California Department of Education  
Executive Office  
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# **MEMORANDUM**

**DATE:** April 11, 2019

**TO:** MEMBERS, State Board of Education

**FROM:** TONY THURMOND, State Superintendent of Public Instruction

**SUBJECT:** Update on Implementing a New State Accountability System: Study Session on the College/Career Indicator.

## Summary of Key Issues

At the September 2018 State Board of Education (SBE) meeting, the SBE approved two new measures for inclusion in the College/Career Indicator (CCI). During the SBE’s discussion on this topic, the SBE requested that a study session on the CCI be held after the release of the 2018 California School Dashboard (Dashboard), when performance levels (colors) were first reported for this indicator.

On May 7, 2019, SBE members are scheduled to participate in a study session on the CCI. The intent of the study session is to ensure that SBE members have a common understanding of the CCI, which was adopted as a state indicator at the July 2016 SBE meeting (<https://www.cde.ca.gov/be/ag/ag/yr16/documents/jul16item02.doc>), and to serve as the foundation for a discussion about the intended purpose of the CCI, i.e., what it is intended to measure, the validity of the measurement, and its role within the multiple measures accountability system. The study session will include an overview of the CCI, followed by an in-depth look at: (1) the individual measures that make up the CCI, (2) the research supporting the CCI model, and (3) the development of new measures for potential inclusion in the CCI.

In preparation for the study session, this Information Memorandum provides a summary of the background of the CCI, including a description of the measures adopted by the SBE, and the development process used to identify CCI measures and their placement in the three performance levels (Attachment 1). Attachment 2 provides an overview of the rigorous and extensive research on which the current CCI model is based. Attachment 3 discusses the development and inclusion of future career measures for the CCI. Finally, a summary of previous Information Memoranda and Agenda Items related to the CCI is provided in Appendix B. Together these attachments serve to ensure that everyone has a strong foundation from which to begin discussion on the CCI at the study session.

The board item for the May 7, 2019 study session will include specific questions for feedback and areas for further discussion on the CCI.

### Purpose of the College/Career Indicator

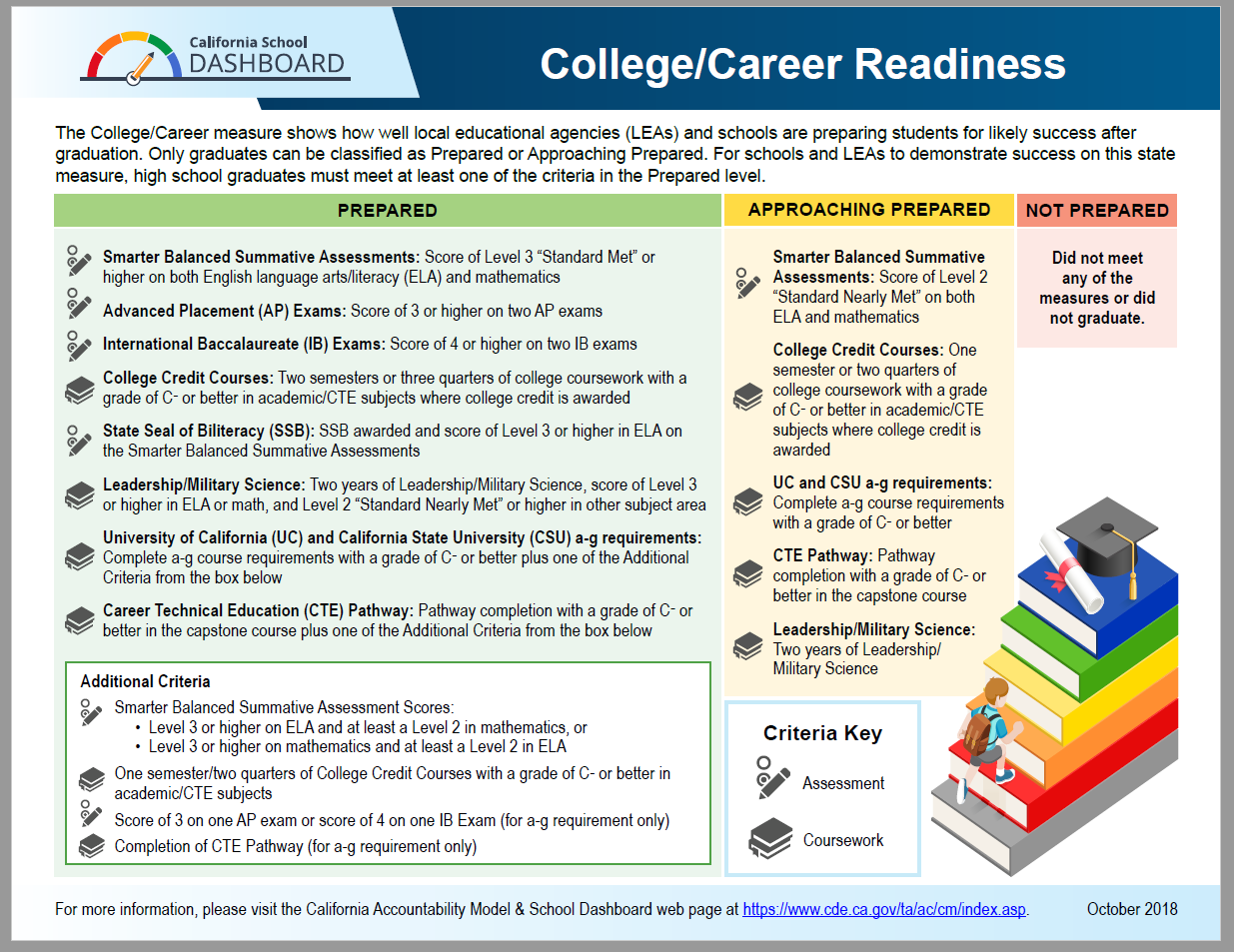
The CCI is one of six state measures reported in the Dashboard. The original intent of the CCI was to emphasize that a high school diploma represents the completion of a broad and rigorous course of study that prepares students for success after high school. It is based on students in each four-year graduation cohort—or grade twelve cohort for students attending schools with Dashboard Alternative School Status (DASS)—and uses specific criteria that are reliant on both test and course completion results to determine if students are “Prepared,” “Approaching Prepared,” or “Not Prepared” for college and/or career. These results, in turn, help inform how well local educational agencies (LEAs) and schools are preparing students for success after high school.

