

Head Start Family and Child Experiences Survey

FACES 2014

SELF-GUIDED TRAINING

Module 3

Data Access and Resources

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Module Objectives

- **Provide researchers with a general overview of the Head Start Family and Child Experiences Survey (FACES 2014) Core and Plus study data files**
 - **Provide information about each of the five FACES 2014 data files, their contents, structure and the conventions used to name and label variables and to identify missing data**
 - **Introduce researchers to the benefits of using constructed/ derived variables**
 - **Introduce researchers to the different types of scores that were derived from the child assessment data (direct and indirect assessments) and when to use each**
 - **Familiarize researchers with the different resources that are available to them and steps required to access the FACES 2014 data**
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The overall goal of this module is to provide all data users, regardless of their level of expertise and experience, with an overview of the FACES 2014 data files and the contents of each. Data users will learn about each of the five FACES 2014 data files – three Core study and two Plus study files.

The module also introduces the constructed variables that are available on these files, such as classroom scores from the CLASS and ECERS-R, and the different types of scores derived from the direct and indirect child assessments. It identifies resources that are available to assist users in working with the data and describes the steps that are required to obtain access to FACES 2014 data from *Research Connections*.

Module 3 Topics

- **Data file structure and conventions**
 - Description of the five FACES 2014 data files and their contents
 - Data file structure and conventions
 - **Constructed/derived variables and assessment scores**
 - Assessment scores
 - Types of constructed/derived variables
 - **Data user resources**
 - User's Manual
 - Survey instruments
 - *Research Connections'* variable [search function](#)
 - **Access to [FACES 2014 data](#)**
 - Definition of restricted-use data
 - Steps and permissions required to obtain access to these data
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The four topics included in Module 3 and a brief outline for each are listed on this slide.

See introduction for instructions on downloading the User's Manual.

Topic 3.1

Data File Structure and Conventions

FACES 2014 Data Files

- **Data are organized into five separate files**
 - **Three Core study files**
 - Center/Program
 - Classroom/Teacher
 - Child
 - **Two Family Engagement Plus study files**
 - Parent interview
 - Family service staff interview
-

FACES 2014 data are organized into five separate data files. There are three Core study files, one for center/program data, one for classroom/teacher data and one for child data (including parent survey data). In addition, the data collected through the Family Engagement Plus study parent and family service staff interviews are stored on two separate files.

General Contents of Each of the Five Data Files

- **A set of identifiers or IDs**
 - **Instrument flags**
 - **Item-level data from one or more of the study instruments**
 - **Composite/derived variables (and scores)**
 - **One or more sampling weights**
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Each of the files contains a set of identifiers or ID variables that uniquely identify each case on the file (for example, each sampled child, each Head Start teacher and classroom). There is also a set of flags indicating whether there is a completed instrument for the case from each of the data sources.

The files contain item-level data from one or more of the study instruments. For example, the child file contains individual responses to the items on the fall and spring Core parent survey, and the center/program file includes responses to the items on the program director and center director surveys. Each file also includes a set of constructed/derived variables and scores that were developed from responses to questions asked in the appropriate surveys and interviews. For example, the classroom/teacher file includes all classroom/teacher constructed/derived variables (including classroom observation scores).

The child file is unique in that it includes not only assessment scores derived from the direct and indirect assessments, but also the constructed/derived variables from all Core data sources (parent surveys, teacher surveys, classroom observations, and center director surveys).

Each file contains the weight variables and the stratification and primary sampling unit (PSU) variables for the level of analysis required to calculate design-based standard errors using the data on the file. The number of weights on the files varies. Design-based standard errors and sampling weights are discussed in Module 4.

Finally, given that some of the instruments were only administered in 60 programs with child-level data (for example, parent surveys and child assessments), there are indicators in the program/center and classroom/teacher files that identify which programs have the child-level data and which do not.

Data File Content: Core Study Files

Source Instrument	Data File		
	Center/ Program (n=347)	Classroom/ Teacher (n=691)	Child (n=2,462)
Child assessment			X
Teacher child report (TCR)			X
Parent survey (including Family Engagement Supplement)			X
Head Start teacher survey		X	C
Classroom observation		X	C
Program director Survey	X		
Center director Survey	X		C

X = Item responses and constructed/derived variables
 C = Constructed/derived variables only

This table summarizes the content of each of the three Core study data files. For each file, it shows the number of records (or cases), and identifies the source(s) of data found on the file. It also indicates whether the file includes both item-level data and constructed/derived variables using the source data (X), or only the constructed/derived variables (C). For example, the center/program contains item responses to the questions on the center and program director surveys, constructed/derived variables created from the center director survey and program-level aggregates of scores from classroom observations.

As noted earlier, the child file includes both item-level data and constructed/derived variables from all data sources. Because many of the measures used in the child assessments and classroom observations are copyright protected, only a limited amount of item-level data from these instruments is included.

The center/program file contains a record for each of the 347 centers that were eligible and sampled in fall 2014 or spring 2015. The classroom/teacher file contains a record for each of the 667 classrooms that were sampled and eligible for the spring 2015 data collection. This includes classrooms in the 60 programs with child-level data collection and classrooms in the 116 programs with no child-level data collection. The file contains another 24 classrooms that were not part of the classroom sample, but that children in the study moved to after sampling. The child file includes a record for each of the 2,462 eligible and consented children from the 60 programs with child-level data, regardless of whether there are data from the child assessment, TCR, or parent survey in fall 2014 or spring 2015.

Data File Content: Plus Study Files

- **Each file contains a set of identifiers and sampling weights**
 - **Family Engagement Parent File (n=313)**
 - Family Engagement parent interview items and responses
 - Family Engagement parent interview constructed/derived variables
 - **Family Engagement Family Services Staff (FSS) File (n=145)**
 - Family Engagement FSS interview items and responses
 - Family Engagement FSS interview constructed/derived variables
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The two Family Engagement files each contains a set of identifiers or ID variables that uniquely identify each case on the file (for example, sampled child, family service staff and Head Start program), sampling weights and item-level survey data from the appropriate interview. Each file also includes a set of constructed/derived variables from the Family Engagement interviews, which are described in a later slide.

The parent file has one record for each of the 313 parents who completed the Family Engagement interview as well as either the fall or spring Core parent survey. The FSS file has one record for each of the 145 completed FSS interviews.

Order of Variables on FACES Data Files

- **Identifiers**
 - **Constructed/derived variables**
 - Data flags
 - Sampling weights
 - Stratification and primary sampling unit (PSU)
 - Instrument-specific constructed/derived variables
 - **Item-level data from appropriate surveys or interviews**
-

The structure of each of the FACES 2014 files – Core study and Plus study files - is similar and begins with a set of identifier variables, followed by a set of flags indicating whether or not there is a completed instrument for the case from each relevant data source (for example, on the Core child file, there are flags indicating whether each child has a completed parent survey in fall 2014 and spring 2015), weight variables and the stratification and primary sampling unit (PSU) variables for the level of analysis required to calculate design-based standard errors, constructed/derived variables (when such variables were created), and individual item-level data from appropriate surveys or interviews.

