Administrative Decision Making in Early Childhood Education:

HOW DO I USE THE REPORTS AVAILABLE IN ONLINE REPORTER?

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Administrative Decision Making
in Early Childhood Education:
*Online Reporter and the Electronic Management of Learning (EML)*

WHAT IS GALILEO ONLINE REPORTER?

Galileo Online Reporter is a web-based application containing reports valuable to those who have the responsibility of managing the learning of others. Users of the information in the reports are administrators, specialists, teachers, policy-makers, and researchers. Galileo Online Reporter provides rapid electronic access to management information; it is part of the Galileo System for the **E**lectronic **M**anagement of **L**earning.

WHAT IS THE ELECTRONIC MANAGEMENT OF LEARNING?

The Electronic Management of Learning (EML) is a problem-solving endeavor. The fundamental problem to be solved is how to achieve valued learning goals. EML benefits all stakeholders in a learning community including children, teachers, parents, administrators, specialists, policy-makers and researchers. The EML process begins by establishing purposeful educational goals for children; goals are the driving force underlying management decisions. Once goals are established, plans are made to achieve those goals. The plans are then carried out and monitored. Finally, the EML process looks at the extent to which goals have been achieved. The EML process can occur as often as needed throughout the program year to help ensure successful outcomes for all the various stakeholders.
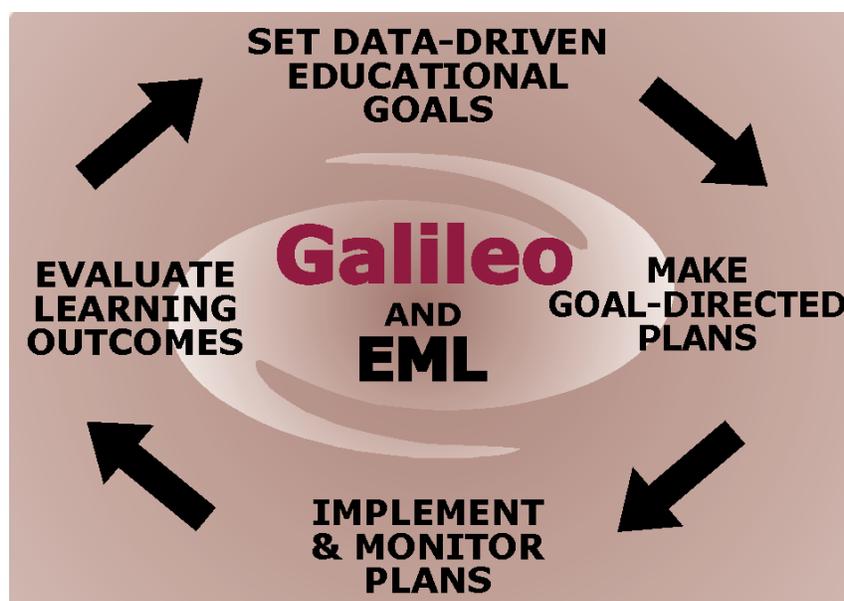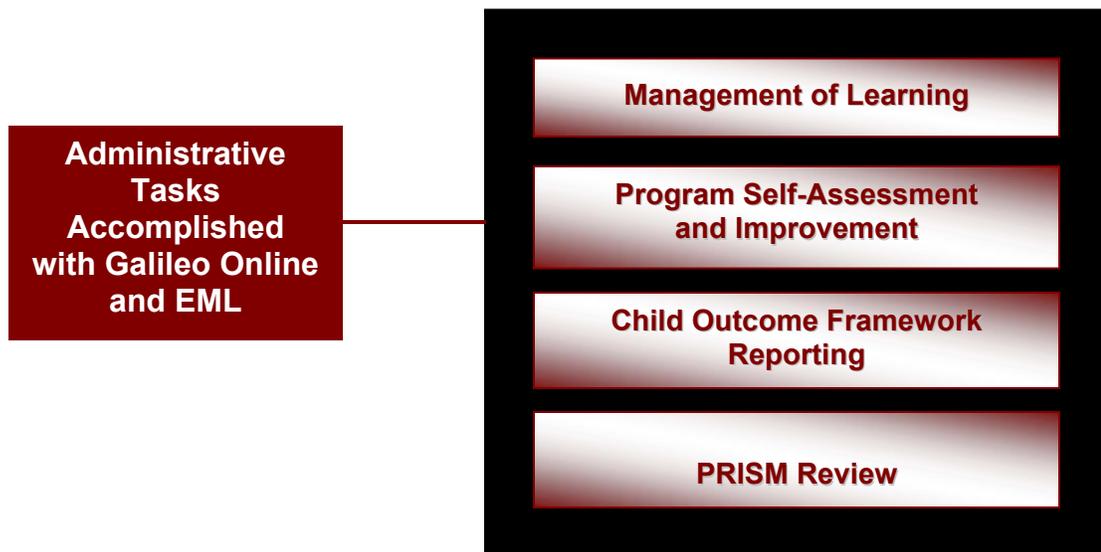

