

## Equipped for the Future Read With Understanding Performance Continuum

### PERFORMANCE LEVEL 1

#### Read With Understanding

*How adults at Level 1 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 1 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 1 can:*

- Recognize everyday words or word groups in short, simple text by decoding letter-sound correspondence, isolating and saying first and last sounds, naming pictures to isolate and say initial sounds, sounding out words by segmenting words into separate sounds and syllables, combining or blending sounds, recognizing simple rhyming word patterns, or recalling oral vocabulary and sight words.
- Demonstrate familiarity with concepts of print, letter shapes, letter names and sounds (individual consonants and vowels, digraphs and blends), and common vocabulary.
- Monitor accuracy of decoding and word recognition using various strategies, such as rereading or making word lists.
- Recall prior knowledge to assist in understanding information in the text.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 1 can read and comprehend words in short, simple texts slowly and with some effort but with few errors, to independently accomplish simple, well defined, and structured reading activities in a few comfortable and familiar settings.*

#### Level 1 Examples of Proficient Performance

*Adults performing at Level 1 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading a grocery list and recognizing words and prices in a store ad to make decisions about what to buy.
- Reading personal names and addresses to make an invitation list.
- Reading product names and quantities to fill a purchase order.
- Reading names and office numbers to distribute interoffice mail to the correct locations.
- Reading personal information prompts to accurately fill out simple applications, registration forms and so on.
- Reading product and store names or symbols on signs and storefronts to identify places to shop.
- Reading months, days and dates on a personal calendar to identify and enter important events.

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### PERFORMANCE LEVEL 2

#### Read With Understanding

*How adults at Level 2 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 2 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing Level 2 can:*

- Decode and recognize everyday, simple words in short, simple text by breaking words into parts, tapping out/sounding out syllables, applying pronunciation rules, using picture aids, and recalling oral vocabulary and sight words.
- Demonstrate familiarity with simple, everyday content knowledge and vocabulary.
- Locate discrete items of information in simplified text.
- Monitor and enhance comprehension using various strategies, such as rereading, restating, copying and rephrasing text; making a list of new words, or using a simplified dictionary.
- Recall prior knowledge to assist in selecting texts and in understanding the information they contain.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 2 can read and comprehend words in small blocks of simple text, slowly but easily and with few errors, to independently accomplish simple, well-defined and structured reading activities in a range of comfortable and familiar settings.*

#### Level 2 Examples of Proficient Performance

*Adults performing at Level 2 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading aloud a picture book with very simple text to a young child.
- Reading a short narrative about a community concern to identify and think about personal community issues.
- Reading about entry-level job duties to decide whether to apply.
- Reading simple greeting cards to choose an appropriate card for a friend.
- Reading a simple chart about job benefits to figure out if hospitalization is covered.
- Reading utility bills to understand how and when to pay them.
- Reading short narratives about immigrant experiences to reflect on and learn about personal heritage.
- Reading the weather forecast in the newspaper to decide on appropriate clothes for a weekend trip.

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### PERFORMANCE LEVEL 3

#### Read With Understanding

*How adults at Level 3 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 3 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 3 can:*

- Decode and recognize most everyday and some unfamiliar words in short to medium-length text by drawing on content knowledge and oral vocabulary, breaking words into parts, applying pronunciation rules, and adjusting reading pace.
- Demonstrate familiarity with common, high-interest content knowledge and related vocabulary.
- Locate important information in simple text using some simple strategies.
- Monitor and enhance comprehension by using a range of simple strategies, such as recalling, restating, rephrasing, explaining the content of the text or using simple examples.
- Actively apply prior knowledge to assist in understanding information in texts.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 3 can quickly and accurately read and comprehend words and word groups in multiple pages of simple text to independently accomplish simple, well-defined and structured reading activities in a range of comfortable and familiar settings.*

#### Level 3 Examples of Proficient Performance

*Adults performing at Level 3 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading about a company's job benefits to make decisions about personal choice of benefits.
- Reading a short story about how cultural differences can lead to conflict to reflect on and make decisions about personal issues.
- Reading a minimum-wage poster to determine if a job wage is legal.
- Reading a short story about losing a job to reflect on the ways job loss can affect family relationships.
- Reading citizenship application procedures to help someone decide whether to pursue citizenship.
- Reading housing rental ads to compare housing options and make a decision about which house is better for a family.