Redacted Data

- **Responses to items in the direct child assessments**
 - **Responses to items in the Teacher Child Report that were drawn from copyrighted instruments and scales**
 - **Individual item scores from the CLASS and ECERS-R, Short Version**
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As noted before, certain data that were collected as part of FACES 2014 are not included on the data files according to agreements with measure developers and publishers. FACES 2014 used several copyrighted instruments or scales (these include the direct child assessments, classroom observations, and indirect assessment of social skills and learning behaviors) and agreements with instrument developers and publishers sometimes did not allow individual items and item responses to be included on the data files. In these cases, only the scores derived from the individual responses are included. Those scores would be found within the “constructed/derived variables” portion of the data file: See User’s Manual for more information (Appendix J, pgs. 72-78).

Listed on this slide are the types of data that have been redacted from the data files that are available at *Research Connections*. Copyright protected items that have been redacted in the Teacher Child Report form are found in Appendix D of the User's Manual.

Appendix D does not include the items administered to children in the direct child assessments nor does it include the FACES 2014 classroom observation protocol forms. However, chapters III and IV of the User's Manual includes descriptions of the measures used in the child assessments and classroom observations and their administration. In addition, FACES uses mostly well known assessments and observation protocols, and information on these is widely available.

FACES 2014 Follows a Set of Data File Conventions

- **FACES 2014 follows certain conventions when**
 - naming and labeling variables
 - Assigning missing variable codes
 - **Many of the same conventions were used in prior rounds of FACES**
 - **Each of the conventions is designed to aid researchers who are working with**
 - FACES 2014 data alone
 - FACES 2014 data in combination with data from earlier FACES cohorts
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FACES 2014 follows a set of conventions when naming and labeling variables and assigning missing value codes. Many were used in prior rounds of FACES. They are designed to aid researchers who are working with the data from FACES 2014 alone or in combination with data from earlier FACES cohorts such as FACES 2006 and FACES 2009.

The next set of slides provides more information on each of these conventions.

Data File Conventions-Variable Names

- **Names for most variables use a standard set of prefixes**
 - **First character in the name identifies the source instrument**
 - **Second character identifies the data collection wave (fall 2014 and spring 2015)**
 - **Remaining characters in the names use**
 - **Item numbers in the source survey or interview instrument (e.g., P1D01) or**
 - **Mnemonics for constructed/derived variables (e.g., P1HHSIZE)**
 - **Exceptions—Identifiers and Sampling Weights**
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Most FACES 2014 variable names use a standard set of prefixes. The first character represents the source instrument such as the child assessment, parent survey or FSS interview. The second character in the prefix represents the wave in which the information was collected (1=Fall 2014 and 2=Spring 2015). You can use this to identify the source and data collection wave for each of the variables in the data files. For example, variable names beginning with P1 and O2 tells you that the data comes from the fall 2014 parent survey and the spring classroom observation, respectively.

For survey or interview items, the rest of the variable name identifies the questionnaire or interview item number in the source instrument. For example, P1D01 is based on item D1 in the fall parent survey which asks how often someone in the family reads to the child. In the case of constructed/derived variables, it can be a shortened description of the construct represented by the variable. For example, P1HHSIZE is number of people in the household and is derived from responses in the fall 2014 parent survey.

In general, all constructed/derived variables created from a given source use the same prefix as the source. Some such variables, however, combined information across data collection points and/or several sources and are not associated with any prefixes. For example, P1RMAGE for mother's age uses information from the first completed parent survey (A majority of parent surveys were completed for the first time in fall 2014, but some were first answered in spring 2015). CHGENDER for child gender is created from information in the sample management system and the parent survey.

The FACES 2014 instruments contain many multipart questions. For example, the household information section in the parent survey asks the same set of questions for each household member. The conventions used to represent these multipart questions are described in chapter VI of the User's Manual (See Chapter IV, Section A.2, pg. 17).

A few exceptions that do not follow these conventions include identifiers (such as CHILID) or sampling weights (such as PRA1WT that is used when analyzing data from the Fall 2014 parent survey in combination with Teacher Child Report *and* child assessment data).

Data File Conventions-Variable Prefix

Instrument	Source Code (1 st digit)	
	FACES 2014, 2009 & 2006	FACES 2003 or earlier
Core child assessment	A	A
Core teacher child report	R	T
Core parent survey	P	P
Core Head Start teacher survey	T	L, F, H
Core classroom observation	O	O
Core center director survey	C	C
Core program director survey	D	--
Family Engagement family services staff interview	F	--
Family Engagement parent interview	PE	--

This slide lists the codes used as the first character in the FACES 2014 variable names. The source codes for FACES 2014 are the same as FACES 2009 and FACES 2006 with the exception of the Family Engagement interviews, which were not conducted before FACES 2014. Earlier FACES cohorts also used source codes in their variable names. The codes used in 2003 and before are listed in the last column of the table.

Data File Conventions-Variable Labels

- **Length of variable labels is limited**
 - **For questions/items in the surveys and interviews**
 - the first two characters in the variable name are used at the beginning of each label (for example P1, A2)
 - After the first two characters, a colon is followed by a general statement of the question/item content. For example, the label for P1A08 is “P1: Child participated in Early Head Start.”
 - **Labels for constructed/derived variables and scores include a general description of the construct and/or score type**
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This slide summarizes the conventions used when creating variable labels. The length of the labels is limited to ensure that they are compatible with most available software packages. As outlined in the slide, the approach used when creating labels for variables containing responses to questions/items in the survey and interview instruments is not the same as the approach used when creating labels for constructed/derived variables and scores.

Sources of Missing Data

- **Unit nonresponse (an entire instrument is missing for the case)**
 - **Item nonresponse (missing data on items within a given instrument)**
 - **Legitimate skips**
 - **Review survey instruments to identify such skips**
 - **How handled can affect findings**
 - **Approach should align with research question**
-

There are three sources of missing data in FACES: unit nonresponse, item nonresponse, and legitimate skips. Unit nonresponse occurs when an entire instrument is missing for a case. For example, the parent of a sampled child did not complete a parent survey in the fall or there is no completed interview for a family services worker who was sampled for the Family Engagement study. Unit nonresponse in FACES 2014 data is addressed through the application of the sampling weights, which are discussed in Module 4.

Item nonresponse occurs when there are missing data on individual items that should have been responded to within a given instrument. Respondents may refuse to answer a question, state that they do not know the answer to the question, or they may simply skip the question. FACES uses three codes to distinguish these three reasons for missing item data (Refused, Don't Know, and Not Ascertained).