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MORE ABOUT GALILEO ONLINE REPORTER

Galileo Online Reporter enables administrators and supervisors to generate a variety of multi-level reports that reflect child outcomes including patterns of progress. Multi-level capability means that reports can be produced at class, center, agency, and multi-agency levels. With these reports, programs can look at child outcomes for the entire agency as well as for various groupings of children (e.g., children at a specific center or at specific delegate agencies). Likewise, Online Reporter allows agencies with broad oversight, such as State Departments of Education, to look collectively and separately at all programs within their jurisdiction. The overall goal of Online Reporter is to provide those in administrative and policy-making roles with the advantage of rapid access to information for use in setting educational goals, making and implementing plans to achieve those goals, and evaluating goal attainment.

Administrative Tasks Accomplished with Galileo Online and EML	Management of Learning
	Program Self-Assessment and Improvement
	Child Outcome Framework Reporting
	PRISM Review

FILTERS IN GALILEO ONLINE REPORTER

Galileo Online Reporter includes filters that make it possible to create reports for specific groups of children. For example, an administrator might wish to run a Development Profile in Early Math for children who will be five by September 30th of the current year. Creating this profile is possible simply by activating the age filter provided in Online Reporter. Other filters of interest might include ethnicity, gender, special needs, financial need, program type, and primary language. Examining the accomplishments of different groups of children sometimes may lead to the establishment of different sets of goals for different groups.

THE DEVELOPMENTAL LEVEL SCORE USED IN ONLINE REPORTER

The Galileo Path-Referenced Approach – Measuring Ability

The Galileo system is unique among developmental assessment tools for young children in that it is built on a path-referenced approach to assessment. The path-referenced approach makes it possible for early childhood programs to assess children's abilities in a variety of developmental areas (e.g., Language & Literacy) and to electronically link ability information to goal setting and the planning of learning opportunities that promote development. In Galileo, the Developmental Level Score (DL) provides information about ability in terms of an individual's position along a path of development. The path is comprised of a series of empirically ordered capabilities. The ordering of these capabilities reflects a validated progression of the construction of knowledge for a given developmental area. In Galileo, the DL score is used along with other information to compute the probability that a child will be able to perform each of the capabilities on a developmental path. For ease of interpretation, these probability estimates are converted to readiness levels that can be used to guide the planning of learning opportunities for children. When we know a child's ability as summarized by the Developmental Level Score, we know the kinds of things that the child has already learned and the things that the child is ready to learn now and in the future. This information provides the basis for planning learning opportunities that are appropriate to the child's needs and interests.

Benefits of the Path Referenced Score for EML

●The Developmental Level Score is highly beneficial in documenting program outcomes because it does not measure growth against a changing standard such as a norm group as is the case when traditional norm-referenced techniques are used. Rather, progress is measured directly in terms of change in position on a continuous developmental ability scale.

●A second benefit of the Developmental Level Score is it makes it possible to link measures across age levels and program years to assess growth over an extended time span.

● A third benefit is that the Developmental Level Score makes it possible to document children's accomplishments in a direct and easily understood fashion. In doing so, it provides information that can be used by administrators, teachers and parents to plan learning opportunities to promote development.

HOW DO I USE THE REPORTS AVAILABLE IN ONLINE REPORTER?

I: DEVELOPMENT PROFILES AND MILESTONE REPORTS

Online Reporter includes two reports that are particularly useful in: (1) assisting administrators to gain information about what children currently know; and (2) to evaluate the extent to which teacher observations are at the level of credibility expected by the program. These reports are the *Development Profile Report* and the *Milestone Report*. Both reports document learning with respect to specific goals in a given developmental area. Moreover, the *Development Profile* can be helpful in viewing the patterns of teacher observations and therefore their credibility. For example, since the Galileo Scales are comprised of empirically sequenced capabilities reflecting the construction of knowledge, the capabilities occurring earlier in the sequence would generally be acquired before those that are of greater difficulty. To the extent that recorded teacher observations reflect these patterns, the level of confidence in observer credibility is increased.

●*The Development Profile Report*

Agency Development Profile for *Early Childhood Program*
Scale Ages 3-5: Language and Literacy

Learned	Plan Now	Plan Soon	Plan Later	Capabilities
				LETTER NAMES AND SOUNDS
430	125	43	262	Identifies the first letter of his/her name by pointing to it.
229	207	37	387	Predicts what sound will be made by a source by pointing at a picture.
223	140	58	439	Identifies the first letter of her/his name by saying the name of the letter.
155	79	86	540	Names 10 or fewer letters.
50	19	22	769	Names 11 or more letters.
75	30	43	712	Can say beginning consonant sounds of familiar words, some of the time.
27	10	11	812	Can say beginning consonant sounds of familiar words, most of the time.
				REPETITION AND RHYMING
420	115	65	260	Recites a familiar poem, story, rhyme, or refrain.
185	201	84	390	Experiments with sound and the rhythm of sounds.
85	103	110	562	Plays with words and the rhythm of words.
83	31	64	682	Supplies rhyming words to familiar songs, poems, or words in play activities.
				LISTENING AND SPEAKING TO OTHERS
691	60	0	109	Initiates conversation with a familiar child or adult.
566	114	7	173	Takes turns being a speaker and a listener.
442	130	49	239	Follows two-step directions in logical sequence.
236	32	41	551	Asks questions to clarify meaning.