The Local Control Funding Formula (LCFF) places great importance on both the access to and completion of a broad course of study, with each included among the statutorily defined state priority areas. Completion of a Broad Course of Study (LCFF Priority 8) is addressed through the CCI, a state indicator, and emphasizes the outcomes in a broad course of study. Access to a Broad Course of Study (LCFF Priority 7) is a local indicator; LEAs annually report on their progress on the extent that students have access to, and are enrolled in, a broad course of study through the local indicator submission process.

Beginning with the 2018 Dashboard, LEAs and schools received a CCI performance level (color) for the first time, based on results for the graduating class of 2018 (Status) and difference in results between the 2018 and 2017 graduating classes (Change).

### Measures Currently Included in the College/Career Indicator

The CCI measures included in the 2018 Dashboard are summarized on the following one-page flyer which is also available electronically on the CDE California School Dashboard and System of Support web page at <https://www.cde.ca.gov/ta/ac/cm/documents/collegecareerready18.pdf>.This flyer is translated into seven languages and provides a high level overview of the three current levels: “Prepared”, “Approaching Prepared”, and “Not Prepared.” There are eight measures in the CCI “Prepared” level and five measures in the “Approaching Prepared” level. Students can meet the criteria for being “Prepared” or “Approaching Prepared” based on more than one measure. For an accessible version of the CCI flyer, please see Appendix A.



Additionally, the CCI Measures Report, which is posted on the CDE School Dashboard Additional Reports and Data web page, at <https://www6.cde.ca.gov/californiamodel/>, provides information by LEA and school on the CCI. Specifically, the CCI Measures Report displays the number and percent of students by student group that met each of the measures in the CCI Prepared and Approaching Prepared Levels. An example of the information provided in the CCI Measures Report appears in Table 1. This example shows the number and percent of students, by student group, who were “Prepared” based on meeting the criteria for the Career Technical Education (CTE) Pathway. As a reminder, the criteria are as follows:

* Completion of CTE Pathway with a C minus or better in the Capstone Course plus one of the following measures:
  + Smarter Balanced Summative Assessments: At least a Level 3 “Standard Met” on ELA or Mathematics and at least a Level 2 “Standard Nearly Met” in the other subject area
  + One semester/two quarters of College Credit Courses with grade of C- or better (Academic/CTE subjects).

**Table 1: Prepared Students: Met via Career Technical Education**

| All Students | AA | AI | Asian | Filipino | Hisp | PI | White | Two or More  Races | EL | SED | SWD | Foster | Home-less |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 604 | 13 | \* | 174 | 50 | 293 | \* | 57 | 10 | 36 | 415 | 20 | \* | 82 |
| 26.5% | 28.3% | \* | 31.5% | 30.5% | 24.1% | \* | 24.7% | 22.2% | 23.2% | 25.3% | 46.5% | \* | 28.2% |

Note: An asterisk (\*) indicates that the student group consists of zero to 11 students, the minimum size for any reporting. Percentages are based on a denominator of all four-year graduation cohort students who met Prepared in each student group.

Note: Abbreviations used above are fully written out below.

AA: African American

AI: American Indian

Hisp: Hispanic

PI: Pacific Islander

EL: English Learners

SED: Socio-economically Disadvantaged

SWD: Students with Disabilities

The CCI uses the four-year graduation cohort, or the DASS graduation rate for DASS schools, as its base to calculate the CCI. Each student’s **cumulative achievement over their four years in high school** are used to place students across the three CCI performance levels. While the Smarter Balanced grade eleven assessments are often a one-day snapshot taken when a student is in grade eleven, the CCI is a reflection of what students have accomplished from grade nine through grade twelve. Moreover, for students to be placed in the “Prepared” or “Approaching Prepared” levels, they must be considered a graduate, as defined in Table 2.

**Table 2: Graduation Criteria for Four-Year Graduation Cohort and DASS Graduation Rate**

| **4-Year Graduation Cohort** | **DASS Graduation Rate**  **(Modified Method)** |
| --- | --- |
| Standard diploma | * Standard diploma * California High School Proficiency Exam (CHSPE) * High School Equivalency certificate (e.g., GED\*) * Adult education diploma * Early graduates (grade eleven students) * Certificate of Completion **plus** eligible for the California Alternate Assessment (CAA) if under the age of twenty   \*GED: General Educational Development |

Students who meet any of the criteria in the “Prepared” level are placed in that level. If a student does not meet any of the prepared criteria, then the criteria in the “Approaching Prepared” level are reviewed. If a student does not meet any of the approaching criteria (or did not graduate), he or she is counted in the “Not Prepared” level. Because the CCI is criterion based, students are considered “Prepared” if they meet any one of the established criterion. Once all students are assigned a performance level, the school’s performance level is based on the percent of students that met the prepared level.

## Attachment(s)

Attachment 1: Background on the College/Career Indicator (4 Pages)

Attachment 2: Research Supporting the College/Career Indicator Model (15 Pages)

Attachment 3: Development of Career Measures for the College/Career Indicator (2 Pages)

Appendix A: Detailed Description of the College/Career Readiness Flyer—to meet Section 508 of the federal Rehabilitation Act of 1973 requirements (2 Pages)

Appendix B: Summary of Previous State Board of Education Information Memoranda and Agenda Items on the College/Career Indicator (2 Pages)

# **Attachment 1**

## Background on the College/Career Indicator

The College/Career Indicator (CCI) is one of six state indicators reported on the California School Dashboard (Dashboard) and was designed to be an accountability indicator for local educational agencies (LEAs) and schools. LEAs and schools receive a CCI report through the Dashboard and on the California Department of Education (CDE) School Dashboard Additional Report and Data web page, at <https://www6.cde.ca.gov/californiamodel/>. Students do not receive a report on their own individual college/career status.

The original goal of the CCI was to emphasize that a high school diploma represents the completion of a broad and rigorous course of study that prepares students for success after high school. Recognizing that students pursue various options to prepare for success after high school, the model relies on both test results and course completion and allows for fair comparisons across all LEAs and schools.