With one exception, FACES does not impute for item level missing data. The one exception is household income that is collected in the parent survey. A data flag identifies those cases for whom household income has been imputed. The methods used to impute household income in the fall and spring are described in Chapter VII of the User's Manual (starts on pg. 209).

There are also items that are only answered based on a prior response or condition. For example, parents may be asked for more detailed information on their child's ethnicity (such as whether child is Mexican, Puerto Rican or Cuban) if they first indicate that their child is of Hispanic or Latino origin. FACES assigns a different code for such data to distinguish them from other types of missing data.

You should determine how to handle data involving legitimate skips. Begin by reviewing the survey instruments to identify legitimate skips. How you handle these can affect your findings. For example, if you are interested in the percentage of all children whose parent usually speaks to them in Spanish at home, and you simply calculate the percentage from responses to question D10 in the parent survey, you will find that a large majority of children's parents report speaking to them in Spanish. However, to answer this question correctly you must take into consideration that those parents who reported only speaking English in the home (Item D7 in the parent survey) skipped item D10. If we account for that legitimate skip and include those parents in the denominator, a much smaller percentage of children's parents report Spanish as their first language.

How you handle missing data should always be aligned with your research question.

Data File Conventions-Missing Data Codes

SPSS Code	SAS Code	Description
-1	.N	Not applicable, including legitimate skips
-7	.R	Refused (a type of item nonresponse)
-8	.D	Don't Know (a type of item nonresponse)
-9	.M	Not Ascertained (a type of item nonresponse), items skipped but should have been answered
SYSMIS	.	System missing (unit nonresponse)

FACES 2014 data files are available in SPSS and SAS. Listed here are the established conventions for missing data codes in each file type. The codes listed in the table identify data that are missing because of legitimate skips, item nonresponse (missing data on items within a given instrument for one of three reasons (refusals, don't know, and not ascertained) and unit nonresponse (an entire instrument is missing for the case). Cases are assigned a SYSMIS or "." when an entire instrument is missing. For example, if a parent survey was completed in fall 2014, but a TCR was not completed for the same sampled child, all of the fall 2014 TCR data would be set to SYSMIS or "." for that child).

File Respondent Source Identifiers

Level	ID Name	Description
Child	ChildID	6-digit number containing embedded information on the child's family.
Head Start Classroom	CLSn_ID CLS_ID	5-digit number identifying a Head Start classroom
Head Start Teacher	Tn_ID	7-digit numbers containing embedded information on classes taught by the teacher
Head Start Center	C2_ID	5-digit number identifying a Head Start center
Head Start Program	D2_ID	4-digit number identifying the Head Start program in which the center is located

n=wave of data collection: 1=fall 2014 and 2=spring 2015

Each sampled program, center, classroom and child has a unique identifier. The lead teacher assigned to a classroom who is asked to complete the Head Start teacher survey and TCR also has a unique ID. The ID numbers are used in the data files to identify respondents for the different study instruments.

The child-level data file contains an identification number for each child and ID numbers for his/her Head Start classroom, teacher, center and program at the fall 2014 and spring 2015 data collection points. Because children may change classrooms and teachers between the fall and spring of the program year, they may have different values for the fall and spring classroom and teacher IDs, but in a majority of the cases, the values will be the same. The same identifiers are used on the separate data files for the classroom/teacher- and center/program-level data.

Module 4 includes a discussion of how to use the IDs to merge data from the different FACES 2014 files.

Adjustments to Selected Parent Survey Variables

- **A small set of questions in the parent survey are asked only during the initial survey with the family**
 - **If a parent survey was not completed in the fall, these questions were asked in the spring**
 - **For those cases with no fall data, spring data were merged with data for cases who completed a fall survey**
 - **Spring 2015 items were dropped from the data file**
 - **Prefix for fall items were changed from P1 to Pn**
 - **Flags included that identifies the source round for the variables**
-

The Core parent survey includes a small set of questions that are only asked during the initial survey with the child’s family. In most cases, the initial survey is completed in the fall, but for others, the first survey is completed in the spring. Included in this set are questions that collect demographic information on the child and the child’s mother and father, household income and family food security.

When constructing the Core child file, data on these items that were collected in the spring were merged with data collected in the fall. As a result, data on these items is contained in a single set of variables. The steps required to do this are outlined on the slide. For this limited set of variables, there are no fall and spring versions and the prefix for these variables has been changed to “Pn.” Flags are included with these variables indicating whether the data came from the fall or spring parent survey.

A description of this process can be found in the User’s Manual under “Data processing.” (See Chapter VI, Section 3, pgs. 174-175).

Topic 3.2

Constructed/Derived Variables and Assessment Scores

As described in chapter VII of the User's Manual, the data files contain a number of constructed/derived variables and assessment scores in addition to survey item-level data. This section introduces the constructed/derived variables and assessment scores that are found on the Core and Plus study data files. It reviews the reasons for using these variables and scores and identifies the types of variables and scores found on the files. Guidance is offered on which assessment score to use for different analyses and research questions.

Why Use Constructed/Derived Variables and Assessment Scores

- **Facilitate the use of FACES 2014 data in answering important questions about Head Start children, families, classrooms, staff and programs**
 - **Eliminates the effort, and the special software sometimes needed, to create variables on your own**
 - **Allows analysis of variables for which individual item data are not available on FACES 2014 data files**
 - **Improves comparability of findings from one analysis to another and from one round of FACES to the next**
-

There are an almost infinite number of variables and scores that could be created using the FACES 2014 data. The variables and scores on the data files were limited to those most critical for answering questions about Head Start children, families, classrooms, staff, and programs. Priority was given to variables or constructs that use data from multiple items or sources, and that require considerable effort to create. Some variables used a combination of data from survey instruments and from a proprietary survey management system (for example, children's age and gender used data from this system and data from the Core parent survey).

Special statistical methods and software are needed to develop some of the scores found on the child file (for example, item response theory [IRT] analyses for assessment scores). Even with this knowledge and software, certain key variables could not be created by users because of restrictions on sharing individual item-level data from copyright-protected measures. For the most part, variables that are simple recodes or transformations of a survey item or question are not included in the constructed/derived variable set.

Many of the constructed/derived variables and assessment scores developed for FACES 2014 were used in prior rounds, while some are new to FACES 2014. Wherever possible, variables and scores used in prior rounds of FACES were created in the same way for this latest round of the study. This helps to facilitate comparisons of findings across rounds of FACES and when users include these variables and scores in their analyses it is easier to compare findings from different articles, papers or presentations.

Core Study Constructed/Derived Variables and Scores: Child and Family

- **Child and family characteristics**
 - **Family processes and parenting**
 - **Direct and indirect child assessment scores**
-

The constructed/derived variables and scores created for the Core study fall into one of five groups, which are listed on this and the next slide. See User's Manual for more information (Chapter VII, Table VII.1, starting on pg. 219).