This report provides information **on all the goals** included within a given developmental area (e.g., Language and Literacy) assessed with Galileo. The *Development Profile* shows **how many children** have acquired each of the capabilities in a developmental area. In addition, it shows how many children are ready now, soon, or later to learn the other capabilities.

●*The Milestone Report*

Observation Date 11/30/2000

Agency Milestone Report for *Early Childhood Program*
Scale Ages 3-5: Language and Literacy

Learned	Plan Now	Plan Soon	Plan Later	Capabilities
				LISTENING TO STORIES
92.56%	5.00%	0.00%	2.44%	Listens attentively to a story.
				REASONING ABOUT FICTION AND NONFICTION
30.81%	19.07%	5.81%	44.30%	Predicts story events using picture cues.
				REPETITION AND RHYMING
48.84%	13.37%	7.56%	30.23%	Recites a familiar poem, story, rhyme, or refrain.
				READING
2.79%	1.16%	1.05%	95.00%	Identifies familiar short words in print, some of the time.

This report provides information on **specific subsets of goals** within a given area of development (e.g., Language and Literacy). Subsets may be of interest for a number of reasons: (1) they may be part of school readiness requirements; (2) they may be linked to state standards; (3) they may be part of federal outcome requirements. The report shows the **percentage of children** that have learned each selected capability. In addition, it shows the percent of children ready now, soon, or later to learn those capabilities.

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Using the Development Profile or Milestone Report for EML

Development Profiles and Milestone Reports provide a rich source of data for guiding EML at the local program level. Each profile and report provides information about what is happening in your program regarding children's learning. The information on the profiles and reports provide detailed data about your program's strengths as well as areas where additional intervention or planning will be beneficial.

Suggestion 1: *Review your data… What does your data tell you about your program, your center, and your classes, and the children?*

● Agency level data gives you an overall picture of the kinds of capabilities being acquired by the children in your program and their readiness for new learning opportunities. It is a way of looking at the overall learning and readiness of the children in your program. This profile along with other reports from Online Reporter can help to establish overall program goals and plans, as well as to identify specific areas of strength and need.

● Center and Class level data show the learning occurring within each center and class. As you look at each center and class profile, you will begin to develop a **portrait of the variability in learning and the potential for learning** across the different centers and classes in your program. Some centers and classes will be further along than others. Looking closely at the way the management of learning is occurring in these classes and centers may provide some insights for use in other centers and classes that are in need of additional assistance to accomplish program goals.

Suggestion 2: *Ask questions of your data… How can the data be used to provide learning opportunities for children that reflect program, center, and class level goals?*

● Where are we overall in promoting children's learning? For example, what kinds of capabilities are children acquiring in the areas of Language & Literacy? Early Math? Social and Emotional Development? Approaches to Learning? Creative Arts? Etc.

● What areas of learning and capabilities require additional attention as we plan in the weeks ahead?

● As a program, are we where we want to be at this point in time?

● How are the centers and classes doing in relation to overall goals in particular areas of learning, knowledge areas, or capabilities? Which centers/classrooms appear to be on track? Which ones are ahead? Which ones do we need to examine more closely?

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● What are the current accomplishments for different groups of children in our program? For example, are the children who will be leaving our program at the end of the year (i.e., turning 5 by September 30th) on track for a successful transition?

● What about variables such as ethnicity, gender, special needs, financial need, program type, and primary language? How are children within these groups or combinations of groups doing?

Suggestion 3: *Use your data to begin the goal setting, planning and implementation process.*

● Work with other supervisory staff, specialists, parents, and teachers to set reasonable goals at each program level based on your data.

● Make plans at each level of program operation to achieve the goals you have set.

● Have staff implement the plans and have supervisors begin monitoring implementation.