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### PERFORMANCE LEVEL 4

#### Read With Understanding

*How adults at Level 4 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 4 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 4 can:*

- Recognize unfamiliar and some specialized words and abbreviations using word analysis or inference.
- Demonstrate familiarity with everyday and some specialized content knowledge and vocabulary.
- Locate important information in text using a wide range of strategies.
- Monitor and enhance comprehension using a wide range of strategies, such as posing and answering questions, trial and error, and adjusting reading pace.
- Organize information using some strategies, such as recall, restatement, simple sequencing and simple categorization.
- Actively apply prior knowledge to assist in understanding information in texts.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 4 can read and comprehend a variety of texts at an appropriate pace and with good comprehension to independently accomplish structured reading activities in a variety of familiar settings.*

#### Level 4 Examples of Proficient Performance

*Adults performing at Level 4 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading fast food nutrition charts to choose a meal that is low in fat.
- Reading brief newspaper editorials on opposing sides of a subject of interest to clarify a personal opinion on the subject.
- Reading newspaper advice columns to stimulate thinking about personal issues.
- Reading *TV Guide* to determine if specific movies are appropriate for children.
- Reading information about labor unions to make a decision about joining a union.
- Reading a magazine about typical behavior for toddlers to figure out how to deal with a two-year-old's tantrums.
- Reading a brochure from a health clinic to learn about signs of depression and helpful tips for dealing with it.

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### PERFORMANCE LEVEL 5

#### Read With Understanding

*How adults at Level 5 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 5 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 5 can:*

- Recognize and interpret abbreviations and specialized vocabulary.
- Demonstrate familiarity with everyday and some specialized content knowledge and vocabulary and with paragraph structure and document organization.
- Locate important information, read identified sections for detail and determine missing information using a wide range of strategies.
- Monitor and enhance comprehension using a wide range of strategies.
- Organize and analyze information and reflect upon its meaning using a range of strategies such as classification, categorization, and comparison/contrast.
- Evaluate prior knowledge against new information in texts to enhance understanding of the information.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 5 can read and comprehend dense or multipart texts at an appropriate pace and with good comprehension to independently accomplish structured, complex reading activities in a variety of familiar and some novel settings.*

#### Level 5 Examples of Proficient Performance

*Adults performing at Level 5 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading over-the-counter medicine labels to choose the right product for a sick child.
- Reading a magazine article about home Internet connection providers to analyze the options described and select a provider.
- Reading information about advertising techniques and analyzing the ways advertisers persuade consumers to buy their products to become better informed about a purchase.
- Reading a campus safety brochure to be aware of a school's rules, regulations and resources available for students.
- Reading information from the Occupational Safety and Health Administration about noise exposure to solve a problem at work.
- Reading a self-help book about family finances to find ways to save money.
- Reading information about voter eligibility to decide if one is eligible to vote in an upcoming election.
- Reading instructions from a Web site for job seekers to find information and advice on effective résumé writing.

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### PERFORMANCE LEVEL 6

#### Read With Understanding

*How adults at Level 6 Read With Understanding:*

- Determine the reading purpose.
- Select reading strategies appropriate to the purpose.
- Monitor comprehension and adjust reading strategies.
- Analyze the information and reflect on its underlying meaning.
- Integrate it with prior knowledge to address reading purpose.

#### Level 6 Indicators

##### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 6 can:*

- Recognize and interpret terms, signs, symbols, acronyms, and abbreviations.
- Demonstrate familiarity with extensive specialized content knowledge and vocabulary and with the organization of long, complex prose and complex documents.
- Use a wide range of strategies to guide reading of long texts.
- Locate both directly stated and implied important information.
- Monitor and enhance comprehension using a wide range of strategies, such as brainstorming and question formulation techniques.
- Organize and analyze information and reflect upon its meaning using a wide range of strategies, such as applying relevant information to multiple scenarios, summarizing, and drawing “big picture” conclusions and generalizations from detailed reading.
- Integrate prior knowledge with new information in texts to develop deep understanding of the information.

##### Show Fluency, Independence, and Ability to Perform in a Range of Settings

*Adults performing at Level 6 can read and comprehend long, complex texts at an appropriate pace and with good comprehension to independently accomplish structured or unstructured complex reading activities in a variety of familiar and novel settings.*

#### Level 6 Examples of Proficient Performance

*Adults performing at Level 6 can Read With Understanding to accomplish a variety of goals, such as:*

- Reading information about financial aid for higher education to decide whether to apply for loans and to understand options available if applying for aid.
- Reading a brochure on workplace medical benefits to distinguish differences between types of plans available and choose the best personal family plan.
- Reading newspaper editorials that take opposite stands on the same issue and decide which argument is more persuasive to develop a personal position on the issue.
- Reading a consumer guide about long-distance telephone services to choose a personal home service.
- Reading a journal article on childhood bullying to get ideas about how to cope with a child’s bullying behavior.
- Reading data sheets on material safety to get guidance about safely handling toxic materials in the workplace.