The CCI was originally adopted by the State Board of Education (SBE) in July 2016 (<https://www.cde.ca.gov/be/ag/ag/yr16/documents/jul16item02.doc>). Performance levels (colors) were reported for the first time in the 2018 Dashboard.

The CCI currently consists of the following eight college and career measures:

1. **Smarter Balanced Summative Assessments**: The grade eleven results from the Smarter Balanced Summative Assessments indicate whether students are ready for college-level work in English language arts/literacy (ELA) and mathematics. The 2017 Smarter Balanced Summative Assessments, taken by the Class of 2018, were used for the 2018 Dashboard.
2. **Advanced Placement (AP) Exam**: The College Board offers AP exams in 38 subjects. Exams are scored on a scale of one to five, where a score of three or higher is considered passing. All AP exams are used for the CCI. LEAs and schools receive credit for any student who passes two AP exams at any point in time during high school.
3. **International Baccalaureate (IB) Exam**: Students participate in the IB starting in grade eleven. The IB offers six subject area exams which are graded on a scale of one to seven. A score of four is considered passing. All IB exams are used for the CCI. LEAs and schools receive credit for any student who passes two IB exams during grade eleven or twelve.
4. **College Credit Course**: Students who pass a college-level course with a grade of C minus or better and earn college credit upon completion of the course are considered for the CCI. (Note that this was previously known as Dual Enrollment.)
5. **State Seal of Biliteracy (SSB)**: The State Seal of Biliteracy recognizes high school graduates who have attained a high level of proficiency in speaking, reading, and writing one or more languages in addition to English. LEAs and schools receive credit for any student who earns a State Seal of Biliteracy and receives at least a “Standard Met” (or Level 3) in ELA on the Smarter Balanced Summative Assessments.
6. **Leadership/Military Science**: Students participate in a physical conditioning program aimed at promoting military values and military precision in group activities, such as rifle corps or marching squad. **For secondary students**, this course **also brings** together information from other subject areas, and relates these skills and knowledge to a military setting. Examples include engine mechanics, electricity or electronics, and aviation technique. Another example, such as Junior Reserve Officers’ Training Corps (JROTC), also fall under the leadership/military science measure.

Students can participate in this program for all four years in high school. LEAs and schools receive credit for any student who completes two or more years of this course with a C minus or better.

1. **“a-g” Completion;** Students who complete either University of California (UC) or California State University (CSU) a-g requirements with a grade C minus or better are identified as completing a-g.
2. **Career Technical Education (CTE) Pathway Completion**: CTE pathway completion consists of:

* Finishing a sequence of courses totaling at least 300 hours, **and**
* Completing a capstone course, with a grade of C minus or better

LEAs and schools receive credit for any student who completes a CTE pathway at any point in time during high school.

The criteria required for the “Prepared” and “Approaching Prepared” levels are provided on the CCI one-page flyer included in page 2 of this Information Memorandum. As depicted in the flyer, several of the criteria for the “Prepared” level require graduates to meet **more than one** measure. For example, if a student scores a level 2 on one of the two Smarter Balanced Assessments (ELA or mathematics), and a level 3 on the other assessment, he/she must also meet another measure , such as completion of a-g courses, in order to be classified as “Prepared.”

Only measures currently collected statewide at the student level are included in the CCI model. However, the model allows for additional new measures and for the removal of measures as they become obsolete.

## Evolution of the College/Career Indicator

The development of the CCI began in 2014 and included extensive input from educational stakeholders and researchers. To assist in determining which measures to include in the CCI, in 2014, the CDE held one statewide webinar and six regional meetings. Approximately 500 people attended the meetings and 146 attendees provided public comment. Based on the regional meeting feedback, the CDE conducted a statewide survey to obtain feedback on the CCI methodology and measures and received 1,768 responses.

To support the decision-making process, the CDE contracted with the Educational Policy Improvement Center (EPIC), with Dr. David Conley as the project lead, to conduct a literature review of the most valid and reliable measures for determining whether or not students were prepared for postsecondary success. Dr. Conley presented six papers to the Public Schools Accountability Act Advisory Committee and presented the final paper at the May 2015 SBE meeting (<https://www.cde.ca.gov/be/ag/ag/yr15/documents/may15item10.doc>). Input from the California Practitioners Advisory Group, the SBE’s Advisory Commission on Special Education, and regional assessment and CTE experts, as well as feedback collected at advocacy stakeholder meetings, assisted with further improvements to the CCI.

The CDE conducted analysis to inform the initial placement recommendations based on comparisons between students’ performance on each CCI measure and the Early Assessment Program (EAP) results for grade eleven ELA and mathematics. Before the implementation of the Smarter Balanced Assessments, participation in the EAP was voluntary and results were based on 15 augmented questions to the California Standards Test in ELA and mathematics. In addition, students had to complete an essay for the English portion of the EAP. The results provided students with an early signal about their readiness for college-level English and mathematics, and if necessary, identified a student’s need for additional preparation. Now, all students who take the Smarter Balanced Assessments receive information on their readiness for college-level courses in English and mathematics.

In June 2016, the CDE conducted two statewide CCI Stakeholder Webinars to share the results of the analyses and to solicit stakeholder feedback on the appropriate placement of each CCI measure across the performance continuum. Based on the feedback received at these Webinars and on numerous simulations, the Technical Design Group (TDG) provided recommendations to the CDE for each of the six CCI proposed measures. The CDE then provided an overview of the structure of the CCI model and an in-depth review of the proposed measures for the CCI to the SBE in an August 2016 Information Memorandum. (<https://www.cde.ca.gov/be/pn/im/documents/memo-dsib-amard-aug16item01.doc>).

In September 2016, the SBE reviewed and approved Status performance categories for the CCI based on the 2013–14 cohort data file, and approved the re-evaluation of the performance categories in September 2017 once the first year of results of Smarter Balanced assessment were included in the CCI. The SBE also directed the removal of the “Well Prepared” category until additional data on career readiness become available (<https://www.cde.ca.gov/be/ag/ag/yr16/documents/sep16item01.doc>).

In September 2018, the SBE adopted two additional measures for inclusion in the CCI (<https://www.cde.ca.gov/be/ag/ag/yr18/documents/sep18item01.docx>).