● Evaluate the effectiveness of your plans in a few weeks by looking at the progress being made by the children in the areas that you have targeted for change.
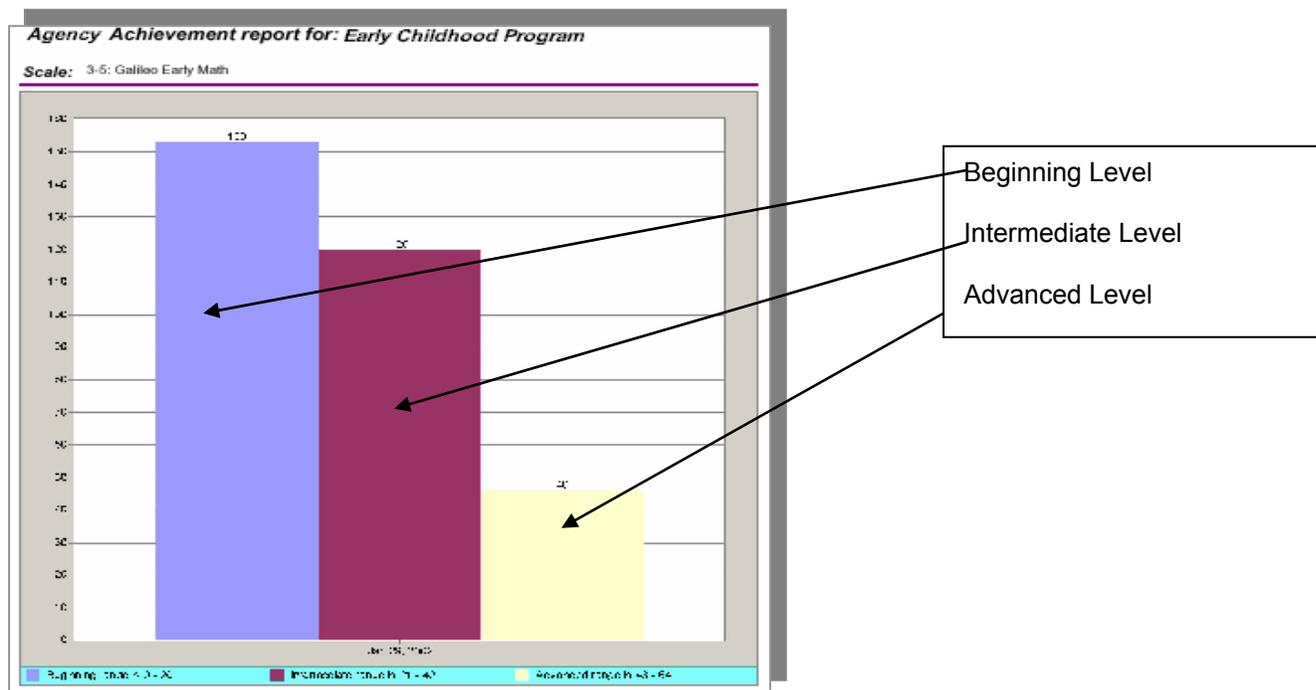
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II: ACHIEVEMENT LEVEL REPORTS

Goal setting at the administrative level can often be complicated by the fact that goals must meet the needs of all children and the broad range of abilities that they bring to the learning environment. For example, goals established for children at high ability levels will typically not be beneficial for children who at low ability levels. Likewise, goals that are reasonable for children at low ability levels will generally not meet the needs of children at high ability levels. One widely used approach for solving the problem of setting goals for children at differing ability levels is to set standards representing multiple achievement levels. For example, standards such as *basic, proficient,* and *advanced*, are used in the National Assessment of Educational Progress. Achievement levels such as *far below*, *approaches, meets,* and *exceeds the standard* are often used by State Departments or Education to assess children's accomplishments with respect to state standards. The Galileo System includes a series *of Achievement Level Reports*, which provide an opportunity for administrators to set and name multiple achievement levels, and to produce reports representing those levels.

●*The Achievement Level Report*

This report indicates the number of <u>**children who have reached each achievement level**</u> set by the program for a given developmental area (e.g., Early Math) assessed using the Galileo Scales. For example, an administrative team at an agency level may wish to set Early Math achievement levels using the names *far below, approaches, meets, and exceeds the standard.* They then might select cutoff points on the Early Math Scale in Galileo for each of the selected achievement levels. After cutoff points are set, the administrative team may wish to specify goals for each cut off point. They might set a goal that 40% of the children exceed the standard. When goals have been set, then reports can be produced documenting children's accomplishments with respect to the selected levels. The sample report below utilizes the Galileo default achievement levels – Beginning, Intermediate, and Advanced.

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Setting Achievement Levels : The Process

GET READY…Form A Team

The process of setting achievement levels may occur in many ways. Typically some blend of the various stakeholders in the educational process is involved. For example, teachers, administrators, specialists, parents, content experts, and community policy-makers may form teams to engage in setting the standards and the achievement levels that reflect those standards.

GET SET…Understand the Possibilities

Achievement levels are not etched in stone because education programs and goals are continuously evolving and changing. It is possible and sometimes necessary to set separate Agency, Center, and Class Achievement Levels to accommodate the broad diversity of children and ability levels in a program. Oftentimes there is likely to be variability in learning across classrooms and centers for different areas of development. When this occurs, administrators may wish to set different achievement levels at the class and/or center level as part of an overall plan to reduce variability and increase the potential for achieving program goals for children.

