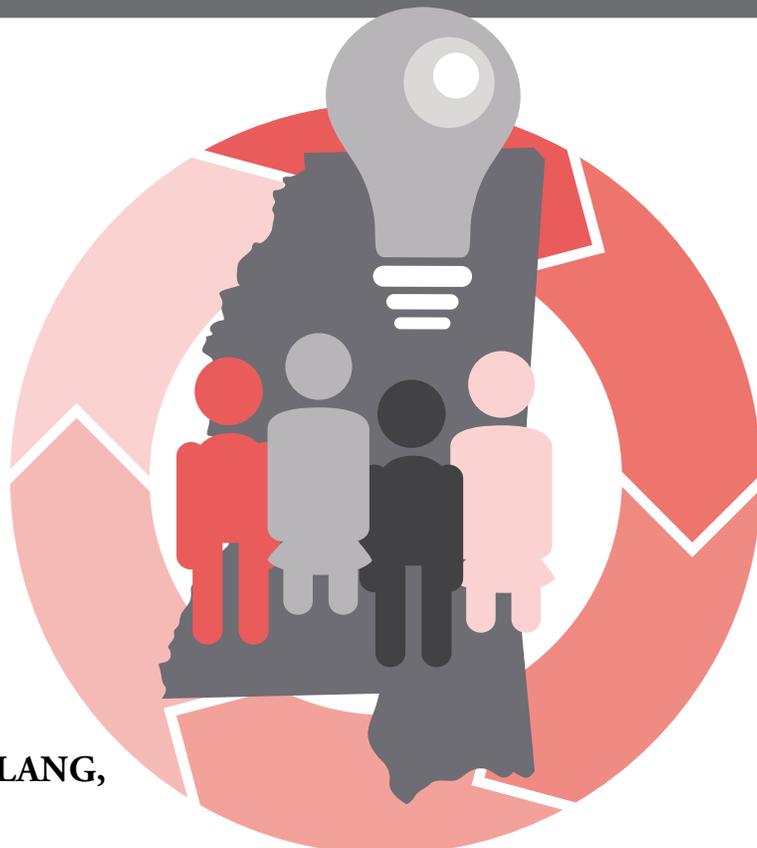


# MS-CPAS2 Tests Students' Career and Technical Education Skills



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The Mississippi Career Planning and Assessment System, Edition 2 (MS-CPAS2) is the multiple-choice test administered online to Mississippi's secondary and postsecondary career and technical education (CTE) students. All students take a state assessment at the end of each CTE course, which is usually an MS-CPAS2 assessment<sup>1</sup>. Students' scores on MS-CPAS2 assessments are used to measure students' technical-skill attainment, which is one of the eight core indicators of performance required for Perkins IV federal reporting. When determining federal funding, the results of MS-CPAS2 are taken into account to ensure that CTE programs are academically rigorous and up-to-date with the needs of business and industry.

Edition 1 of the MS-CPAS was administered in paper and pencil format from 1995-2005. The RCU, ACT, and Southern Illinois University administered the MS-CPAS at various times during those decades. The MS-CPAS2 contract between the Mississippi Department of Education (MDE) and the RCU was initiated in 2007 to provide occupation-specific tests to assess the performance of local CTE programs, as required by the Perkins Act, which stipulates that states must assess CTE students with both lower level and critical-thinking questions. The RCU plays the central role in all development, administration, scoring, reporting, and teacher training related to the MS-CPAS2 and provides stakeholders a single point of contact for all information and activities related to CTE assessment and evaluation.