Examples of constructed/derived variables on children and families include:

- Child and family characteristics such as variables that tap constructs such as the race/ethnicity, age, and gender of the sampled child and his/her mother, whether it was the child's first or second year attending Head Start, mother and father education and employment, household income, family structure, and family economic risk.
- Family processes and parenting variables such as family-child activities, child care, health care access, parent depressive symptoms, food security, and household financial strain.
- The child file includes many different scores based on children's performance on the direct child assessments, assessor and teacher ratings. Scores from the direct child assessments are measures of a child's language, literacy, and math language skills, physical development and executive functioning.

Core Study Constructed/Derived Variables: Teachers, Classrooms and Programs

- **Teacher characteristics**
 - **Classroom characteristics**
 - **Program characteristics**
-

Examples of constructed/derived variables about teachers, classrooms, and programs include:

- Teacher or classroom characteristics such as variables that come from one of two sources: (1) the Head Start teacher survey and (2) the Head Start classroom observation. The variables capture key aspects of Head Start classrooms and teachers, including class size, child/teacher and child/adult ratios, different scores depicting the quality of Head Start classrooms derived from the ECERS-R and CLASS, teacher depressive symptoms, and teacher beliefs. Several variables regarding the language environment of Head Start classrooms are included (for example, languages spoken by children, teachers and other adults, and language of instruction).
- Program characteristics such as derived variables focused on teacher turnover and teacher and family language use.

Family Engagement Study Constructed/Derived Variables and Scores

- **Community services**
 - **Parent social support**
 - **Parent-teacher relationships and communication**
-

A number of constructed/derived variables and scores were developed from the Family Engagement parent interviews and supplemental items on the Core parent and teacher surveys. They measure important aspects of families' engagement with Head Start and Head Start services, and the staff who work directly with families. The variables and scores are grouped into five categories, which are listed on this and the next slide, and can be found in the User's Manual (See Chapter VII, Table VII.7, pgs. 259-265). The variables draw heavily on responses to questions from the parent-teacher and teacher versions of the Family Provider/Teacher Relationship Questionnaire, Short Form.

- Community services includes one variable that identifies the number of community or government services family members have received. This variable was derived from supplemental survey items on the spring Core parent survey.
- Parent social support includes several derived variables for the number of types of help parents receive from family members, friends and others, and whether parents find the support they receive helpful. These variables were derived from supplemental survey items on the spring Core parent survey.
- Parent-teacher relationships and communication includes a number of scale and subscale scores from responses to items on the FPTRQ, Short Form that was administered to a subset of parents and teachers as part of their Core surveys.

Family Engagement Study Constructed/Derived Variables and Scores (Con't)

- **Strengths-based practices in programs**
 - **Parent-family service staff relationships and communications**
 - **A modified approach was used to create certain scores derived from the FSS FPTRQ items**
-

- Strengths-based practices in programs includes empowerment, cultural competency, staff sensitivity-knowledge and relationship-supportiveness scores derived from responses to items from the Strengths-Based Practices Inventory in the Family Engagement study parent interview.
- Parent-family service staff relationships and communications includes a series of scores derived from the FPTQR long- and short-forms that measure parents' and family service staff's perspectives on the relationships that exist between families and programs and the nature of the communications between the two. The data used in developing these scores come from the two Family Engagement interviews.
- Due to an error in administration, eight FPTRQ items were not administered to FSS and one FPTRQ item was not administered to parents participating in the family engagement parent interviews. The omissions affect the ability to construct the following scores: FSS long-form Family-Specific Knowledge subscale scores, long-form Responsiveness subscale scores, and short-form Responsiveness subscale and Practices construct scores, as well as parent-FSS long-form Responsiveness subscale and Practices construct scores. Missing data for these items were imputed and FPTRQ FSS summary scores were created. A similar approach was not used for the one missing item in the family engagement parent interviews. More information on how these scores were created can be found in the User's Manual (See Chapter VII, Section C, starting at pg. 254).

Direct Assessment Scores: Language, Literacy and Mathematics

- **Language, Literacy and Mathematics**
 - Raw scores
 - Standardized scores
 - Standard scores (Mean=100 and s.d.=15)
 - T-scores (Mean=50 and s.d.=10)
 - **IRT-based scores or W scores**
-

Assessment scores were created using children's responses to the items on the direct child assessments of language, literacy and mathematics described in Module 2.1.

Child assessment scores in FACES include raw, standardized, and Item Response Theory scores (IRT-based scores) or W-scores. Which scores to use will depend on your research question and the type of analysis that you will be doing.

Raw scores refer to counts, averages, or the like of the individual items that a child completed. They are indicators of absolute rather than relative performance. In contrast, standardized scores allow for comparisons of an individual's performance relative to others of the same age (or grade). There are two types of standardized scores on the Core child files: standard scores and T-scores. Standard scores have a mean of 100 and a standard deviation of 15. Scores above or below the mean indicate that compared to same-age peers, the child's skills are more or less advanced, respectively. T-scores in FACES illustrate a child's performance relative to the population of Head Start children as a whole, with a mean of 50 and a standard deviation of 10.

IRT scale scores (ECLS-B math assessment) and W scores (PPVT-4, Woodcock-Johnson III and Bateria III Letter-Word, Applied Problems and Spelling) are estimates of a child's absolute performance.

There are two IRT-based scores of overall performance for the ECLS-B math items and letter-sound items. The IRT scale score is an estimate of the number of items a child would answer correctly if he/she had received all of the items in the ECLS-B preschool math assessment or all of the items in the Letter-Sounds section of the full ECLS-B battery. Math and letter-sound Theta scores, on the other hand, represent a child's mathematics (letter-sound) ability based on the items that the child actually received. Generally speaking, Theta scores are more likely to be normally distributed than scale scores, making them more appropriate for certain analytic approaches, such as multi-variate regress and analysis of variance and factor analysis. However, scale scores are more easily interpreted and may be better suited for a broader audience.