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- Reading a company's employee handbook to get up-to-date information about the company's employment leave policies.

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**Performance levels for the EFF Content Standard Read With Understanding mapped to the NRS Educational Functioning Levels**

<b>EFF Read With Understanding Performance Levels</b>	<i>Can be used to define an exit point for the NRS ABE Educational Functioning Level . . .</i>	<i>Can be used to define an exit point for the NRS ESL Educational Functioning Level . . .</i>
Read With Understanding Performance Level 1	Beginning ABE Literacy	Beginning ESL
Read With Understanding Performance Level 2	Beginning Basic Education	Low Intermediate ESL
Read With Understanding Performance Level 3	Low Intermediate Basic Education	High Intermediate ESL
Read With Understanding Performance Level 4	High Intermediate Basic Education	Low Advanced ESL
Read With Understanding Performance Level 5	Low Adult Secondary Education	High Advanced ESL
Read With Understanding Performance Level 6	High Adult Secondary Education	

## **How to read the EFF Read With Understanding Performance Continuum**

The EFF Performance Continuum for Read With Understanding is a developmental description of performance on the Read With Understanding Standard. The continuum portrays development along four dimensions: the structure and depth of knowledge, and the fluency, independence and range of performance. The six EFF Levels described here are points along the continuum that serve as benchmarks for key stages in development and increasing ability to accomplish important activities in daily life that require adults to Read With Understanding.

The six levels of performance described in this document cover only a portion of the performance levels possible for Read With Understanding. There are aspects of reading development and performance that fall below the performance described in Level 1 and there are many levels of proficiency leading toward higher levels of expertise beyond the knowledge, skills, strategies, and performance descriptions at Level 6 on the Read With Understanding Performance Continuum.

The descriptions of performance at each level of the Read With Understanding Performance Continuum are anchored in analysis of data on adult learner performance. They were developed by analyzing data on use of the Read With Understanding Standard by adult learners in ABE programs (including adult literacy, adult English Speakers of Other Languages, family literacy, and adult secondary education). This empirical evidence of performance on the Read With Understanding Standard went through extensive analysis by research staff and was reviewed and amended by a panel of content experts. At each step in this process, cognitive science and reading theory and research was used to guide and refine the definition of performance criteria. The number of levels defined for the EFF Performance Continuum for Read With Understanding (six) was determined through analysis and review of data. Each level describes a qualitatively distinct stage in the development of proficiency on the standard. Each level builds on the previous levels. Thus, an adult who is able to perform at Level 3 also has mastered the performance on the Standard described at Levels 1 and 2.

Each performance level on the Read With Understanding Performance Continuum is described on a single page in this document. Each page is divided into four sections:

**Section 1** is the definition of the Standard. The performance-level description starts with the components of performance of the standard. These components define the content standard and they remain the same at each level of performance. This repetition serves as a reminder that the integrated skill process defined by the components of performance for each standard is constant across all levels, from novice to expert levels of performance. What changes from level to level is the growth and complexity of the underlying knowledge base and the resulting increases in fluency and independence in using the standard to accomplish an increasing range and variety of tasks.

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This definition of the standard is a useful tool for communicating to adults and their teachers the essential features of the construct, or set of targeted abilities, for each standard. By making it clear how the skill process is defined (or “unmasking the construct,” as described by Gitomer & Bennett, 2002), adult learners are better able to articulate their own learning goals for improving proficiency and teachers are better able to focus learning and instructional activities that build toward the goal of increasing ability to use the standard to accomplish everyday activities. Here is how the standard is defined for all performance levels in Read With Understanding:

- Determine the reading purpose,
- Select reading strategies appropriate to the purpose,
- Monitor comprehension and adjust reading strategies,
- Analyze information and reflect on its underlying meaning, and
- Integrate new information with prior knowledge to address the reading purpose.