It is also possible that new or revised achievement levels might need to be set during the year as you reach the levels that have been set and wish to establish new goals. Resetting achievement levels is also helpful in those instances when you are engaged in the process of annual evaluation of your goals and when you are planning to set goals for the coming year as part of your initiatives to improve children's readiness for school.

GET GOING…Here's How to Do it

1. Have your team define and describe achievement levels (e.g., *far below, approaches, meets,* and *exceeds the standard).*

   Guidance: Note that Galileo automatically provides default levels: *Beginning, Intermediate,* and *Advanced*. When default settings are used, children at a B*eginning* level of development will have acquired up to one-third of the capabilities assessed on a Galileo Scale. Children at the *Intermediate* level will have acquired between one-third and two-thirds of the capabilities being assessed. Children at the *Advanced* level will have acquired two-thirds or more of the capabilities assessed.

2. Provide training for team members. Training typically covers definitions of the various cut points for each achievement level.

> **Guidance:** Suppose that you have decided to use the terms *Beginning*, *Intermediate*, and A*dvanced* to describe different levels of school readiness, but not to use the default cut points provided by ATI for those terms. Training might focus in part on making team members aware of the definitions of those terms and detailing the differences between them. For example, suppose that the *Beginning Level* was described as including children who demonstrated a rudimentary understanding of some of the basic capabilities necessary for success in kindergarten. By contrast, the *Intermediate Level* might be described as including children who had acquired the basic capabilities necessary for success in kindergarten. Training might focus in part on detailing the distinctions between these levels.

3. Set initial cut points for Achievement Levels.

> **Guidance:** Each team member might independently establish cut points using an *Agency Achievement Level Report* for a particular assessment scale. In all likelihood, there would be differences in the cut points chosen by the various panelists. These would need to be resolved.

4. Meet and present options.

> **Guidance:** Team members should meet to present the cut points that they have selected and come to an agreement. The result of this meeting should be a set of cut points supported by the team members.

5. Look at the consequences of adopting the agreed upon cut points.

> **Guidance:** Consequences might be determined by running one or more *Agency Achievement Level Reports*. Reports documenting children's accomplishments at the end of the previous year are often useful in determining consequences. For example, end of year progress from last year's cohort can be used as a starting point for estimating what a new cohort of children will be likely to be able to accomplish during the current program year, and where to realistically set achievement levels.

6. Learn from examining the potential consequences.

> **Guidance:** Make whatever revisions seem advisable after examining the consequences of adopting the initially agreed upon cutoff points.

7. Adopt the new goals and make staff aware of them.

> **Guidance:** In order to build support for the new goals, it may be useful to make information available as to how the new goals were selected and the importance of the goals in meeting children's developmental needs.

Using the Achievement Level Report for EML

Achievement Level Reports provide a rich source of data for guiding EML at the local program level. Each report provides information about the accomplishments of the groups of children at the class, center, and program level with respect the selected achievement levels. The reports provide important information about program strengths in reaching the achievement levels that have been set as well as those areas where additional intervention or planning will be beneficial.

Suggestion 1: *Get a Head Start with last year's data…Begin by reviewing your previous year's achievement level data for hints of what's to come.*

● Your Achievement Level Reports for the previous year will help you answer several questions at the agency level. For example, were the achievement levels meaningful in helping to set goals and evaluate their attainment? Do we need to change the names of the levels or redefine them? Did the cut-offs for each level help us to derive meaning from our data? Do we need to change the cut-offs?

Suggestion 2: *Use the data to help set goals…The data from your first observation period should help you set goals for the weeks and months ahead.*

●Are this year's children starting out at about the same level as last year's children? Are they higher? Lower? Based on this information, do we need to adjust our achievement level cut-offs? What expectations do we have for learning in the months ahead? For example, would we like to see the children move from a "beginning" to an "intermediate" level, from an "approaches goal " to a "meets goal" level?

Suggestion 3: *Link program achievement level data to planning….Use your data to make plans at the center and class level.*

● How is each center and class performing in relation to the achievement levels? What kinds of capabilities require additional focus to promote progress toward the next achievement level? Are there additional training opportunities that would help teachers in goal setting and planning to reach these levels? How can I use the detailed information on the ***Development Profile*** and ***Milestone*** Reports in goal setting and planning to reach the next achievement level?

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III: ORDERED DEVELOPMENT SUMMARIES

Ability and Variability – EML Essentials

Knowledge about ability in an area of development and variations in ability at the class, center, and agency level can be used throughout the EML process for goal setting, planning, and the documentation of outcomes. By generating an ability score (i.e., the Developmental Level Score) Galileo makes it possible to infer the kinds of things that a child or a group of children will be capable of doing based on what has already been accomplished. The result is a substantial increase in the amount of information available about learning and reduced time requirements in order to obtain this information. By examining variability in ability across classes and centers, administrators can begin to identify those classes and centers that might benefit from additional assistance (e.g., training, material resources, revisions of lesson plans and individualization plans). Keep in mind that it is essential to not only look at variability, but also to identify and understand the influence those factors that might be associated with variability. For example, classes with lower developmental levels scores may be comprised of a disproportionate number of younger children or children with special needs. On the other hand, classes with higher developmental levels scores may have been in operation for a longer period of time, or perhaps the attendance rate in these classes is higher than in other classes. Information gleaned from any number of data collection and management tools in a program can provide important information for understanding, and therefore addressing the issue of variability.