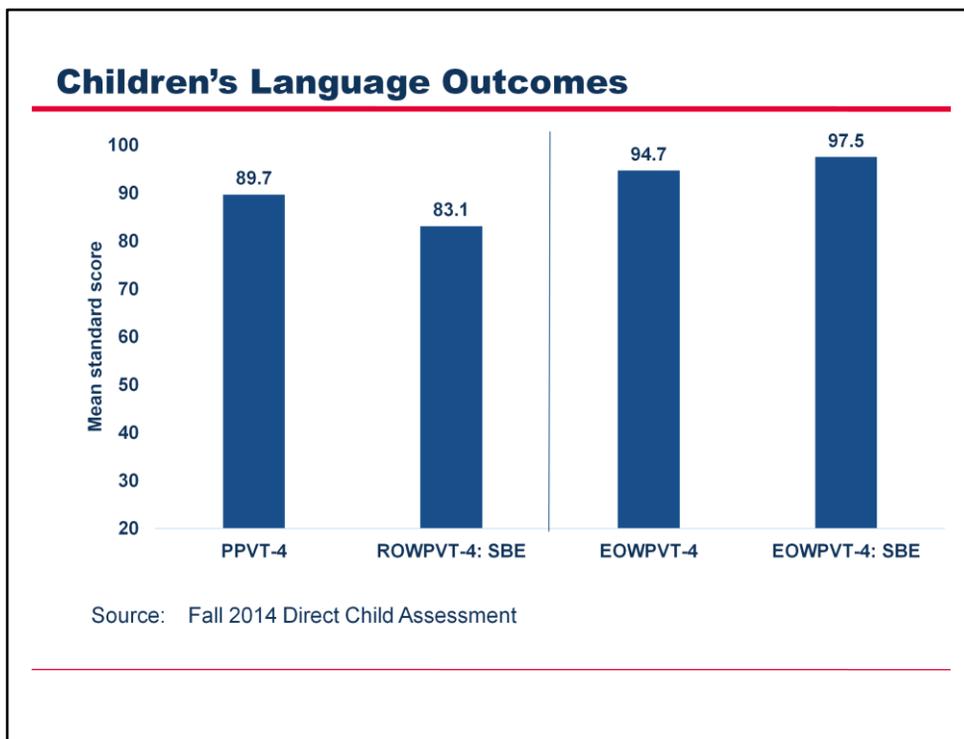
Direct Assessment Scores: Executive Functioning and Physical Development

- **Executive functioning (Pencil Tapping task)**
 - Number of times a child tapped correctly
 - Percentage of times the child tapped correctly
 - **Physical Development**
 - Child's height
 - Child's weight
 - Child's Body Mass Index (BMI)
-

In addition to the language, literacy and math scores, two sets of scores were created based on children's responses to the Pencil Tapping task and using the measures of their height and weight.

There are two composite scores for executive functioning. One score is the number of times a child tapped correctly on the Pencil Tapping task. The second score is the percentage of times the child tapped correctly.

Children's height and weight were measured twice (and in some instances, three times). The composite height and weight scores are the average of the two with some adjustments for measurements with larger discrepancies. They are expressed in inches (height) and pounds (weight). BMI was calculated using the composite height and weight measures and the Center for Disease Control and Prevention's SAS program.

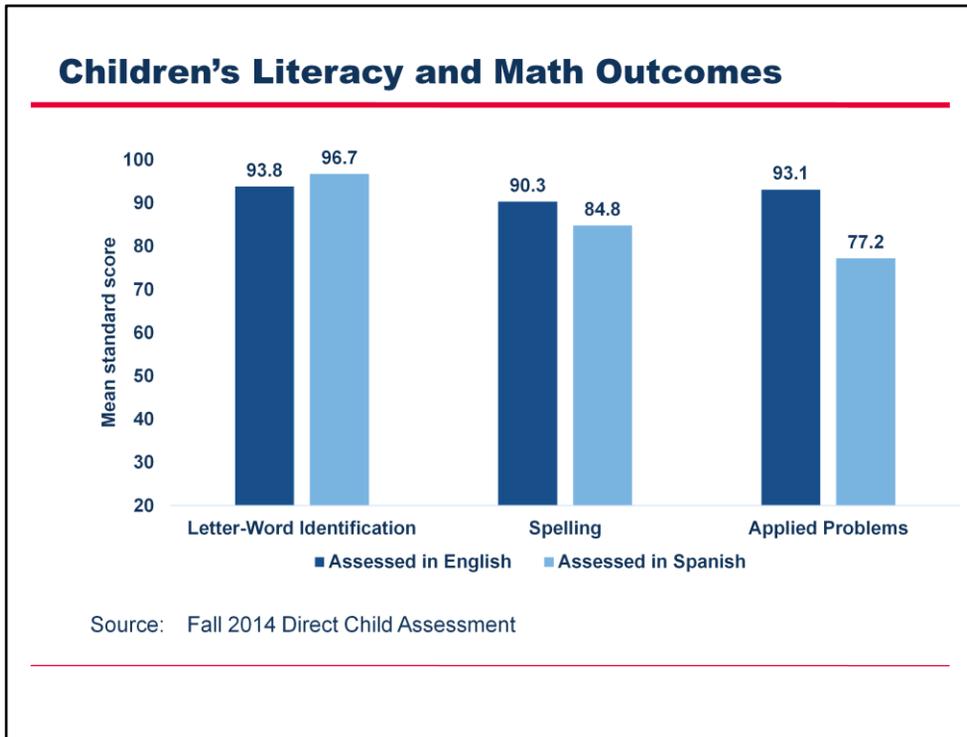


Here is an example of how one would use the standard scores, which have a mean of 100 and a standard deviation of 15. This figure shows children's scores on the vocabulary measures in fall 2014. On the left-hand side of the slide are children's scores on the English receptive vocabulary measure (PPVT-4) and on the Spanish receptive vocabulary measure (ROWPVT-4: SBE). On the right-hand side are children's scores on expressive vocabulary measures.

As was discussed in Module 2.1, all children in FACES are administered the PPVT-4, regardless of home language or performance on the language screener. In addition, children with a Spanish home language are administered the ROWPVT:SBE (receptive language) and the EOWPVT-4:SBE (expressive language), while those with an English or Other home language are administered the EOWPVT-4.

Looking first at the receptive vocabulary measures, we see that children are performing behind same-age peers (that is, below the mean of 100). They score approximately two-thirds of a standard deviation below national norms in the area of English receptive vocabulary (89.7). Meanwhile, children with a Spanish home language score more than one standard deviation below norms in the area of Spanish receptive vocabulary in the fall of the Head Start year (83.1).

In terms of their expressive vocabulary, children are performing closer to same-age peers. They score one-third of a standard deviation below norms on English expressive vocabulary (94.7) and those with a Spanish home language score near peers in the area of expressive vocabulary (97.5).



Here is another example, again using the standard scores. FACES captures information on children's letter-word knowledge, early writing skills, and early math skills. The study uses the Woodcock Johnson measures with children who pass the screener and are assessed in English and the Woodcock Munoz measures with those who do not pass the language screener and are assessed in Spanish.

Regardless of the language of assessment, Head Start children's literacy and math skills lag behind those of their same-age peers at the beginning of the program year. Children taking the assessment in English score at least one-third of a standard deviation below national norms on letter-word identification (93.8), early writing (90.3), and applied problems (93.1). Children taking the assessment in Spanish score two-thirds of a standard deviation below national norms on letter-word knowledge (96.7), and more than one standard deviation below norms on early writing (84.8) and applied problems (77.2).

