Policy Discussion: Linking Student Assessments – The ACT Portfolio

Speaker: Paul Weeks, Assistant Vice President, Educational Services, ACT, Iowa City, IA

This session will have two components. Initially, David Longanecker will present activities, currently underway in the WICHE states, which are working to align standards and assessments within and between secondary and postsecondary education. This presentation will focus not on current discussions in the West but on actual activities aimed at bringing secondary and postsecondary assessments into sync.

The second piece of this session will focus on the efforts of one nonprofit assessment organization, ACT, to accomplish the same thing. ACT has developed a family of related assessments, known as the Educational Planning and Assessment System, which includes assessments at different points in a student’s career, from eighth grade through sophomore year in college. This includes the CAAP exam, which, while technically not a part of EPAS, is part of the ACT family of integrated progressive assessments. This bevy of curriculum-based assessments provides schools, students, and their families with a set of indicators for tracking progress toward achievement levels necessary to be successful in college and in life after college. Paul Weeks, assistant vice president for educational services at ACT, will describe what led ACT to move in this direction, what hurdles it has faced in doing so, and how well the effort has been received and has performed.

Biographical Information on the Speaker

Paul Weeks is the assistant vice president for educational services for ACT. This is his second stint with ACT, having previously served in the field for the Lincolnshire (Chicago) office in 1989-90. He returned to ACT in 2003 after over six years with College Search Professionals (CSP), a firm he founded; CSP provided college counseling and planning services to over 150 schools and agencies, as well as staff development programs for organizations and institutions, including public and private colleges and universities in Idaho, Illinois, Iowa, Minnesota, Missouri, Tennessee, Texas, and Wisconsin. Weeks has a wide range of educational experience at the secondary and postsecondary levels. Previous to his work with ACT and CSP, he served as vice president and dean of admissions for Ripon College, as an admission officer and football coach for North Central College, and as a high school teacher. He has been a member of the National Association for College Admission Counseling (NACAC), and a member of a number of other organizations. In 1999, the Wisconsin Department of Public Instruction recognized him for creating and developing the JUMP program, a series of workshops designed to encourage underrepresented students to consider postsecondary education. He has been a featured speaker and presenter at numerous conferences and meetings.
ACT’s Educational Planning and Assessment System (EPAS)®

EPAS consists of three aligned programs:

- **EXPLORE®**, for students in grades 8 and 9, provides baseline information on the academic preparation of students that can be used to plan high school coursework.

- **PLAN®**, for students in grade 10, provides a midpoint review of students’ progress toward their education and career goals while there is still time to make necessary interventions.

- **The ACT®**, for students in grades 11 and 12, measures students’ academic readiness to make successful transitions to college and work after high school. The ACT Assessment is the most widely accepted and used test by postsecondary institutions across the U.S. for college admission and course placement.

ACT has been measuring the academic achievement of eleventh-grade and twelfth-grade students since the first administration of the ACT in 1959, their career aspirations since 1969, and their academic preparation since 1985. We have tracked each of these three areas for tenth graders since the debut of PLAN in 1987, and for eighth graders since 1993, when EXPLORE was added as the newest component of EPAS. Most recently, in 2003, we established ACT’s College Readiness Benchmarks, which are defined and discussed in detail below.

For more than forty years the ACT has served as the gold standard for measuring achievement because, unlike other large-scale assessments of academic ability, it is first and foremost an achievement test. It is a measure whose tasks correspond to recognized high school learning experiences, but which at the same time does not precisely duplicate that curriculum. The ACT measures not an abstract quality, such as intelligence or aptitude, but rather what students are able to do with what they have learned in school.

All three components of EPAS (EXPLORE, PLAN, and the ACT) measure achievement because each is firmly based in the curriculum of the grade level for which it is intended. Every 3 to 4 years, ACT conducts its National Curriculum Survey®, in which we ask more than 20,000 educators nationwide in grades 7–14 to identify the knowledge and skills that are important for students to know to be ready for college-level work. We also examine the objectives for instruction in grades 7 through 12 for all states that have published such objectives. We also review textbooks on state-approved lists for courses at these grade levels. We then analyze the information to refine the scope and sequence for each section of each EPAS assessment. In this way, rather than imposing a test construct without empirical support, EPAS is able to represent a consensus among educators and curriculum experts about what is important for students to know and be able to do.
EPAS Tests

Each component of EPAS (EXPLORE, PLAN, and the ACT) consists of four tests: English, Mathematics, Reading, and Science. The skills assessed in each of the tests are summarized below.