●*The Ordered Development Summary Report*

This report lists all the centers in an agency and all the classes in a center **in the order of their Developmental Level (i.e., ability) Score** for a particular developmental area (e.g., Social and Emotional Development). Ordering is arranged from lowest to highest Developmental Level Score. These reports help administrators identify class and center variability in children's performance in a particular area of development. For example, an administrative team may wish to look at variability in Social and Emotional Development among centers or classrooms in the in the agency. Variability information will help the team determine which centers/classrooms are doing well, and which ones might need additional help. The reports also help administrators set Developmental Level goals for each center/classroom. This information along with the "details" about children's capabilities provided through the *Development Profiles* can be used to set goals, identify learning opportunities and make plans to promote learning.

Development Summary by Class

Ordered Center Development Summary for Center 1

Observation Date 11/30/2000

Scale Ages 3-5: Social Development - R

Class	Developmental Level
Class 1	458
Class 2	463
Class 3	475
Class 4	489
Class 5	497
Class 6	499
Class 7	522
Class 8	527
Class 9	548
Class 10	566

Current Active Filters

Age 5 Years 0 Months To 7 Years 0 Months

Gender Male

Primary Language	Ethnicity	Special Needs	Program Type	Financial Need
English	African American	None	None	None
Japanese	Hispanic	None		
Spanish	Indian			
	Morocan			
	Multi-racial			
	Native American			

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ABILITY AND VARIABILITY PROVIDE ANSWERS TO ADMINISTRATIVE QUESTIONS…

The major benefit of Galileo for administrators and policy makers is that it does measure ability in terms of a child's position in an ordered and validated developmental progression. As a result, three important EML administrative questions can be answered with the Developmental Level Score provided through the *Ordered Development Summary Report:*:

1. What is the Status of Each Classroom and Center in Promoting Children's Learning?

When it comes to planning learning opportunities to promote development it is rarely, if ever the case, that one set of goals will meet the needs of all of the children, centers or classrooms in an agency. Just as there will be individual differences in children's learning, there is also variability in performance between classes and perhaps between centers. The *Ordered Development Summary Reports* provide information on class and center variability that can be used in program self-assessment and program improvement activities. For example, if an administrator wanted to determine performance variability in Language and Literacy among centers in the agency, s/he might wish to run an *Ordered Development Summary Report* for the classes in each center. The report would list all of the classes in the center ordered by the average Language and Literacy Developmental Level Score for each class.

2. What Goals Should We Set Next?

Information about the variability in developmental levels between classes can be evaluated in the context of those factors that might be creating this variation. Class size, average age of the children, attendance rates, level of teacher skill, curriculum, lesson plans, individualization plans, goal setting, are examples of those factors which may be contributing to the variability. As these factors are identified, goals setting may begin. Along with learning goals for the children, other goals might turn out to be increasing attendance rates, providing additional training for teachers, or including new materials in interest centers.

3. How Can We Ensure that Everyone is Moving Forward?

The Developmental Level Score in Galileo indicates position on a path of development with respect to the capabilities assessed by any particular scale. The *Ordered Development Summary* can be used to identify "outliers", which may require special attention. For example, suppose that most of the classes represented in the report had developmental level averages of 520 or more, but two classes had levels of less than 450. The administrator who ran the report would probably want to determine as far as possible the basis for the discrepancy. Further investigation might lead to the formation of special goals and plans just for those classes.

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IV: PROGRESS REPORTS
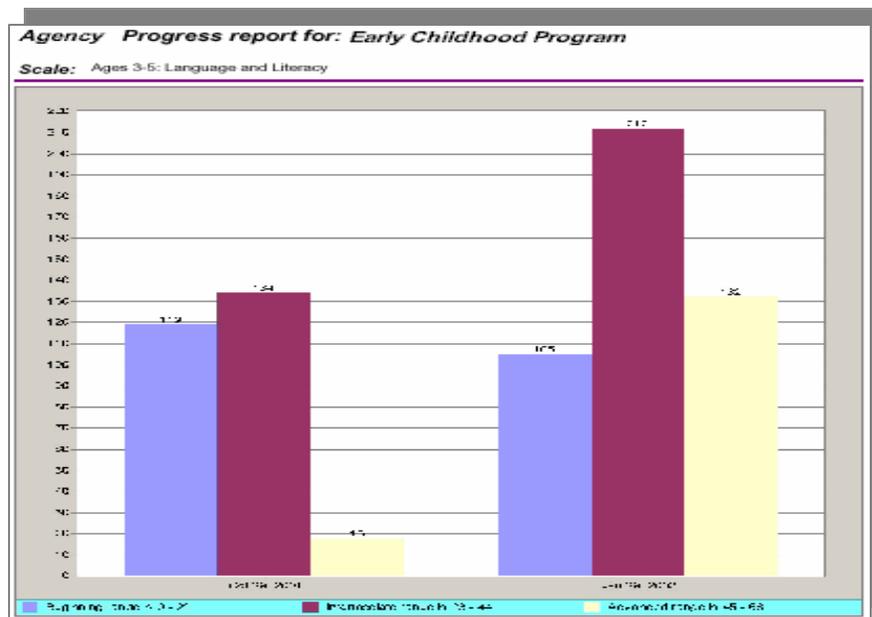
Look How Far We've Come…