# **Attachment 2**

## Research Supporting the College/Career Indicator Model

In 2012, Governor Jerry Brown signed into law Senate Bill 1458, which called for California’s school accountability system to expand its focus beyond standardized test scores and incorporate a broader set of measures demonstrating student achievement. The passage of SB 1458 was the catalyst for the development of the College/Career Indicator (CCI). The initial work to expand the accountability system was leveraged with the passage of Local Control Funding Formula (LCFF) legislation in 2013, which included a focus on postsecondary preparedness. As a result, the CCI was developed to capture all the high school student achievement measures specified in LCFF (a–g completion, Career Technical Education [CTE] pathway completion, Advanced Placement [AP] exams, and Smarter Balanced Summative Assessments). In September 2016, the State Board of Education (SBE) adopted the CCI as a state indicator. This Attachment outlines:

* The strong research foundations of the CCI
* The rigorous criteria used to vet and select CCI measures
* The technical soundness of the methodology
* The breadth of expertise of the partners that helped inform the CCI
* The robust data demonstrating the coherence of the CCI model

## Overview of the Process

In building the CCI model, the California Department of Education (CDE):

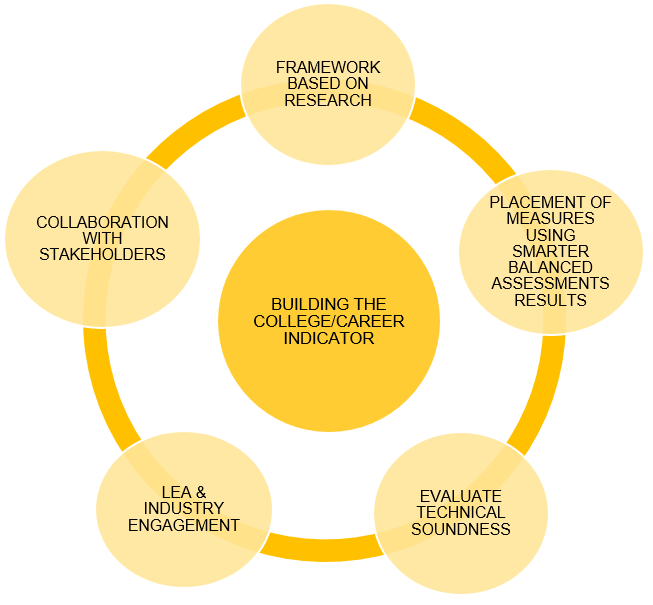
1. Sought the expertise of the leading scholars in the field of college and career readiness in order to a build a strong research foundation and evaluation framework. These experts included:

* Dr. David Conley, University of Oregon
* Dr. Linda Darling-Hammond, Stanford University
* Dr. Michal Kurlaender, University of California, Davis

1. Applied the research findings to set placement levels (e.g., “Not Prepared”, “Approaching Prepared”, “Prepared”) for each CCI measure.
2. Engaged the Technical Design Group (TDG) to evaluate the technical soundness of the CDE’s methodology.
3. Sought the expertise of education and industry leaders (through two advisory groups) to identify and vet additional career measures for the CCI.
4. Collaborated with multiple stakeholder groups—the California Practitioners Advisory Group (CPAG) and the SBE’s Advisory Commission on Special Education (ACSE), regional assessment and CTE experts, and broader stakeholder input sessions—and incorporated their feedback into all recommendations brought to the SBE.

The graphic in Figure 1 illustrates this process.

**Figure 1**



The CDE has adhered to this iterative and collaborative process from the earliest stages of the CCI’s development (in 2014) through the present, as detailed in this paper.

## Research Foundations of the CCI Model

The foundation of the CCI is built upon the research of the leading experts in college and career readiness. Foremost among them is Dr. David Conley, a national leader in defining and promoting college and career readiness, with a strong focus on alignment to the common core state education standards, college and high school course content analysis, high school-college alignment and transition, and large-scale diagnosis and assessment of college readiness. At the University of Oregon, he was the director of the Center for Educational Policy Research, which is housed in the Department of Educational Methodology, Policy, and Leadership. He is also co-chair of the Common Core State Standards Validation Committee and the Smarter Balanced Technical Advisory Committee. In 2014, the CDE contracted with the Educational Policy Improvement Center (EPIC), with Dr. Conley—who at the time was the center’s Chief Executive Officer—as the project lead, to provide analyses of potential measures of college and career preparedness to include in the CCI.

### Framework for Evaluation

Dr. Conley and EPIC staff members developed a framework—based on technical quality, stakeholder relevance, and system utility—to provide rigorous criteria by which measures could be evaluated for inclusion in the CCI. The criteria, and their descriptions, are identified in Table 1.

**Table 1. Criteria Used to Evaluate Potential Measures for Inclusion in the CCI**

| **Criterion** | **Description** |
| --- | --- |
| 1. Research based | Has predictive validity in forecasting postsecondary success |
| 1. Fair comparison | Allows for fair comparisons of subpopulations with attention paid to systematic bias |
| 1. Stability | Demonstrates sufficient reliability and allows trend examination over time |
| 1. Value to students | Is actionable and accepted by students as an indicator of their postsecondary success |
| 1. Public understanding | Provides a clear picture of a school’s status or growth in a manner understood by both educators and non-educators |
| 1. Instructional sensitivity | Measures content, skills, and competencies that can be taught and learned in school |
| 1. Student performance | Emphasizes student performance, not educational processes and inputs |
| 1. Minimizes burden | Minimizes burden to the CDE, districts, and/or schools in terms of time and cost to implement and collect data |
| 1. Student coverage | Includes as many students as possible, considering conditional and universal measures and preferring scale or scalable measures over local or unique measures |
| 1. Various pathways | Recognizes diverse set of postsecondary pathways (e.g., college and/or career) |

Each of these criteria was applied to a broad range of measures—which the CDE had provided based on extensive stakeholder input and expert guidance from the TDG—for possible inclusion in the CCI. The measures, clustered into four general areas, are shown in Table 2.

