access to information they need about children's learning and those factors that may influence educational progress.

**STRENGTHS:** Both formats offer preschool programs rapid access to information on children's learning and expanded aggregation and reporting capabilities compared to the stand-alone software option. EML offers centers flexibility and customization options not possible with stand-alone software. Communication about children's learning is efficient.

**LIMITATIONS:** The technology readiness of a program requires careful consideration. Computers running the application must have access to an Internet connection. The implementation commitment is generally greater than with other methods and requires significant staff training and support mechanisms. Confidentiality of information must be protected.

## Why is Assessment Technology Important?

The electronic age of the 21st century offers the possibility of rapid access to information about learning opportunities offered to children and what children are actually learning. New technology innovations related to developmental assessment can help preschool program staff and adminis-

trators manage learning more effectively than ever before possible. This technology is helping to create rapid and purposeful links between assessment, planning, reporting, outcome documentation, and communication with families. Technology does not replace the observation skills of the teacher; instead it builds on a foundation of good observation practices, making it possible for preschool programs to use assessment information in more ways to benefit children and enhance program quality.

Assessment information helps staff see each child's abilities and understand how to enhance development.

- Carefully recorded observations highlight a child's abilities. This information can then be translated into sound decisions for goal setting, planning individualization, and adjustments in curriculum.
- By observing children's reactions to their world and their interactions with staff, staff can evaluate the effectiveness of their own actions and can adjust how they influence each child.

When staff is closely tuned in to each child and what each can do, staff have a solid basis for deciding which activities will challenge and which will frustrate. While this can be achieved with various methods of assessment, electronically organizing, linking, and communicating this information gives educators the chance to use data in decision making in a more efficient manner.

Here are some questions if you are considering moving to a system of assessment that is technology-based:

- Does the system contain research-based developmental continuums?
- Does the system provide local control

for rapid adaptation and updating to meet local, state, and federal needs?

- Does the system provide hierarchical access through multi-level passwords?
- Can data aggregation and recall be achieved at any point in time at the child, class, center, and multi-center levels?
- Can data be archived annually and recalled if needed?
- Can the system filter on a variety of variables for assessing patterns of progress for groups of children?
- Does the system contain reporting tools that can be used for administrative decision-making related to program self-assessment, program improvement, and the documentation of outcomes?
- Is the system maintained on a secure site?
- Does the system use multiple data sources to capture assessment information or depend on only one source (e.g., samples of children's work) or a few (e.g., checklist observations and anecdotal notes)?
- Can summaries of sample characteristics be produced along with reports?
- Does the system provide a dynamic electronic curriculum or an electronic version of a paper-based curriculum?

A universal challenge of the 21st century is to leave no child behind. The electronic age creates challenges as well as opportunities related to the use of technology for the management of learning. Assessment of learning, planning of learning experiences, monitoring of teaching and learning, training of educators, conduct of educational research, and development of educational standards and policies are all being transformed by electronic technologies. Each of these transformations offers strategic and operational innovations in preschool programs with potential benefits for all children.