**Section 2** is a list of key knowledge, skills and strategies that can be observed in proficient performance at that level. These are the primary indicators (or benchmarks) of the growth and organization of the knowledge base needed for proficient performance on the standard at each level. This list is thus of central importance for designing assessments to measure performance on the standard. Because the performance levels are designed primarily as guides for assessment and not as a curriculum framework, the list does not specify details of knowledge, skills, and strategies that might be studied and taught. Nonetheless, the list can serve as a way of identifying instructional objectives for each level and provides a guide for developing criteria for placement of learners in instructional levels.

Because this list of key knowledge, skills, and strategies focuses only on those features of performance that indicate qualitative changes in what a learner knows and can do, it can be used by curriculum developers and instructors to set instructional objectives for each level and to develop more detailed curricula or learning plans that will prepare learners to develop these abilities, meet the criteria, and move on to the next level in their development of expertise.

**Section 3** defines the fluency, independence and ability to perform in a range of settings expected for proficient performance on the standard at each level. Together with the descriptions of key knowledge, skills, and strategies, these descriptions serve as the primary behavioral indicators (benchmarks) of proficient performance at each level. As such, section 3 descriptions also provide a basis for designing learning, instruction and assessment that is appropriate to that level.

**Section 4** a short list of examples of the purposeful applications (activities) that an adult who is proficient at that level can accomplish. This list of examples is illustrative and not exhaustive. It is based primarily on actual reports from teachers of what students could use the standard to accomplish. These real-world examples are useful to adults and their teachers in making concrete the purpose and need for attaining increasing proficiency in performance on the standard. The list of real-world accomplishments also provides guidance for selecting and designing content for instructional materials and assessments.

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### **What are the Guides to Using the EFF Performance Continua?**

The EFF Assessment Resource Collection contains guides to ten of the EFF performance continua (<http://eff.cls.utk.edu/assessment/guides.htm>). The purpose of each guide is to introduce you to one of the EFF performance continua and show you how to use it to plan for instruction and for classroom-based assessment. Since accountability assessments on the standard will be based on the same performance continuum, the guide may also help you to better understand what to expect once a performance assessment process based on the standard is in place.

The EFF Continua of Performance are multidimensional, developmental descriptions of performance on the EFF Content Standards. They allow for descriptions of performance ranging from the novice level to the expert level. Currently the descriptions of performance describe from three to six levels each beginning with a novice level and extending to levels that correlate with exit points for adult basic education. Each continuum is built around the four EFF Dimensions of Performance, and performance levels are defined by identifying key features of performance at various points along the continuum. The performance continua make up one part of the EFF Assessment Framework.

### **How Can I Use the Guides?**

Currently guides are available for 10 of the 16 EFF standards. Each guide contains a description of the standard and a two-page chart showing the performance continuum itself. The guide also includes: 1) information to help you understand how to read the continuum; 2) tools for lesson planning and assessment; 3) a scenario describing how one teacher used these tools; 4) information on the research basis for the standard; and 5) tips for where to go for more information. Some of the tools are available as Word documents to allow you to adapt them to your needs. You can get to each guide by clicking on the following link:

<http://eff.cls.utk.edu/assessment/guides.htm>

### **Where Can I Find Examples of Completed Planning Guides?**

The guides for each of the standards also contain scenarios describing how a teacher used the performance continuum for the standard along with lesson planning and assessment tools to prepare lesson plans. Embedded within each of the guides are excerpts from completed 1 page planning guides based on the scenarios. You will find the full 1 page versions of the completed planning guides for 10 standards here: <http://eff.cls.utk.edu/assessment/planguides.htm>.

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### **Notes on the Research Base for the Read With Understanding Continuum and Performance Levels**

Research on the preparation of teachers to deliver comprehension instruction was an important topic in the National Reading Panel’s review of scientific studies of reading comprehension. The key challenge in this area identified by the NRP is that teachers must have a clear understanding not only of the comprehension strategies they are teaching, but also of the instructional strategies that they can employ. This most often means being able to respond to students’ needs for constructive feedback as they read (NRP, 2000b, p. 4-119).

For teachers of adult basic education, the challenge of understanding the differences between teaching skills alone and integrated teaching of skills and strategies in ways that build reading proficiency is especially daunting. Marking out a clear and detailed developmental pathway (that includes all the key elements of reading proficiency discussed below) for adult readers (and their teachers) to follow is an essential first step in meeting this challenge. The Read With Understanding Performance Continuum provides such a pathway, with key developmental benchmarks of knowledge, skills, and strategies clearly described.