**Table 2. CCI Clusters and Measures**

| **CCI Clusters** | **CCI Measures** |
| --- | --- |
| Advanced Coursework | * AP * International Baccalaureate (IB) |
| Innovative Measures | * Metacognitive assessment * Performance assessment[[1]](#footnote-1) * California Seal of Biliteracy |
| Course Taking Behavior | * a–g subject requirements (a–g) * CTE Pathway |
| Career Preparedness Assessments | * ACT WorkKeys * National Occupational Competency Testing Institute (NOCTI) * Industry certifications |

### Application of the Framework to the Proposed CCI Measures

Each of the proposed measures were evaluated based on the 10 criteria cited in Table 1. It is important to note that EPIC’s objective at this stage was not to recommend specific measures for inclusion in the CCI but rather to identify strengths, weaknesses, and trade-offs associated with each measure. Each measure was rated on a three-point scale—strong (S), moderate (M), or weak (W)—across each of the 10 criteria.

The results of the evaluations were presented in six white papers and summarized in a final report, “Measures for a College and Career Indicator: Final Report,” published at <https://www.inflexion.org/measures-for-a-college-and-career-indicator-final-report>. The analyses were also shared as an informational item with the SBE at the May 2015 SBE meeting (<https://www.cde.ca.gov/be/ag/ag/yr15/documents/may15item10.doc>) and are summarized in Table 3.**Table 3. EPIC Evaluation of Measures of College and Career Preparedness**

| **Measures** | **Research Base** | **Fair Comparison** | **Stability** | **Value to Students** | **Publicly Understandable** | **Instructional Sensitivity** | **Student Performance** | **Minimizes Burden** | **Student Coverage** | **Various Pathways** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AP** | S | M | S | S | M | S | S | M | M | M |
| **IB** | S | M | S | S | M | S | S | M | M | M |
| **California State Seal of Biliteracy** | W | W | M | M | M | S | S | M | W | S |
| **a–g** | S | M | M | S | S | S | S | S | M | M |
| **CTE Pathway** | M | M | M | M | S | S | S | S | M | M |
| **ACT WorkKeys** | M | M | M | M | M | M | S | S | M | M |
| **NOCTI** | M | M | M | M | M | S | S | M | M | M |
| **Industry Certifications** | W | W | W | S | S | S | S | W | M | M |

### Literature Reviews

As previously mentioned, EPIC produced six white papers detailing its findings on the selected measures. For each white paper, EPIC conducted comprehensive literature reviews examining if and how a selected measure:

* Is associated with postsecondary preparedness and success
* Has been incorporated into other systems of accountability
* Carries important tradeoffs or considerations within the context of California’s educational policy

The literature reviews examined measures related to academic knowledge as well as others measures strongly correlated with college and career preparedness and success (e.g., persistence or grit). The literature reviews were current (e.g., based on data generated within the previous 10 years) and encompassed:

* Theoretical and empirical research (e.g., articles from peer-reviewed journals, books published by university presses)
* Evaluation studies (e.g., university and government reports)
* Strategies adopted or considered in other states

### EPIC Findings

Several important findings emerged from the research, as summarized below:

1. A multi-tiered, multi-dimensional model is a more valid representation of college and career preparedness than one relying on a single measure.
2. No one measure was rated strong or weak across all ten criteria. Dr. Conley noted that “(T)he framework’s design acknowledges that satisfaction of the above criteria is not a simple binary decision of yes or no. Analyses may sometimes place criteria in conflict with one another (e.g., a measure may have a strong research base but place an extraordinary implementation burden on schools).” This was evident in the analysis. While established accountability measures, such as AP and IB exam scores, received the highest measures for stability, measures of course-taking behavior, such as a–g and CTE course completion, rated higher on public understandability while also imposing a lower burden on the state, districts, and schools.
3. Course-taking behavior was singled out as the best predictor of college success, relatively stable over time, understood by educators and non-educators, having little additional impact on schools, and covering all students. “Measuring course-taking behaviors,” writes Dr. Conley, “has the potential to represent multiple secondary pathways. The a–g subject requirements align most immediately with the four–year college pathway. CTE course pathways are most applicable to career pathways. An integrated course pathway has the advantage of being applicable to both the college and career pathways.”
4. One additional measure—which was not rated in the study but which was addressed in EPIC’s final report to the CDE and identified as warranting future attention—was dual enrollment. Dual enrollment programs allow students to take college courses for college credit while they are still enrolled in high school. In its final report, the authors confirm its positive relationships with college aspirations, preparedness, grade point average, enrollment, persistence, and graduation. Although the report acknowledged the variation in quality among dual enrollment programs, it maintained that they “could conceivably be included in a course-taking behavior measure as an indicator of challenging coursework or as an outcome measure based on the grades students receive...”
5. The report also brought attention to Biliteracy, which the Department of Labor has recognized as enhancing employment opportunities, especially within the new global economy. Innovative measures, such as the State Seal of Biliteracy, received a high system utility rating for its ability to be applied universally across all students.

Based on Dr. Conley’s research findings and the academic measures included in LCFF for high school students, the CDE moved forward with the development of a multi-measured CCI that strongly emphasizes course-taking behavior (a–g and CTE courses)—which were identified by Dr. Conley as the best predictor of college success—while also incorporating well-established accountability measures with high degrees of stability (AP and IB exam scores) as well as measures that are positively correlated with preparedness, persistence, and aspiration (dual enrollment). The next step was to determine performance levels for each of these measures, as detailed in the next section.

## Setting the Performance Levels

In 2016, to implement the LCFF focus on postsecondary preparedness and to align with the newly adopted evaluation rubrics, the CDE utilized the research of University of California (UC) Davis Professor Michal Kurlaender to conduct analyses, obtained technical guidance from the TDG, and gathered broad stakeholder feedback, to recommend placement levels for each measure in the CCI model (i.e., CDE recommended whether completion of one CCI measure alone sufficed to qualify a student as “Prepared” or whether it should be paired with an additional CCI measure).

### Research Underpinnings

Dr. Michal Kurlaender, Professor of Education Policy at the University of California, Davis, has conducted extensive research on the effectiveness of high school assessments—including the SAT and the Smarter Balanced Summative Assessments[[2]](#footnote-2)—to predict college success. In one early study[[3]](#footnote-3), postsecondary data from the California State University (CSU) and Community College campuses were used along with high school assessment data for all grade eleven students in California, in order to evaluate the relationship between college course-taking behavior and the need for postsecondary remedial coursework.[[4]](#footnote-4) Dr. Kurlaender’s early analyses revealed the following findings:

* Students in higher level math courses are more likely to be ready for college level courses
* Students who were proficient or advanced on the mathematics high school assessments were very likely to be ready for college level courses
* Students who were advanced on the English language arts (ELA) high school assessments were very likely to be ready for college level courses.
* a–g completion alone does not ensure that students are prepared for college-level coursework, as evidenced by the high percentage of students who completed these courses and later enrolled in remedial classes in college.