**English.** The items in the English tests assess six elements of effective writing in the two broad categories of usage and mechanics (punctuation, grammar and usage, sentence structure) and rhetorical skills (strategy, organization, style). Spelling, vocabulary, and rote recall of rules of grammar are not tested. The revising and editing issues posed by the items offer a certain richness and complexity. While some items require students to apply their knowledge of standard written English to the task of deciding the best way to write a sentence or sentences, the surrounding context makes the overriding issue that of clear and effective communication of meaning.

**Mathematics.** The items in the Mathematics tests cover four cognitive levels: Knowledge and Skills, Direct Application, Understanding Concepts, and Integrating Conceptual Understanding. Knowledge and Skills items require the student to use one or more facts, definitions, formulas, or procedures to solve problems that are presented in purely mathematical terms. Direct Application items require the student to use one or more facts, definitions, formulas, or procedures to solve straightforward problems set in real-world situations. Understanding Concepts items test the student’s depth of understanding of major concepts by requiring reasoning from a concept to reach an inference or a conclusion. Integrating Conceptual Understanding items test the student’s ability to achieve an integrated understanding of two or more major concepts to solve non-routine problems.

**Reading.** The items in the Reading tests require the student to derive meaning from texts by referring to what is explicitly stated and reasoning to determine implicit meanings and to draw conclusions, comparisons, and generalizations. Items do not test the rote recall of facts from outside the text, isolated vocabulary items, or rules of formal logic. Rather, the test focuses upon the complex of complementary and mutually supportive skills that readers must bring to bear in studying written materials across a range of subject areas.

**Science.** The items in the Science tests measure students’ mastery of the interpretation, analysis, evaluation, reasoning, and problem-solving skills required in the natural sciences. The items require students to recognize and understand the basic features of, and concepts related to, the provided information; to examine critically the relationships between the information provided and the conclusions drawn or hypotheses developed; and to generalize from given information to gain new information, draw conclusions, or make predictions. The items emphasize scientific reasoning skills rather than recall of scientific content, skill in mathematics, or pure reading ability. The tests pose the kinds of questions that college students of science must answer in planning, carrying out, and evaluating scientific investigations and in studying scientific theories.
EPAS Score Scales

Each test within EXPLORE, PLAN, and the ACT is scored on a common score scale ranging from 1 (lowest) to 36 (highest). Students receive both total test scores and subtest scores in each of the EPAS programs. For example, the ACT reports 12 scores: 4 test scores (English, Mathematics, Reading, Science), one composite score, and 7 subscores (2 in English, 3 in Mathematics, and 2 in Reading). The ACT also reports 3 additional scores to students who take the ACT Writing Test: Writing Test score, combined English/Writing score, and narrative comments offered to help students improve their writing.

The ACT Core Curriculum

The core curriculum espoused by ACT is based on the curriculum proposed in 1983 in A Nation at Risk. ACT has long held that the core curriculum best prepares students for college or other forms of postsecondary training. The courses that constitute ACT's definition of the core curriculum, by subject area, are:

- English (four years or more)—One year credit each for English 9, English 10, English 11, and English 12;

- Mathematics (three years or more)—One year credit each for Algebra I, Algebra II, and Geometry. One half-year credit each for Trigonometry, Calculus, or other mathematics courses beyond Algebra II (e.g., Computer Mathematics/Computer Science);

- Social studies (three years or more)—One year credit each for American History, World History, and American Government. One-half year credit each for Economics, Geography, Psychology, and other History (e.g., European, State); and

- Natural sciences (three years or more)—One year credit each for General/Physical/Earth Science, Biology, Chemistry, and Physics.

ACT’s College Readiness Benchmarks

ACT works with colleges to help them develop guidelines that place students in courses that are appropriate for their level of achievement as measured by the ACT. In doing this work, ACT has gathered course grade and test score data from a large number of first-year students and across a wide range of postsecondary institutions. These data provide an overall measure of what it takes to be successful in a standard first-year college course. Data from 98 institutions and over 90,000 students were used to establish ACT’s College Readiness Benchmarks, which are median course placement scores that are directly reflective of student success in a college course.

Success here is defined as approximately a 75 percent chance that a student will earn a grade of C or better, and approximately a 50 percent chance that a student will earn a grade of B or better. The courses are the ones most commonly taken by first-year students in the areas of English, mathematics, social science and natural science. The ACT scores established as ACT’s College Readiness Benchmarks are 18 on the English Test, 22 on the Mathematics Test, 21 on the Reading Test, and 24 on the Science Test.
The College Readiness Benchmarks were based upon a sample of postsecondary institutions from across the U.S. The data from these institutions were weighted to reflect postsecondary institutions nationally. The benchmarks are median course placement values for these institutions and as such represent a typical set of expectations. ACT will work with any particular postsecondary institution or group of institutions within a state to conduct its own validation studies to establish local benchmarks that take specific institutional and student characteristics into account.