The Read With Understanding Performance Continuum provides a multidimensional view of adult reading proficiency that incorporates important elements of reading skills development in the areas of alphabets, fluency, and comprehension. As adults move from level to level along the continuum, their increasing capabilities enable them to interact with increasingly complex forms of text to accomplish increasingly demanding reading activities (in an increasingly wide range of contexts). The descriptions of:

- Key Knowledge, Skills, and Strategies;
- Fluency, Independence, and Ability to Perform in a Range of Settings; and
- Variety of Reading Purposes

that can be accomplished at each of the six performance levels on the Read With Understanding continuum are intended to serve as guides for learning and instruction for adults who are striving to improve their proficiency in reading from “novice” to “expert” levels of performance.

At each level of the continuum, the core definition of the standard applies. That is to say, at each level the skill process that is being described is one that begins with determining the reading purpose and ends with integrating new information with prior knowledge in order to address the reading purpose. At each successive level of performance on the continuum, the addition of new skills and knowledge and higher levels of ability to apply comprehension strategies lead to more fluent and independent reading proficiency and the ability to perform successfully a greater range of increasingly demanding reading activities.

These core elements of the EFF Performance Continuum — developmental descriptions of the capabilities of readers interacting with increasingly complex texts to accomplish increasingly demanding reading activities — align very well with evidence-based definitions of reading comprehension as put forward in recent research syntheses including the National Reading Panel (2000) and the RAND Reading Study Group (RRSG) (Snow, 2002).

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The RRSB had this to say about reading proficiency:

“The RRSB sees achieving reading proficiency as a long-term developmental process; what constitutes “reading well” is different at different points in the reader’s development. The end point — proficient adult reading — encompasses the capacity to read, with ease and interest, a wide variety of different kinds of materials for varying purposes and to read with comprehension even when the material is neither easy to understand nor intrinsically interesting. Adult reading involves reading for pleasure, learning, and analysis, and it represents a prerequisite to many forms of employment, to informed participation in the democratic process, to optimal participation in the education of one’s children, and to gaining access to cultural capital.” (Snow, 2002, p. 9).

This conceptualization of reading proficiency has strong parallels in EFF’s conceptualization of purposeful, functional reading — reading to accomplish things in the world. This is the sort of reading proficiency that adult learners, ABE instructors, and others concerned with the quality of ABE desire.

The RAND Reading Study Group developed a formal definition of reading comprehension that also closely parallels the construct of applied reading proficiency underlying the EFF Standard Read With Understanding, as follows:

“We define reading comprehension as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. We use the words *extracting* and *constructing* to emphasize both the importance and the insufficiency of the text as the determinant of reading comprehension. Comprehension entails three elements:

- The *reader* who is doing the comprehending
- The *text* that is to be comprehended
- The *activity* in which comprehension is a part.

In considering the reader, we include all the capacities, abilities, knowledge, and experiences that a person brings to the act of reading. Text is broadly construed to include any printed text or electronic text. In considering activity, we include the purposes, processes, and consequences associated with the act of reading.

These three dimensions define a phenomenon that occurs within a larger sociocultural context that shapes and is shaped by the reader and that interacts with each of the three elements.” (Snow, 2002, p. 11)

As will be shown below, the characteristics of and interactions among readers, texts, and activities that research has shown to be critical to proficient adult reading (and the learning and instruction that leads to proficient adult reading) are reflected in numerous ways in the descriptions of each level of performance on the Read With Understanding Performance Continuum.

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### **Support for the Continuum and Performance Levels in Reading Theory and Research**

The current state of research-based knowledge of reading development, reading proficiency, and reading instruction has been summarized in several recent reports (Snow, Burns, & Griffin, 1998; National Reading Panel, 2000). These reports summarize findings from a large body of experimental research on early reading development and instruction for children in school. As these research syntheses make clear, the bulk of evidence-based knowledge (findings from experimental or quasi-experimental research studies) is related to early stages of reading development (from oral language development to the ability to decode and recognize words and word groups) for very young children (preschool through early elementary school). The number of experimental and quasi-experimental studies of reading development and reading instruction on higher levels of reading development (in the important areas of fluency and comprehension) involving adolescents and adults as research subjects is much smaller.