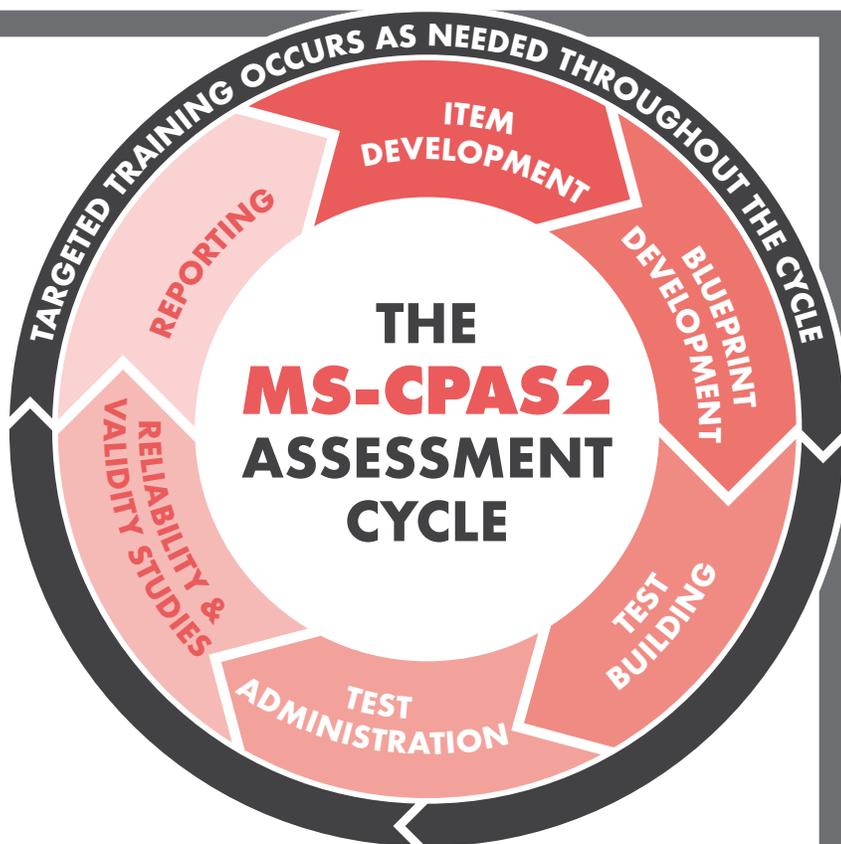
## How are the MS-CPAS2 assessments created?

The RCU uses research-based strategies at each step of the assessment cycle, which includes item development, blueprint development, test building, test administration, readability studies, validity studies, report development, data-mining, and school improvement. A desire to provide educators with useful feedback that can be applied to future rounds of CTE assessment drives the assessment-creation process. As with any cycle, this process never stops, and the steps are regularly enhanced to improve efficiency, both internally and externally.

<sup>1</sup> Students in a few CTE content areas are assessed through performance-based assessment.

# 1. ITEM DEVELOPMENT

The process of developing items (or questions) for use on MS-CPAS2 assessments begins with item alignment and development (IAD) meetings. These meetings, which are facilitated by the RCU, convene subject-matter experts in different areas of CTE to write new test questions and ensure existing questions align with the curriculum. All CTE teachers who take part in IAD meetings first go through Assessment 101 training, administered by the RCU. This training helps participating educators understand the process of assessment and learn to construct quality assessment items that accurately align to the curriculum and include course competencies and objectives, as well as appropriate depth of knowledge indicators. Usually five representative teachers or industry professionals who have attended Assessment 101 are selected by the RCU, with guidance from the MDE, to attend the IAD meetings, which typically span two days. These meetings are conducted on a rolling basis as program curricula are updated and on an as-needed basis at other times throughout the year.



The overarching goal of IAD meetings is to develop a bank of items that can be used on tests. After an IAD meeting, all new test items are sent to educational specialists at the RCU for content approval and editing to ensure accuracy and clarity of content and phrasing. Once approved and edited, the new items go through pilot testing in which they are added to the test bank as field-test items. These field-test items do not count toward students' scores, but are used in assessment statistics to verify the quality of the item. Typically, an item is piloted during one testing cycle before it is counted toward student scores on future assessments.

# 2. BLUEPRINT DEVELOPMENT

Blueprints indicate the number of assessment questions that need to be related to each curriculum unit and the relative emphasis to be placed on each unit. RCU instructional-design specialists and curriculum-development team members develop new blueprints or realign existing ones to conform to changes in curricula, national standards, or diploma options.

# 3. TEST BUILDING

Assessment specialists at the RCU build MS-CPAS2 assessments by following a number of guidelines:

- **Unit Requirements:** Number of items from each unit of the curriculum framework that must be included in the assessment
- **Depth of Knowledge:** Measure of content complexity that assesses the cognitive demand required of the student to respond to a particular test item. Tests should include questions that encompass a range of depth of knowledge levels.

- **Level of Competency:** General concept that students are expected to master as a requirement for satisfactorily completing a unit. Tests should include enough questions to allow students to demonstrate expected levels of competency.