Indirect Assessment Scores

- **Cognitive**
 - Raw scores (teacher-report on children’s emergent literacy skills)

 - **Social-emotional**
 - Raw scores (social skills, behavior problems, approaches to learning, and Leiter-R assessor ratings)
 - Standard scores (Leiter-R assessor ratings)
-

A set of criterion or raw scores of children’s cognitive skills around emergent literacy and social-emotional development including social skills, problem behaviors, and approaches to learning were derived from responses on the Teacher Child Report. Scores capturing children’s social skills and problem behaviors are derived from several established rating scales for young children as discussed in Module 2.

Composite scores were calculated as the sum of the item responses (social skills and problem behaviors) of items and indicate the extent to which given statements reflect a child’s behavior. Similarly, teacher reports of children’s emergent literacy were added with sum scores providing a count of a child’s early literacy skills. Teacher-reported scores on approaches to learning were calculated as the mean of items and indicated the frequency with which given statements reflect a child’s behavior.

Assessor-reported scores of children’s behavior during the direct assessment included both raw and standard scores derived from the Leiter–R Examiner Rating Scale. The standard scores have a mean of 100 and a standard deviation of 15, indicating performance relative to same-age peers.

Use the Score or Scores that Best Answer Your Research Question

- **IRT scale scores and to a lesser extent raw scores are useful for answering questions about the children’s skills have and gains in these over time**
 - What skills do Head Start children demonstrate in the fall and spring of the program year?
 - What gains do they make in these skills over the program year?
 - **IRT scale scores are also used**
 - To answer questions about how the skills of groups of children compare to one another at one point in time or over time
 - To explore the associations between multiple characteristics and one or more outcomes
-

With a variety of scores to choose from, especially scores derived from the direct language, literacy and math assessments, choosing the best score to use can be a little overwhelming. Each score offers a slightly different perspective on children’s development. The choice for the most appropriate score for analysis should be driven by the research question. Here are a few guidelines for choosing the score that is most suitable for your research question and analysis.

IRT scale scores are criterion referenced measures of absolute performance and are useful for answering the question, “What skills do Head Start children have?” IRT scale scores are also appropriate for studying gains in children’s skills over the program year. They can be used to answer the question, “How much have children learned or what gains do they make in particular domains from fall to spring of the year?”

In general, raw scores are not a very useful measure of absolute performance unless all children attempted to answer each of the questions in the assessment. Although they are perhaps the easiest to understand, they tend to underestimate performance.

IRT scale scores are also useful in identifying differences in the performance of groups of children at single points in time (for example, differences in the school readiness skills of children attending their first or second year of Head Start at the beginning of the program year). They can also be used to identify differences in the gains made by different groups of children. Finally, IRT scores provide a measure of performance that is useful in analysis of child outcomes that include multiple status variables, such as child and family demographics and family process variables.

Use the Score or Scores that Best Answer Your Research Question (Continued)

- **Standardized scores are useful for answering questions about children’s overall performance relative to that of their peers**
 - How do Head Start children’s skills in the fall or spring compare to those of their same-age peers?
 - Are Head Start children making progress in closing the “achievement gap?”
 - **Standardized scores are also used**
 - To answer questions about the size of the achievement gap for different groups of children
 - To identify whether some groups of children are making more progress than others in closing the gap
-

Standardized scores (such as standard scores and T-scores) are overall measures of performance at a point in time, and are norm referenced. Unlike measures of absolute performance such as raw scores and IRT-based scores, they do not answer the question, “What skills do Head Start children have?” Instead, they answer the question, “How does the performance of Head Start children compare with the performance of their peers?” As such, standardized scores can be used to measure whether children are closing the achievement gap and whether some groups of children are making greater progress than others in closing the gap.

Studying the Development of Children who Dual Language Learners

- **Considerations when using FACES data when research question focuses on the development of DLL children and their monolingual peers**
 - You will have certain scores for nearly all children (e.g., PPVT-4 and Pencil Tapping)
 - Other scores will be missing for large numbers of DLL children (e.g., WJ III-Word Identification and Applied Problems)
 - Spanish and English versions of WJ III are not comparable
 - Some children will have fall scores based on the Spanish version and spring scores that are based on the English version
-

When your research question focuses on the development of children who are dual language learners and how their development compares to monolingual children you have to consider other factors when deciding on which assessment scores to use. For certain skills and assessments, you have scores for nearly all children (for example, PPVT-4 and Pencil Tapping) because almost all children were administered the assessment regardless of home language or performance on the language screener. For other skills and assessments such as the WJ-III Letter-Word Identification and Applied Problems assessments, this is not true. These assessments were administered to many fewer children whose primary language was not English, especially in the fall. While there were Spanish versions of these, the English and Spanish versions are not directly comparable and have different sets of norms.

The decision to administer the English or Spanish version of the assessments to a Spanish-speaking child was evaluated in the fall and again in the Spring. Children who were assessed in English in the fall were automatically assessed in English again in the spring. However, children who were assessed in Spanish in the fall could be assessed in either English or Spanish in the spring based on their performance on the spring language screener. Because the measures in the English and Spanish version of the assessment are not directly comparable, it is not possible to estimate changes in skill levels.

See Module 2.1 for more information on the language of assessment and the different language paths through the assessment.

Topic 3.3

Data User Resources

Resources Available to Data Users

- **User's Manual**
 - Getting Started
 - Chapters I - VII
 - **Data codebooks (Appendices E-I)**
 - **Descriptions of constructed/derived variables (Appendix J)**
 - **Study instruments**
 - Survey instruments (Appendix D)
 - Copyright statements (Appendix B)
 - **Additional resources available from *Research Connections***
-

A number of resources are available to FACES data users. These resources, which are listed on this slide, are intended to provide researchers with the information they need to analyze the data from FACES 2014 accurately and to publish from this complex dataset. The following slides provide more information about each of these resources and their use.

User's Manual is Your Primary Source for Information

- **Provides an overview of the study purpose, design, data collection, and data**
 - **Major sections of the User's Manual**
 - **Getting Started**
 - **Introduction (to FACES 2014 and its design)**
 - **Sample and sampling design**
 - **Data collection instruments**
 - **Data collection procedures and response rates**
 - **Data preparation**
 - **Data file content, structure, and use – to include weights and variance estimation information**
 - **Child assessment scores and composite and derived variables**
-

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The FACES 2014 User's Manual is the primary resource for information about the study design (Core study and Family Engagement Plus study) and its execution. It also includes useful information about the organization and structure of the data files and their use. The different sampling weights and how and when to use them are described. The data files include many scores that were developed from responses to the direct child assessments and the Teacher Child Report, and variables and scores derived from responses to the survey items and classroom observations. The manual describes how each was constructed and offers guidance on which assessment score to use for different research questions.

Regardless of your experiences using FACES data or data from large-scale studies such as FACES, you should begin by reading the "Getting Started" section of the User's Manual. It provides a brief introduction to the study and the new FACES design (Core Plus study design), contrasts FACES 2014 with earlier rounds of FACES, and directs the reader where to go to find more information on some of the major technical issues researchers will confront when working with these data.