Nonetheless, much of the early reading development research is relevant to adult reading development and instruction and, as other recent research syntheses have shown, there is a growing body of quality research on topics related to reading fluency and comprehension (see Pressley, 2000; Snow, 2002) as well as studies that involve adolescents and adults (see Kruidenier, 2002) and, very critically, studies that include adolescents and adult learning to read in a second language (see Burt, Peyton, & Adams, 2003). All of these recent research summaries (Snow, Burns, & Griffin, 1998; National Reading Panel, 2000; Pressley, 2000; Snow, 2002; Kruidenier, 2002; Burt, Peyton, & Adams, 2003) portray the key elements of reading development in the same way. All of these reports describe reading as a hierarchy of skills, from processing of letter shapes and sounds to word recognition to text processing. These key elements of reading proficiency include alphabets (phonemic awareness, phonics, and word analysis), fluency (fast and accurate decoding; and prosody), and comprehension (vocabulary, world knowledge, and comprehension strategies). Each of these elements is incorporated in the developmental descriptions of emerging adult reading proficiency on the Read With Understanding Performance Continuum.

#### ***Cognitive process models of reading***

The cognitive process (activity in the brain) of proficient adult reading requires mastery of alphabets, fluency, and comprehension knowledge, skills, and strategies. Current evidence-based understandings of the cognitive process of skilled reading are built on the foundation of Gough's (1972) information-processing model. Gough saw a parallel between the way computers process information and the way the brain processes information and developed a model that describes the cognitive process of reading as a linear, letter-by-letter, word-by-word, additive process. Following Gough, LaBerge and Samuels (1974) assumed that word recognition is fundamental to the reading process and developed a model of the cognitive process of reading that involves three memory systems:

- visual signals are processed by a Visual Memory System that holds representations of features, letters, spelling groups, words, and word clusters;
- next information flows to a Phonological Memory Processing System that enables processing of the sounds of spelling groups, words, and word groups; and,

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- finally, a Semantic Memory System processes the meaning of words, word groups, and sentences.

LaBerge and Samuels introduced the notion of “automaticity” to explain the speed and relative ease of skilled reading by hypothesizing that rapid reading comprehension is possible only when the cognitive processes involved in decoding letters and words no longer require conscious attention. When letter and word recognition becomes “automatic,” the brain is capable of focusing on comprehension.

More recently, interactive models of reading processes that hypothesize simultaneous cognitive processing of information at different levels (Rumelhart, 1994) have refined the strictly “bottom-up” cognitive models (moving from features to letters, to spelling patterns, to visual word representations, to phonological word representations, to word meanings, to word group meanings) originated by Gough and by LaBerge and Samuels. Marilyn Adams (1990, 1994) has been the leading proponent of this parallel-distributed processing model of reading. Adams describes interactions among four cognitive “processors” (orthographic processor, phonological processor, meaning processor, and context processor) as follows:

“... even as the letters of a word in fixation are recognized, they activate the spelling patterns, pronunciation, and meanings with which they are compatible. At the same time, using its larger knowledge of the text, the context processor swings its own bias among the rival candidates so as to maintain the coherence of the message. And as each processor hones in on the word’s identity, it relays its hypothesis back to all the others such that, wherever hypotheses agree among processors, their resolution is speeded and strengthened. In this way, as initiated by print on the page and facilitated through feedback and feedforward both within and between processors, skillful readers come to recognize the spelling, sound, meaning, and contextual role of a familiar word almost automatically and simultaneously, leaving their active attention free for critical and reflective thought.”(Adams, 1994: 9).

Adam’s description of the brain activity that underlies skillful reading applies to adults as well as to children. For adults, as for children and youth, developing proficient reading ability involves progressive mastery and integration of the complete hierarchy of fundamental reading knowledge, skills, and strategies, including phonemic awareness, phonics, word analysis, fluency, vocabulary development, world knowledge, and comprehension strategies.

### ***Alphabetsics (phonemic awareness, phonics, and word analysis)***

Alphabetsics refers to knowledge of how the letters of the alphabet are used to represent the sounds of the English language. Phonemes are the smallest units (sounds) of spoken language and phonemic awareness is the ability to recognize and manipulate (isolate, segment, blend, delete) phonemes in spoken words. Phonics and word analysis refer to knowledge of connection between written letters and sounds. A large body of evidence-based research has shown that learning and instruction in phonemic awareness and word analysis skills are fundamental to early reading development (Byrne & Fielding-Barnsley, 1993; Felton, 1993; Foorman, et al., 1996, and summary of research in NRP, 2000b). Experimental results from one study with adult literacy learners showed that adult beginning readers had lower phonemic awareness abilities (on

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phoneme deletion and segmentation tests) and word analysis skills than children whose reading comprehension was tested at the same level (Greenberg, Ehri, & Perin, 1997). This suggests that adults, like children, may benefit from learning and instruction focused on improving phonemic awareness and word analysis. Although there is some evidence from experimental research with adult English language learners that some aspects of alphabetic knowledge may transfer from the first language to English reading (Koda, 1999), research has also shown that even advanced English learners whose first language is written alphabetically may need instruction to be able to match letters and sounds in English (Burt, Peyton, & Adams, 2003).