Because the state assessments are an included measure for high school students in LCFF and based on Dr. Kurlaender’s findings, the CDE decided that it was appropriate to compare each proposed CCI measure against student performance on state standardized tests. (Note that the initial work was based on results from the previous California State Assessment (CST) since Smarter Balanced Summative Assessment results for the graduating cohort could not be matched at the time. Although the assessments are focused on college readiness, CDE staff determined it was appropriate to use the same criteria for the CTE pathway completion based on information that students preparing for a technical career were required to have strong reading and math skills.) The CDE worked with the TDG—along with key stakeholders across the state—to set initial placement levels for the CCI measures. The recommended placement levels were presented to the SBE in an August 2016 Information Memorandum (<https://www.cde.ca.gov/be/pn/im/documents/memo-dsib-amard-aug16item01.doc>) and are summarized below.

#### **CTE Pathway Completion**

Approximately 17 percent of students in the four-year graduation cohort were found to have completed at least one CTE Pathway. Further analyses on these students revealed that CTE Pathway completion is evenly distributed among racial and ethnic student groups, as well as among English learners, socioeconomically disadvantaged students, and students with disabilities, making this an attractive CCI measure. However, analyses showed that over 64 percent of students who completed a CTE Pathway scored “Not Ready” on the Early Assessment Program for ELA. For this reason, CTE Pathway completion alone was deemed insufficient to qualify a student as “Prepared” and should be paired with an additional CCI measure.

#### **Completion of a–g Requirements**

Over 35 percent of students in the four-year graduation cohort were reported to have met a–g requirements. Among these students, 36.2 percent scored “Not Ready” on the EAP for ELA. In addition, 40 percent of students admitted to CSU campuses—almost all of whom completed a–g courses or an equivalent—were required to enroll in at least one remedial English or mathematics course. Therefore, it was determined that a–g completion alone was not a sufficient indicator of college preparedness and that it should be paired with an additional CCI measure.

#### **Advanced Placement**

Among those students who passed two AP exams, 77.3 percent scored “Ready” on the EAP for both ELA and mathematics or “Ready” in one content area and “Conditionally Ready” in the other. Given this evidence of preparedness, students who passed two AP exams were placed in the “Prepared” level. There was no need, it was concluded, to supplement the AP with an additional measure.

#### **International Baccalaureate**

Students who passed two IB exams were placed in the “Prepared” level, indicating that the IB program was rigorous and academically challenging. There was no need, it was concluded, to supplement the AP with an additional measure.

#### **College Course Credit (Formerly Dual Enrollment)**

Among students who took two college courses, 48 percent scored “Ready” on the EAP for ELA. Among those who took three college courses, 61 percent scored “Ready.” Given the strong alignment of this measure with college preparedness, it was agreed that students who complete two semester or three quarters of college coursework with a grade of C- or better (and received college credit) should be placed in the “Prepared” level of the CCI. There was no need, it was concluded, to supplement college courses with an additional measure.

## Data Supporting the Placement Settings

In order to demonstrate the soundness of the CCI model and its measures, the CDE conducted analyses comparing results from the Smarter Balanced Summative Assessment and performance on other CCI measures. The results, based on student data from the Class of 2016, are summarized in Table 4.

**Table 4**

| **CCI Criteria** | **Number of Prepared Students Who Met CCI Criteria** | **ELA:**  **Number & Percentage of Students Who Received Level 1 or 2** | **ELA:**  **Number & Percentage of Students Who Received Level 3 or 4** | **Math: Number & Percentage of Students Who Received Level 1 or 2** | **Math: Number & Percentage of Students Who Received Level 3 or 4** |
| --- | --- | --- | --- | --- | --- |
| Two AP Exams | 64,818 | 2,164 (3%) | 59,071 (91%) | 7,719 (12%) | 53,325 (82%) |
| Two IB Exams | 3,868 | 141 (4%) | 3,580 (93%) | 537 (14%) | 3,163 (82%) |
| College Course Credit (One Year) | 725 | 79 (11%) | 609 (84%) | 262 (36%) | 431 (59%) |
| a–g *plus* Smarter Balanced Summative Assessments | 140,234 | 3,882 (3%) | 136,352 (97%) | 40,570 (29%) | 99,664 (71%) |
| a–g *plus* CTE Pathway | 35,045 | 7,009 (20%) | 26,729 (76%) | 16,591 (47%) | 17,009 (49%) |
| CTE Pathway *plus* Smarter Balanced Summative Assessments | 35,093 | 1,258 (4%) | 33,835 (96%) | 14,091 (40%) | 21,002 (60%) |
| CTE Pathway *plus College Course Credit* (One Year) | 75 | 14 (19%) | 60 (80%) | 36 (48%) | 37 (49%) |

Table 4 shows that performance on the Smarter Balanced Summative Assessments positively correlates with performance on other CCI measures. For instance, 91 percent of students who received a score of 3 or higher on two AP exams also met or exceeded the standard for ELA.

**New Research Supporting the Placement Settings**

As mentioned earlier, the original performance levels were set based on EAP (and CST) data. The Smarter Balanced Summative Assessments have since replaced the EAP for use in the CCI determinations. In March 2018, Dr. Kurlaender published a new report—“Predicting College Success: How Do Different High School Assessments Measure Up?”—which incorporates new assessment data from the Smarter Balanced Summative Assessments and its effectiveness in predicting college readiness. It describes early college outcomes for the 2014–15 cohort of California students in grade eleven, the first cohort of grade eleven students to take the Smarter Balanced Summative Assessments[[5]](#footnote-5). The findings of the study, posted at <https://edpolicyinca.org/sites/default/files/SBAC-SAT%20Paper.pdf>, are summarized below:

* The Smarter Balanced Summative Assessments are as strong a predictor of college performance at the CSU as the SAT.
* Both the Smarter Balanced Summative Assessments and the SAT are strong predictors of college performance at UC Davis, although the SAT is a slightly stronger predictor of first year performance.
* The overall pattern of results holds for different student groups (race/ethnicity, socioeconomically disadvantaged, and by high school quality) at both the CSU and the UC Davis.