Documentation of children's progress benefits all the stakeholders in a learning community. For example, progress information helps administrators to evaluate the extent to which educational plans are working and agreed upon goals are being achieved. Progress information helps to ensure that classroom and centers are meeting the needs of children through the provision of goal-directed learning opportunities. Progress information provides a way to inform policy-makers that state and/or federal legislated child outcomes are being met. Progress information conveys important news about children's accomplishments to families and community.

Progress information provided through Galileo Progress Reports makes it possible for administrators and their teams carry out three essential EML activities:

1. To find out how much learning has taken place over a period of time.
2. To determine if agreed upon goals were achieved within a period of time.
3. To modify plans accordingly to achieve agreed upon goals.

● *The Progress Report*

This report shows the **number of children who are at different achievement levels** (e.g., beginning, intermediate, advanced) at successive points in time (e.g., fall, winter, spring). This report can be produced for any Galileo Scale (e.g., Nature & Science, Language and Literacy, Approaches to Learning, etc.) For example, suppose that an administrator wanted to show progress in Language and Literacy from fall to spring. To do this the administrator would select a fall start date and a spring end date for the report. The report would display a bar graph showing the number of children at different achievement levels in the fall and the number of children at those levels in the spring. As with the *Achievement Report*, the administrator may use the default levels provided with Galileo or set their own using the guidelines provided in the section on "Setting Achievement Levels."

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PROGRESS DATA FOR ONGOING SELF-ASSESSMENT AND PLANNING FOR THE FUTURE…

The evaluation of progress toward educational goals is at one and the same time the end of the effort to achieve goals that support the developmental needs of children and the beginning of a new effort to promote children's future learning. *Progress Reports*, for example, may be used to provide parents and other stakeholders with information regarding children's past accomplishments. Reports of this kind document the learning that has occurred in the program and in so doing may afford assurance that children have benefited appropriately from their learning experiences in the program. At the same time, *Progress Reports* along and other evaluation information may serve as a foundation for future planning to promote children's learning.

Suggestion 1: *Get a head start with last year's data…Begin by reviewing your previous year's progress data for hints of what's to come.*

● Your Progress Reports for the previous year will help you answer several questions related to planning for this year's children. Because the Progress Report can indicate what children have accomplished at the end of a program year, this data is often useful in determining what a new cohort of children will be likely to be able to accomplish during the current program year*.* You may wish to ask yourself what kinds of goals should we set based on our experiences during the past year? In which areas of learning were we successful? Which areas of learning require additional focus and revisions in planning? Are there any particular classrooms or centers where we could do a better job in promoting learning over the course of the year?

Suggestion 2: *Use your Progress Reports to Communicate to Various Audiences.*

● Progress Reports can be used to communicate to a variety of audiences for a variety of purposes. For example, the preparation for the transition to school is an important area of focus for early childhood programs. Moreover, the effectiveness of the transition is enhanced when schools are aware of children's accomplishments during the preschool years. One way to make schools aware of children's learning is to provide them with reports of what children have learned in preschool. The Progress Report can provide schools with a broad picture of "this year's" children as they prepare for the transition to school. You may wish to ask yourself how you will use the information from the report to communicate to schools? What other supplemental information would be important to share with schools? Have we achieved the progress that we set out to achieve? What does our Progress Report tell us about our goals for meeting or exceeding local, state, and federal standards? How can we use the class and center level Progress Reports to work with teachers and other staff to improve the delivery of educational services in our program?

V: DEVELOPMENT SUMMARY REPORTS

Taking Stock…Let's Count the Ways

EML makes it possible for administrators to take stock of the program's accomplishments not only at the end of the year, but throughout the year when information has it's highest value for use in ongoing decision-making and continuous program improvement. Of course, performance goals are often a major focus of the "taking stock" evaluations conducted throughout and at the end of a program year. There are many reports in Online Reporter that can be used for this purpose. For example, *the Development Profile* and *Milestone Report* will show the specific capabilities that children have acquired at a given point in time. The *Achievement Level Report* will show the number of children that have reached a specific achievement level at a particular point in time. The *Progress Report* will show changes in ability occurring between two points in time. Another report, the *Development Summary* provides the path-referenced Developmental Level Score along with a series of normative scores summarizing children's accomplishments in an area of development.