We have also established scores on EXPLORE and PLAN that correspond to ACT’s College Readiness Benchmarks, these scores indicating, based on their performance on EXPLORE (8th-9th grades) and PLAN (10th grade), whether students are on course to be ready for college-level work when they graduate from high school. In EXPLORE these scores are 13 on the English Test, 17 on the Mathematics Test, 15 on the Reading Test, and 20 on the Science Test; in PLAN, the scores are 15 on the English Test, 19 on the Mathematics Test, 17 on the Reading Test, and 21 on the Science Test.

**ACT’s College Readiness Standards®**

ACT’s College Readiness Standards® provide a description of the knowledge and skills students are likely to possess based on their scores on EXPLORE, PLAN, and the ACT. The College Readiness Standards are a set of statements that interpret EPAS scores according to the knowledge and skills students in each score range have likely mastered. The College Readiness Standards relate the scores to the types of skills needed for success in high school and beyond. As an example, following are the College Readiness Standards for Reading.
<table>
<thead>
<tr>
<th>Main Ideas and Author's Approach</th>
<th>Supporting Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>13–15 Recognize a clear intent of an author or narrator in uncomplicated literary narratives</td>
<td>Locate basic facts (e.g., names, dates, events) clearly stated in a passage</td>
</tr>
</tbody>
</table>
| 16–19 Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives | Locate simple details at the sentence and paragraph level in uncomplicated passages  
Recognize a clear function of a part of an uncomplicated passage |
| 20–23 Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives  
Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages | Locate important details in uncomplicated passages  
Make simple inferences about how details are used in passages |
| 24–27 Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages  
Infer the main idea or purpose of straightforward paragraphs in more challenging passages  
Summarize basic events and ideas in more challenging passages  
Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages | Locate important details in more challenging passages  
Locate and interpret minor or subtly stated details in uncomplicated passages  
Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages |
| 28–32* Infer the main idea or purpose of more challenging passages or their paragraphs  
Summarize events and ideas in virtually any passage  
Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage | Locate and interpret minor or subtly stated details in more challenging passages  
Use details from different sections of some complex informational passages to support a specific point or argument |
| 33–36† Identify clear main ideas or purposes of complex passages or their paragraphs | Locate and interpret details in complex passages  
Understand the function of a part of a passage when the function is subtle or complex |

*PLAN only  
†PLAN and ACT only
<table>
<thead>
<tr>
<th>Sequential, Comparative, and Cause-Effect Relationships</th>
<th>Meanings of Words</th>
<th>Generalizations and Conclusions</th>
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<td>13–15 Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages Recognize clear cause-effect relationships described within a single sentence in a passage</td>
<td>Understand the implication of a familiar word or phrase and of simple descriptive language</td>
<td>Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives</td>
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<tr>
<td>16–19 Identify relationships between main characters in uncomplicated literary narratives Recognize clear cause-effect relationships within a single paragraph in uncomplicated literary narratives</td>
<td>Use context to understand basic figurative language</td>
<td>Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages</td>
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<tr>
<td>20–23 Order simple sequences of events in uncomplicated literary narratives Identify clear relationships between people, ideas, and so on in uncomplicated passages Identify clear cause-effect relationships in uncomplicated passages</td>
<td>Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages</td>
<td>Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages Draw simple generalizations and conclusions using details that support the main points of more challenging passages</td>
</tr>
<tr>
<td>24–27 Order sequences of events in uncomplicated passages Understand relationships between people, ideas, and so on in uncomplicated passages Identify clear relationships between characters, ideas, and so on in more challenging literary narratives Understand implied or subtly stated cause-effect relationships in uncomplicated passages</td>
<td>Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages</td>
<td>Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives Draw generalizations and conclusions about people, ideas, and so on in more challenging passages</td>
</tr>
<tr>
<td>28–32* Order sequences of events in more challenging passages Understand the dynamics between people, ideas, and so on in more challenging passages Understand implied or subtly stated cause-effect relationships in more challenging passages</td>
<td>Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts</td>
<td>Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on</td>
</tr>
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<td>33–36† Order sequences of events in complex passages Understand the subtleties in relationships between people, ideas, and so on in virtually any passage Understand implied, subtle, or complex cause-effect relationships in virtually any passage</td>
<td>Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage</td>
<td>Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage Understand and generalize about portions of a complex literary narrative</td>
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