## Technical Soundness of the Methodology

The CDE engaged the TDG to evaluate the technical soundness of the methodology of the CCI model at each stage of development. The TDG is composed of national experts in K–12 testing and assessment. In July 2016, when the original CCI measures (cited above) were analyzed and recommended to the SBE, TDG members included:

* Edward Haertel, Professor Emeritus at Stanford Graduate School of Education and a national leader in educational psychology
* Christine Hikido, Director of Research and Evaluation at Elk Grove Unified School District
* Brian Stecher, Adjunct Senior Social Scientist at the Rand Corporation
* Roger Yoho, Psychological Testing Director at Corona-Norco Unified School District
* Eric Crane, Senior Research Associate with the Innovation Studies Program at WestEd
* Dominic Zarecki, Senior Data Analyst at Fortune School of Education
* Noah Bookman, Chief Strategy Officer of the CORE Districts

The TDG reviewed several CCI models as well as different options for calculating the CCI. In addition, the TDG evaluated several methodologies for determining Status and Change cut scores for the CCI, including using an average of all students in the graduating cohort across the three CCI performance levels. At its June 2017 meeting, the TDG advised that the average methodology does not provide meaningful information for schools or the public. The TDG expressed concerns that using an average would detract from the original intent of using the CCI to provide information on the number of graduates who are prepared for college or career. Therefore, the TDG recommended that the methodology be based on the percent of students in the prepared performance level.

## Identification and Vetting of Career Measures: Convening Advisory Groups

From the earliest stages of its work to develop CCI measures, the CDE has been, and continues to be, committed to collaborating with a broad and geographical diverse group of stakeholders, including researchers, educators, and industry leaders throughout the state. This section discusses the collaborative work undertaken to develop career measures for the CCI.

### Research Underpinnings

While the initial research, conducted by EPIC, emphasized college readiness measures, the CDE also relied upon the research of Dr. Linda Darling-Hammond, and her colleagues at the Stanford Center for Opportunity Policy in Education (SCOPE), to identify appropriate career readiness measures. In their report, “Recognizing College and Career Readiness in the California School Accountability System,” Dr. Darling-Hammond and Soung Bae proposed three types of career readiness measures for inclusion in the CCI:

1. Completion of high-quality, integrated courses of study that support career readiness, analogous to the completion of a–g courses (e.g., CTE pathways).
2. Satisfactory performance in a work-based learning experience (e.g., internships, apprenticeships) that meets specific standards, such as those adopted by the California Partnership Academies or the National Academy Foundation.
3. Achievement on career-readiness assessments (e.g., ACT WorkKeys, NOCTI Job-Ready and Pathway Assessments), including those that result in industry-approved certificates, credentials, licenses, and badges that are valued by postsecondary institutions and businesses.

In addition, the report recognized the value of student profiles in motivating students to create and pursue important goals for themselves. These profiles would accompany students when they leave high school. The report singled out the State Seal of Biliteracy as an example of an accomplishment that might warrant formal recognition on the diploma or be included in a graduation portfolio.

Dr. Linda Darling-Hammond presented her policy recommendations to the SBE as an informational item at the May 2015 meeting. The full report is published on the Stanford University Web site, at <https://edpolicy.stanford.edu/sites/default/files/publications/recognizing-college-and-career-readiness-california-school-accountability-system_1.pdf>.

Based on Dr. Linda Darling-Hammond’s recommendations, and at the request the SBE members to strengthen career measures in the CCI, the CDE is now collecting data on career-centered coursework completion, and work-based learning experiences, which will be considered for inclusion in CCI for future Dashboards.

### Industry Engagement

In 2017, the CCI Work Group was established to advise the CDE on the development of additional career measures to counterweigh the overemphasis of college measures in the indicator. The CCI Work Group is composed of both practitioners and researchers from across the state, including:

* Bonnie Munguia, Brawley Union High School District
* Brian Rowse, Santa Barbara Unified School District
* Gina Boster, Corona-Norca Unified School District
* Kathy Ruble, Manteca Unified School District
* Chun-Wu Li, Riverside County Office of Education
* Jeff Hittenberg, Orange County Office of Education
* Susan Steward, Butte County Office of Education
* Mike Patterson, California Teachers Association
* Matt Roberts, California Community Colleges Chancellor’s Office
* Michal Kurlaender, UC Davis
* Wendell Callahan, UC San Diego
* Soung Bae, Stanford University
* Eric Crane, WestEd
* Jason Willis, WestEd
* Diane Grotjohn, Coalition of Alternative Education Accountability
* Dustin Sperling, Central Region Agriculture Education Pathways Grant
* Jeremy Smith, State Building and Construction Trades Council of California
* Rebecca Bettencourt, E. & J. Gallo Winery
* Stephanie Houston, Colton-Redlands-Yucaipa Regional Occupational Program

Based on their collective work, two new CCI measures—State Seal of Biliteracy and Leadership/Military Science—were adopted by the SBE in September 2018 (<https://www.cde.ca.gov/be/ag/ag/yr18/documents/sep18item01.docx>) and included in the 2018 Dashboard.

In 2017, the CDE and the John W. Gardner Center for Youth and Their Communities at Stanford University, under the leadership of Dr. Jorge Ruiz de Velasco, established the California Advisory Task Force on Alternative Schools. The Task Force has broad and geographically diverse representation and is comprised of 22 members. To facilitate the work of the Task Force, three subcommittees were formed: 1) Modified Academic Indicators, 2) Local Indicators of Student Progress, and 3) Emerging Best Practices. The charge of the Modified Academic Indicators Subcommittee was to develop modified measures for alternative schools. This Subcommittee consists of the following members:

* Alysse Castro, San Francisco Unified School District
* Milisav Illic, Corona-Norco Unified School District
* Robert Eiseman, Los Angeles Unified School District
* Roger Rice, Ventura County Office of Education
* Diana Walsh-Reuss, Riverside County Office of Education
* Joel Leagans, Santa Clara County Juvenile Court Schools
* Heather DiFede, East County Special Education Local Plan Area
* Mike Ervin, Home Tech Charter School
* Ernie Silva, SIATech Schools
* Diane Grotjohn, APlus
* Machele Kilgore, California Consortium of Independent Study,
* Jorge Ruiz de Velasco, John W. Gardner Center for Youth and Their Communities, Stanford University

A full description of the career measures under consideration, along with proposed criteria for these measures, were presented to the SBE in a February 2018 Information Memorandum (<https://www.cde.ca.gov/be/pn/im/documents/memo-pptb-amard-feb18item02.docx>).