Instrument Resources are Included as Appendices to the User's Manual

- **User's Manual includes appendices with additional information about the study design, instruments and measures**
 - **Elements of the FACES design and key measures used (and child outcomes captured): FACES 1997-20014 (Appendix A)**
 - **Copyright Permissions (Appendix B)**
 - **Instrument Content Matrices (Appendix C)**
 - **Instruments (Appendix D)**
-

The User's Manual also includes six appendices that provide additional information about FACES and the data on the five data files. The first four of these (Appendices A – B) focus on the study design, and in particular its instruments and measures.

Appendix **A** describes elements of the FACES design and its key measures. It provides this information for each of the rounds of FACES that were conducted from 1997 through 2014 and is an invaluable resource for users interested in questions that involve analyzing data across two or more cohorts.

Appendix **B** contains the copyright statements that should be included in any publication of the FACES 2014 data (and prior rounds as appropriate).

Appendix **C** contains a instrument content matrix for each of the study instruments and is an easy way to identify the types of measures and constructs that are included in FACES 2014. It also indicates whether a construct or measure was included in FACES 2009 or if it is new to FACES 2014. However, while information in the content matrices provides a way to quickly identify what kinds of questions might be answered using the FACES 2014 data, researchers should look at the actual items in the study instruments and be familiar with the different standardized instruments that are used in FACES (for example, PPVT-4, Woodcock-Johnson III, CLASS).

Appendix **D** includes a copy of each of the survey and interview instruments that was used in the Core and Plus studies. Copyrighted instruments or scales (to include the direct child assessments, classroom observations, and indirect assessment of social skills and behaviors) are NOT included per agreements with the instrument/scale developers and publishers. (See Chapter III, pg. 61 of the User's Manual which details the original measures).

Data Codebooks and Constructed Variable Descriptions

- **Codebook for each data file that includes**
 - Appendices E-G in User’s Manual
 - Variable name and label
 - Data format and type
 - Descriptives (frequencies, mean, min and max)

 - **Descriptions of Constructed/Derived Variables**
 - Appendices H and I in User’s Manual
 - Variable name and label
 - Data type
 - Data collection wave
 - Description of variable
 - Specification code
-

Appendices E-G contain a codebook for each of the three Core study files: Center/program, classroom/teacher and child. For each of the variables contained in these files, the codebook lists the variable name and label, the data format and type, and includes a set of descriptive statistics. See next section for examples from codebooks.

Appendices H and I contain a code book for the two Family Engagement Plus study files: Family service staff interview and parent interview. As a reminder, the supplemental items that were added to the Core parent and teacher surveys are included in the Core study files for those surveys.

Appendix J includes detailed information about each of the constructed/derived variables and assessment scores that are listed in the tables in Chapter VII of the User's Manual (Tables VII.1 – VII.7, starting at pg. 219).

**EXAMPLE CODEBOOK
&
DESCRIPTIONS OF
CONSTRUCTED/DERIVED VARIABLES**

Example Codebook for Child-Level PUF

Name	P1RDAED			Frequency	Code and Description
Label	P1: Father's Highest Education			381	1=Less than HS Diploma
Format	Num	Type	Construct	347	2=HS Diploma or GED
Valid N	990	Mean		205	3=Voc/Tech-Assoc-Some College Degree
Minimum		Maximum		57	4=Bachelor Degree or Higher
				454	.=System Missing
				989	-1/.N=Not Applicable
				29	-9/.M=Not Ascertained

Name	P1RMAGE			Frequency	Code and Description
Label	P1: Mother's Age			2050	valid numeric value
Format	Num	Type	Construct	55	.-9/.M=Missing
Valid N	2050	Mean		357	SYSMIS/.
Minimum		Maximum			

Name	P1RMOMED			Frequency	Code and Description
Label	P1: Mother's Highest Education			530	1=Less than HS Diploma
Format	Num	Type	Construct	633	2=HS Diploma or GED
Valid N	1931	Mean		617	3=Voc/Tech-Assoc-Some College Degree
Minimum		Maximum		151	4=Bachelor Degree or Higher
				373	.=System Missing
				144	-1/.N=Not Applicable
				14	-9/.M=Not Ascertained

Example Codebook for Child-Level PUF (cont'd)

Codebook for Child-Level PUF, continued

Name	P1HHSIZE	Frequency	Code and Description
Label	P1: Household Size	1909	valid numeric value
Format	Num	Type	Construct
Valid N	1909	Mean	4.31
Minimum	2	Maximum	12

Name	P1RFAGE	Frequency	Code and Description
Label	P1: Father's Age	1877	valid numeric value
Format	Num	Type	Construct
Valid N	1877	Mean	228 -9/.M=Missing
Minimum		Maximum	357 SYSMIS/.

Name	P1DADEMP	Frequency	Code and Description
Label	P1: Father's Employment Status	566	1=Working Full Time
Format	Num	Type	Construct
Valid N	889	Mean	149 2=Working Part Time
Minimum		Maximum	75 3=Looking for Work
			99 4=Not in Labor Force
			553 .=System Missing
			989 -1/.N=Not Applicable
			31 -9/.M=Not Ascertained

Appendix G, Descriptions of Constructed/Derived Variables

Variable Name	Variable Label Measure ScoreType	Data Type
Direct child assessments		
AnPPVcat	PPVT-4 Standard Score Distribution PPVT-4 <input checked="" type="checkbox"/> Fall 2014 <input checked="" type="checkbox"/> Spring 2015	Categorical (integer)
Description:	Standard scores allow for comparisons of an individual's performance to others of the same age (or grade). These scores have a mean of 100 and a standard deviation of 15. AnPPVcat categorizes children's standard scores using standard deviation units: scores less than or equal to 70 (at least two standard deviations below norms), 71 to 85 (between one and two standard deviations below norms), 86 to 100 (within one standard deviation of norms), and greater than or equal to 100 (at or above norms).	
Specification:	Create a variable using the variable AnPPVT4S. Create categories 1) Standard Score LE 70, 2) Standard Score GT 70 AND LT 85, 3) Standard Score GE 85 AND LT 100, 4) Standard Score GE 100, and 5) NO BASAL.	
	<pre> If AnPPVT4NB = 1 then AnPPVcat =5; else if AnPPVT4S <= 70 then AnPPVcat =1; else if 70 < AnPPVT4S < 85 then AnPPVcat =2; else if 85 <= AnPPVT4S < 100 then AnPPVcat =3; else if AnPPVT4S >= 100 then AnPPVcat =4; else if AnPPVT4S=M, then AnPPVcat = .M; else if AnPPVT4NB NE 1 and AnPPVT4S=N, then AnPPVcat = .N; else if AnPPVT4S= "." then AnPPVcat = "."; </pre>	

Appendix G, Descriptions of Constructed/Derived Variables (cont'd)