The importance of phonemic awareness and word analysis are highlighted in the first three levels of the Read With Understanding Performance Continuum. For example, note the italicized descriptors at Level 1 in section 2 of the performance continuum, “Key Knowledge, Skills, and Strategies.”

### Excerpt from Read With Understanding Performance Continuum — Level 1

#### Use Key Knowledge, Skills, and Strategies

*Adults performing at Level 1 can:*

- Recognize everyday words or word groups in short, simple text by *decoding letter-sound correspondence, isolating and saying first and last sounds, naming pictures to isolate and say initial sounds, sounding out words by segmenting words into separate sounds and syllables, combining or blending sounds*, recognizing simple rhyming word patterns, or recalling oral vocabulary and sight words.
- Demonstrate familiarity with concepts of print, letter shapes, *letter names and sounds (individual consonants and vowels, digraphs and blends)* and common vocabulary.
- Monitor accuracy of decoding and word recognition using various strategies, such as rereading or making word lists.
- Recall prior knowledge to assist in understanding information in the text.

### **Fluency**

The National Reading Panel described fluency as a critical component of skilled reading but one that is often neglected in instruction. According to the NRP (2000b, p. 3-1), a fluent reader “can read text with speed, accuracy, and proper expression.” The NRP report quotes the following passages from the earlier National Research Council report, *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998): “Adequate progress in learning to read English (or, any other alphabetic language) beyond the initial level depends on sufficient practice in reading to achieve fluency with different texts.” (p. 223, quoted in NRP, 2000b, p. 3-1) And “because the ability to obtain meaning from print depends on word recognition accuracy and reading fluency, both the latter should be regularly assessed in the classroom, permitting timely and effective instructional response when difficulty or delay is apparent.” (p. 7, quoted in NRP, 2000b, p. 3-1).

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Evidence-based research has shown that training children to recognize words in text more quickly improves reading comprehension (Tan & Nicholson, 1997 and see research synthesis in NRP, 2000b). There is also some experimental research showing that teaching fluency to ABE students may lead to increases in reading achievement (McKane & Greene, 1996; Meyer, 1982).

Fluency is a key dimension of performance for all of the EFF Standards. The Read With Understanding Performance Continuum describes developmental changes in reading rate and accuracy and emerging ability to read with expression across all six levels of the continuum. Note the changes from level to level in the excerpts from section 3 of the performance level descriptions: “Show Fluency, Independence, and Ability to Perform in a Range of Settings. Also, note that fluency in word recognition — or automaticity — is achieved at Level 4 on the continuum.

### **Excerpts from *Read With Understanding Performance Continuum* — Levels 1 to 6**

Adults performing at Level 1 can read and comprehend words in short, simple texts slowly and with some effort but with few errors ...

Adults performing at Level 2 can read and comprehend words in small blocks of simple text slowly but easily and with few errors ...

Adults performing at Level 3 can quickly and accurately read and comprehend words and word groups in multiple pages of simple text ...

Adults performing at Level 4 can read and comprehend a variety of texts at an appropriate pace and with good comprehension ...

Adults performing at Level 5 can read and comprehend dense or multipart texts at an appropriate pace and with good comprehension ...

Adults performing at Level 6 can read and comprehend long, complex texts at an appropriate pace and with good comprehension ...

### ***Vocabulary development***

It has long been established that a good vocabulary is strongly associated with good reading comprehension (Anderson & Freebody, 1981). The National Reading Panel (2000b) identifies vocabulary development as one of the three important components of reading comprehension. According to the NRP (2000b, p. 4-1), “reading comprehension is a cognitive process that integrates complex skills and cannot be understood without examining the critical role of vocabulary learning and instruction and its development.”

Evidence-based research has shown that vocabulary development and various methods of vocabulary instruction are effective means of improving reading fluency and comprehension for children (Beck, Perfetti, & McKeown, 1982; Beck & McKeown, 1991; and see research synthesis in NRP, 2000b). One conclusion of the NRP in their overview of evidence-based research was that various vocabulary instructional methods can have differential impacts on students of different ages and ability levels (NRP, 2000b: 4-18). For adults, some evidence-based

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research shows that participation in adult basic education can have a positive impact on vocabulary development (Gold & Horn, 1982; Philliber, Spillman, & King, 1996). Vocabulary development has also long been recognized as a critical component for second language reading development (McLeod & McLaughlin, 1986; Tan et al., 1994).