●*The Development Summary Report*

This report gives a series of four scores that summarize a child's development. Three of the scores are norm-referenced: the Percentile Rank, the Normalized Standard Score, and the Normal Curve Equivalent Score. One of the scores is a path-referenced score. This is the Developmental Level Score. As discussed previously, this score indicates an individual's or group's position on a path of development comprised of a series of empirically ordered capabilities outlining a developmental progression for a given developmental area. When we know a child's or group's ability as summarized by the Developmental Level Score, we know the kinds of things that have been learned and the things that the child or group is ready to learn now and in the future. This information provides the basis for planning appropriately challenging learning opportunities. The three norm-referenced scores provide information about the position of a class, center, or agency in a norm group.   In general, knowing the position in a norm group may be helpful getting a sense of where the child or group stands relative to the norm group.

Agency Level

Agency Development Summary for Early Childhood Program

Observation Date 05/15/2001

	Developmental Level	Percentile	Standard Score	Normal Curve Equivalent
AGES 3-5: SOCIAL DEVELOPMENT	557	0.79	1.12	73.49

Center Level

Center Development Summary for Early Childhood Center

Observation Date 05/15/2001

	Developmental Level	Percentile	Standard Score	Normal Curve Equivalent
AGES 3-5: SOCIAL DEVELOPMENT -	557	0.82	1.18	74.81

Using the Development Summary Report for EML

The Path-Referenced Score – A Measure of Ability

As discussed previously, the Developmental Level Score is highly beneficial in documenting program outcomes and in planning learning opportunities because progress is measured in terms of change in position on a developmental ability scale. This information can then be used by administrators, teachers and parents to plan learning opportunities to promote development. The Development Summary Report provides the same Developmental Level Score for an area of learning that appears on the Ordered Development Summaries. Please refer to the sections on Ordered Development Summaries for guidance in using this score for EML.

The Norm -Referenced Score – A Measure of Comparison

Within the norm-referenced perspective, ability refers to position in a norm group. Norm-referenced scores may be useful in those instances in which a management decision is informed by knowledge of where the child, class, or center stands in a norm group. For example, knowing the position of the child in the norm group may be helpful in arriving at a decision as to whether or not to refer the child for diagnostic testing. In some cases, norm-referenced scores may be used to assist in planning learning opportunities. For example, a teacher may wish to know the extent to which a child has made progress relative to his or her peers..

Percentile.   A percentile refers to the how many people out of a hundred would generally have that score or a lower score on a particular measure. For example, a woman who is six feet tall would likely be around the 95th percentile for height as compared to other women in her age group, meaning that she would be as tall or taller than 95 percent of the women in her age group. The important things to keep in mind are what the particular measure is, and who the comparison group is. For the scales in Galileo, the comparison group is other children in the same age range in the standardization sample. For example, a 4-year-old who has a percentile rank of 24 on Language & Literacy performed as well or better than 24 percent of the children in the standardization sample.

Normalized Standard Score or Z Score. The normalized standard score measures ability in terms of standard deviations from the mean (average) score in a normal (bell-shaped) distribution. The standard deviation is a measure of variability in a distribution of scores. Standard scores have a mean of zero. Scores above zero are above average. Scores below zero are below average. A score of plus one is one standard deviation above the mean. A score of minus one is one standard deviation below the mean. Scores between plus one and minus one include approximately 68 percent of the scores in the normal distribution. Scores between plus two and minus two include approximately 95 percent of the scores in a normal distribution. One important benefit of the standard score is that it makes it possible to compare scores from different assessments in terms of a common scale. For example, suppose that a child receives a standard score of plus one in literacy and a standard score of plus two in math. We know that the child has achieved a score that is one standard deviation higher in math than the score the child attained in literacy.

Normal Curve Equivalent. The Normal Curve Equivalent is another type of normalized standard score with a mean of 50 and a standard deviation of 21.06. The mean of 50 and unusual value of the standard deviation produce scores that range from 1 to 99. Thus, normal curve equivalent scores look like percentile ranks. The intent is to make score interpretation easy by providing a score that is similar to a percentile rank. However, normal curve equivalent scores are not percentile ranks. Rather, they specify the position of the individual in the norm group reflected in the standardization sample when the distribution of scores in the sample is assumed to be normal.

CONCLUDING THOUGHTS

The new rapid availability of information to guide educational policies and administrative decision-making provides exciting new opportunities for increasing the efficiency and effectiveness of educational efforts to promote learning. Educators with access to data aggregation at multiple levels, filtering capabilities to assess patterns of progress, and both norm-referenced and path-referenced scores, have tools for continuous program improvement. Galileo Online Reporter provides purposeful information needed to achieve valued learning goals.