AnPPVT4R	PPVT-4 Raw Score	Continuous
	PPVT-4 Raw Score <input checked="" type="checkbox"/> Fall 2014 <input checked="" type="checkbox"/> Spring 2015	
Description:	The Peabody Picture Vocabulary Test (PPVT-4) (Dunn, Dunn, and Dunn 2006) is designed to assess children's knowledge of the meaning of words by asking them to say or indicate, by pointing, which of four pictures best shows the meaning of a word that is said aloud by the assessor. PPVT raw scores are calculated as the last item in the highest set administered minus the number of errors. Raw scores can range from 0 to 228 and are an indicator of absolute rather than relative performance. This composite reflects child's raw score on the PPVT-4 assessment.	
Specification:	The ceiling rule for the PPVT-4 is that a ceiling is established if there are 8 or more errors in the item set, or the sum of correct items in the set is 4 or less. The Ceiling item number is identified as the last item in the highest ceiling item set. AnPPVT4R = the ceiling item (highest item administered) minus the number of errors. For cases that do not establish a basal, AnPPVT4R or the PPVT-4 Raw Score is the sum of the items from the lowest item administered through the last item. These cases were flagged (AnPPVTNB). For cases that were affected by an error in Blaise and did not reach ceiling (children ended assessment too early, should have been administered more items) in fall 2009, the PPVT-4 Raw Score is the sum of the items from the lowest item administered through the last item.	
AnPPVT4S	PPVT-4 Standard Score	Continuous
	PPVT-4 Standard <input checked="" type="checkbox"/> Fall 2014 <input checked="" type="checkbox"/> Spring 2015	
Description:	The Peabody Picture Vocabulary Test (PPVT-4) (Dunn, Dunn, and Dunn 2006) is designed to assess children's knowledge of the meaning of words by asking them to say or indicate, by pointing, which of four pictures best shows the meaning of a word that is said aloud by the assessor. The PPVT was normed on a nationally representative sample of children and adults of various ages so that raw scores can be converted to age-adjusted, standardized scores with a mean of 100 and a standard deviation of 15. Standard scores can range from 20 to 160. PPVT standard scores indicate how an individual's score compares to the average score of people of the same age. This composite reflects children's standard score on the PPVT-4 assessment.	
Specification:	AnPPVT4S is constructed using a look-up table and is based on the child's age and raw score.	

Research Connections Resources

- **Variable Search Tool**
 - View a list of all study variables
 - Search for particular variables of interest
 - View the accompanying variable label/question and response frequencies
 - **“Resources Related to this Study”**
 - View a list of reports, papers, and other resources that cite the study
-

Topic 3.4
Access to FACES 2014 Data

Restricted-Use Data

- **All FACES 2014 data files are restricted use**
 - **Your application for access should include:**
 1. Signed Restricted Data Use Agreement.
 2. A letter summarizing your research interest for the data requested
 3. Students must also include a photocopied student ID and co-signature of advisor or professor
 - **When approved, *Research Connections* will provide the data via secure download.**
-

Module 3 Review

- **To review some of the key themes and take-away messages from Module 3, please answer the questions in the Module 3 Review Quiz.** *Reference slides at the end of this module.*
 - **Once you have answered all the questions, check your answers using the Module 3 Review Quiz Answers.** *Reference slides at the end of this module.*
-

**MODULE 3 REVIEW QUIZ &
ANSWERS**

Module 3 Review Quiz

1. Only one of the three Core study data files – the child file – includes the constructed/derived variables developed from all Core study instruments.
 - a. True
 - b. False

 2. All Head Start teacher survey and classroom observation data are contained on the classroom/teacher file. The number of records on that file matches:
 - a. the number of classrooms sampled in the 60 programs with child-level data
 - b. the number of teachers in the FACES 2014 sample
 - c. the number of classrooms selected from all 176 participating programs, plus classrooms that children moved to between the fall and spring of the Head Start year
 - d. both the number of teachers and classrooms; the two are the same

 3. The first two characters in the names of most of the FACES 2014 variables identify:
 - a. the first two characters in the respondent's name
 - b. the data source for the variable and the wave in which the data were collected
 - c. the program in the study and wave in which it first entered the study (fall 2014 or spring 2015)
 - d. they have no specific meaning; they are just random characters
-

Module 3 Review Quiz, Cont'd

4. Which of the following are reasons for using the constructed/derived variables and scores provided to users on the data files?
- They can save you considerable time and effort
 - They sometimes use data that are not available on the data file
 - Using the variables and scores help when comparing findings from one FACES study to another
 - All of the above
5. FACES includes several types of scores for the direct assessments of children's language, literacy, and mathematics skills. Which of the following scores are measures of children's absolute performance and which are measures of relative performance?
- Raw scores: ___ Absolute ___ Relative
 - T-scores: ___ Absolute ___ Relative
 - Standard scores: ___ Absolute ___ Relative
 - IRT or W scores: ___ Absolute ___ Relative
6. You want to know if children have made progress over the program year and how much progress they have made on average. And, you want to know if the gains they have made are related to a set of family and classroom characteristics. What type of score is best suited to answer these questions?
- Raw score
 - T-score
 - Standard score
 - IRT or W score
-

Module 3 Review Quiz Answers

- 1 *ANSWER: True. All of the Core study files include constructed and derived variables, but only the child file includes both those created from the child assessments (direct and TRC) and parent survey, as well as any created from the teacher and director surveys and classroom observations.*
 - 2 *ANSWER: The correct answer is c. The classroom/teacher file includes a record for each classroom that was sampled and a record for 24 classrooms that children moved into, which were not part of the classroom sample. When generating national estimates of Head Start classrooms and teachers, the 24 classes are not included (they do not have a positive sampling weight). Teacher data (for example, information on their background, education and work*
 - 3 *ANSWER: The correct answer is b. The first character is the data source (for example, parent survey=P, child assessment=A, center director survey=C). The second character is the wave when the data were collected (fall=1 and spring=2).*
-

Module 3 Review Quiz Answers, Cont'd

- 4 *Answer: The correct answer is all of the above. Constructed/derived variables are timesavers (Some of the variables are complex and require the use of data from several sources). Certain data are simply not available on the data files (redacted data per agreements with test developers and publishers). With many different researchers using the data, measuring key constructs in the same way helps when comparing findings from one study to another.*
- 5 *Answer: Raw scores (a) and IRT or W scores (d) are both indicators of absolute performance and tell us what a child knows and how much he/she has learned over time. T-scores (b) and standard scores (c) are indicators of a child's performance relative to others of his/her age. T-scores and standard scores tell us how a child is performing relative to their peers.*
- 6 *Answer: The correct answer is d. IRT-based scores (including W scores) are well suited for estimating the gains children make between fall and spring. They can be used as dependent variables in regression and other multivariate models. Raw scores could be used, but they are less meaningful unless all children attempt all of the items, which is not typically the case in the measures that are used in FACES.*
-