Vocabulary development is an important component of the Read With Understanding Performance Continuum at all six levels of the descriptions of “Key Knowledge, Skill, and Strategies.”

### **Excerpts from the Read With Understanding Performance Continuum — Levels 1 to 6**

#### Level 1

Demonstrate familiarity with concepts of print, letter shapes, letter names and sounds (individual consonants and vowels, digraphs and blends) and common vocabulary

#### Level 2

Demonstrate familiarity with simple, everyday content knowledge and vocabulary

#### Level 3

Demonstrate familiarity with common high-interest content knowledge and related vocabulary

#### Level 4

Demonstrate familiarity with everyday and some specialized content knowledge and vocabulary

#### Level 5

Demonstrate familiarity with everyday and some specialized content knowledge and vocabulary

#### Level 6

Demonstrate familiarity with extensive specialized content knowledge and vocabulary

### ***Comprehension strategies***

Instruction in comprehension strategies was the second important component of reading comprehension identified by the National Reading Panel. The NRP (2000b, p. 4-29), citing Pressley and Afflerbach (1995), notes that the bulk of research on text comprehension in the past three decades has been guided by a cognitive conceptualization of reading as a purposeful and active process. In this view, meaning is influenced by the text and by the reader’s intentionality, problem solving, and use of prior knowledge (Anderson & Pearson, 1984). The NRP (2000b, p. 4-41) quotes Baumann, Seifert-Kessell, & Jones (1992, p. 162), who state that “there is ample extant research supporting the efficacy of cognitive strategy training during reading as a means to enhance students’ comprehension.”

There is a large body of evidence-based research to show that text comprehension strategies (including learning to become aware of and monitor one’s own cognitive processes, teacher modeling of actions a reader can take to enhance comprehension, and practicing text comprehension strategies) can be taught effectively and can have positive effects on reading comprehension (Pressley et al., 1989; Rosenshine & Meister, 1994; Rosenshine, Meister, &

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Chapman, 1996; Brown et al., 1996). There is also experimental evidence that suggests that whereas adults in ABE can improve reading comprehension (see for example, Alessi et al., 1982; Perin & Greenberg, 1993) adult learners in ABE may be less aware of their own comprehension strategies than skilled college readers are (Gambrel & Heathington, 1981).

The Read With Understanding Performance Continuum calls attention to developing strategies for monitoring and enhancing comprehension and to actively recalling and using prior knowledge to assist understanding of new information in texts across all six performance levels.

### **Excerpts from the Read With Understanding Performance Continuum — Levels 1 to 6**

#### **Level 1**

Monitor accuracy of decoding and word recognition using various strategies, such as rereading or making word lists.

Recall prior knowledge to assist in understanding information in the text.

#### **Level 2**

Monitor and enhance comprehension using various strategies, such as rereading, restating, copying and rephrasing text; making a list of new words, or using a simplified dictionary.

Recall prior knowledge to assist in selecting texts and in understanding the information they contain.

#### **Level 3**

Monitor and enhance comprehension by using a range of simple strategies, such as recalling, restating, rephrasing, explaining the content of the text or using simple examples.

Actively apply prior knowledge to assist in understanding information in texts.

#### **Level 4**

Monitor and enhance comprehension using a wide range of strategies, such as posing and answering questions, trial and error, and adjusting reading pace.

Organize information using some strategies, such as recall, restatement, simple sequencing, and simple categorization.

Actively apply prior knowledge to assist in understanding information in texts.

#### **Level 5**

Monitor and enhance comprehension using a wide range of strategies.

Organize and analyze information and reflect upon its meaning using a range of strategies such as classification, categorization, and comparison/contrast.

Evaluate prior knowledge against new information in texts to enhance understanding of the information.

#### **Level 6**

Monitor and enhance comprehension using a wide range of strategies, such as brainstorming and question formulation techniques.

Organize and analyze information and reflect upon its meaning using a wide range of strategies, such as applying relevant information to multiple scenarios, summarizing, drawing “big picture” conclusions and generalizations from detailed reading.

Integrate prior knowledge with new information in texts to develop deep understanding of the information.

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