#### 4. TEST ADMINISTRATION

Test coordinators from each school district record and submit their student data for verification through an online system prior to each testing cycle. The purpose of the verification process is to ensure that all CTE students are given the correct test. The RCU provides face-to-face training, webinars, and online demonstration testing to ensure smooth administration of online testing in each district.

#### 5. REPORTING

After each MS-CPAS2 testing cycle, reports are generated and made available to the MDE and school districts. These reports express student test scores as both points earned and as percentage scores. The percentage score is linked to student-performance levels as defined by the MDE's Office of Student Assessment, determining whether a student's score is classified at the Minimal, Basic, Proficient, or Advanced proficiency level. Each report denotes a student's mastery of the curriculum content. Secondary program student scores are disaggregated by units in the CTE pathway. Postsecondary program student scores are disaggregated by courses in each CTE pathway. MS-CPAS2 reports also include student, class, district, and state reports, each of which can be used for program and instructional modification. An interpretive guide to MS-CPAS2 reports can be found at [rcu.msstate.edu/Assessment/MSCPAS2](http://rcu.msstate.edu/Assessment/MSCPAS2).

### Is the MS-CPAS2 reliable and valid?

Reliability is a measure of whether an assessment produces consistent results over time; validity is a measure of whether an exam tests what it purports to test. To ensure that each assessment does a good job of measuring technical-skill attainment, the RCU uses research-based assessment-development strategies. The rigorous MS-CPAS2 creation process, from developing test items at the beginning through conducting item analysis at the end of each test cycle, provides evidence of the validity and reliability of the MS-CPAS2 assessments.

#### RELIABILITY

The RCU determines the reliability of the MS-CPAS2 using the Cronbach's Alpha coefficient of inter-item consistency, which is a way to measure the scale reliability of assessment scores. A higher value indicates a strong relationship between items on the assessment, and a lower value indicates a weaker relationship between assessment items. Values range from 0 to 1; assessments with an alpha value between 0.70 to 0.90 are deemed acceptable. The RCU tests reliability each cycle to ensure all assessments measure in the acceptable range; we use these results as a guide for areas of improvement in future years.

# ASSESSMENT BY THE NUMBERS

Over **10** years  
of the RCU providing  
statewide exams for  
CTE in Mississippi



**57,176**

Mississippi CTE  
students tested  
with MS-CPAS2 in  
2015-2016



**127**

secondary and

**136**

postsecondary  
assessments  
developed in  
2015-2016



**197**

teachers  
participated in IAD,  
reliability-review,  
and validity-review  
meetings in  
2015-2016

## VALIDITY

The MS-CPAS2 is a criterion-referenced assessment, which means it measures student performance according to a set of predetermined objectives or competencies. By comparing student performance against a set of required goals or standards, this approach allows teachers to assess the specific concepts and skills a student has mastered. Students are tested on what they can do, not in relation to what other students can do, as would happen with norm-referenced assessments. The MS-CPAS2 assessments are aligned with each CTE pathway's curriculum, which is typically revised in a four-year cycle. The RCU assessment team calls on teachers to align assessment items to curriculum competencies; assessment items are written by trained subject-matter experts in each program; and the items go through quality-control protocols before they are administered, all adding to the validity of the MS-CPAS2.

## How does the MS-CPAS2 benefit Mississippi's schools and students?

Mississippi CTE instructors create every item used on all MS-CPAS2 assessments, keeping the assessment process inside the state. Because the instructors who create the items are required to complete training in assessment writing, the exam-creation process serves as professional development that both maintains the quality of the MS-CPAS2 and helps students in the classroom by sharpening their teachers' skills.

MS-CPAS2 results help districts across the state assess the strengths and weaknesses of their CTE programs and provide information on how each district performs in relation to the state. Teachers and administrators are trained in analyzing and using data to make informed decisions to improve instruction. The MS-CPAS2 also benefits high school seniors who have failed a subject-area test; students have the option to use MS-CPAS2 scores to meet graduation requirements.

## CTE PATHWAYS TESTED USING **MS-CPAS2** IN 2016-2017

Agriculture, Food,  
& Natural Resources

Architecture &  
Construction

Arts, Audio-Video  
Technology, &  
Communications

Business Management  
& Administration

Education &  
Training

Finance

Health Science

Hospitality  
& Tourism

Human  
Services

Law, Public Safety,  
Corrections, & Security

Manufacturing

Marketing

Science,  
Technology, Engineering,  
& Mathematics

Transportation,  
Distribution, & Logistics



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