**Collaboration with Stakeholders**

Throughout the development of the CCI model, the CDE has created a continuous feedback loop, conferring with a broad, diverse, and geographically representative group of stakeholders. In addition to conducting statewide Webinars and regional meetings across the state, the CDE reports regularly to the following groups:

* CPAG
* ACSE
* Regional Assessment Network
* LCFF Stakeholder Group

During its meetings with these stakeholder groups, the CDE shares any new CCI measures under consideration and actively seeks their feedback and recommendations, which are incorporated into the final set of recommendations brought to the SBE.

# **Attachment 3**

## Development of Career Measures for the College/Career Indicator

With the adoption of the College/Career Indicator (CCI) in September 2016, the California Department of Education (CDE) committed to building out the CCI over several years as data becomes available to include additional career and college measures.

During deliberations at the September 2016 State Board of Education (SBE) meeting, and in subsequent conversations, there were concerns that the CCI did not contain sufficient career measures. To explore how to provide a better balance of college and career measures in the CCI, the California Department of Education (CDE) established a CCI Work Group, which consists of researchers, business representatives, and Career Technical Education (CTE) subject matter experts throughout the state, to advise and provide recommendations on incorporating new career measures in the CCI.

At the September 2017 SBE meeting, the CDE presented a three-year plan to fully build this indicator (<https://www.cde.ca.gov/be/ag/ag/yr17/documents/sep17item02.doc>).

In February 2018, the CDE shared an Information Memorandum that provided an update on the CDE’s progress in reporting the CCI, the status of the three-year CCI timeline presented to the SBE in September 2017, an update on the collection of new career measures for future California School Dashboards (Dashboards), and comparisons between student performance on the Smarter Balanced Summative Assessment and student performance across CCI measures currently reported in the Dashboard   
(<https://www.cde.ca.gov/be/pn/im/documents/memo-pptb-amard-feb18item02.docx>).

In addition to working with the CCI Workgroup, the Analysis, Measurement, and Accountability Reporting Division has collaborated with other divisions across the CDE (Career and College Transition, Educational Data Management, Special Education, and Assessment Development and Administration), as well as stakeholder groups such as the Alternative Schools Task Force (a joint project with the John W. Gardner at Stanford University, which is supported by a grant from the Stuart Foundation) and the Advisory Commission on Special Education to:

* Define the career measures recommended by the CCI Work Group for collection through the California Longitudinal Pupil Achievement Data System (CALPADS).
* Identify career measures specific to Dashboard Alternative Schools Status (DASS) schools.

Beginning in fall 2018, all DASS schools received a Dashboard for the first time. They are held accountable for the same state indicators, although modified measures may be used to more fairly evaluate the success of alternative schools that serve high-risk students. Therefore, while all of the criteria for the CCI are available for DASS schools, modified measures, which are currently being developed by the Alternative Schools Task Force, will also be applied pending further analysis and SBE action.

Career measures to be collected in CALPADS during the 2018–19 school year, for possible inclusion, pending further analysis and SBE action, in the 2019 Dashboard, include:

* Completion of a state or federal job program (limited to DASS schools)
* Completion of pre-apprenticeship (both DASS and non-DASS schools)
* Work Force Readiness Certificate (both DASS and non-DASS schools)

The proposed measure of completing a state or federal job program is limited to DASS schools for accountability purposes, as this program is not available to non-charter schools. Once the data is collected an analyses will need to be conducted to determine if this measure should be extended to non-DASS charter schools. In addition, completion of the Workability program, transition programs offered by Department of Rehabilitation, and Work-based learning, currently collected through the California Special Education Management Information System (CASEMIS), will be evaluated for possible inclusion in the 2019 Dashboard as a modified measure for students with an IEP.

Finally, CDE staff are developing an application process for Individual Industry Credentials. These stackable credentials, which are earned through passage of assessments at the Beginning Level, Intermediate/Approaching Prepared Level, and Advanced/Prepared Level, entail a rigorous and multi-step approval process, which begins at the local level. The assessment is first reviewed by local businesses and industry groups and then submitted to the district superintendent for approval. Once approved, the superintendent submits the assessment to the CDE, which shares it with statewide advisory groups, who then determine whether the assessment meets statewide standards and if successful passage of the assessment will be recognized by the industry as a valid measure of readiness. The CDE currently has a relationship with the Career and Technical Education Consortium of States and the National Occupational Competency Testing Institute, while districts have a relationship with Precision Exams.

The CDE anticipates that the passage of approved exams will be collected in CALPADS in the 2019–20 school year.

# **Appendix A**

**Detailed Description of the College/Career Readiness Flyer—to meet Section 508 of the federal Rehabilitation Act of 1973 requirements**

This attachment contains the full description of the one-page College/Career Indicator (CCI) flyer displayed on page 2 of this SBE Information Memorandum. This attachment is being provided as required by Section 508 of the federal Rehabilitation Act of 1973.

## College/Career Readiness

The College/Career measures show how well local educational agencies (LEAs) and schools are preparing students for likely success after graduation. Only graduates can be classified as “Prepared” or “Approaching Prepared”. For schools and LEAs to demonstrate success on this state measure, high school graduates must meet at least one of the measures in the prepared level.

### Prepared

* **Smarter Balanced Summative Assessments:** Score of Level 3 “Standard Met” or higher on both English language arts/literacy (ELA) and mathematics
* **Advanced Placement (AP) Exams:** Score of 3 or higher on two AP exams
* **International Baccalaureate (IB) Exams:** Score of 4 or higher on two IB exams
* **College Credit Courses:** Two semesters or three quarters of college coursework with a grade of C- or better in academic/CTE subjects where college credit is awarded
* **State Seal of Biliteracy (SSB):** SSB awarded and score of Level 3 or higher in ELA on the Smarter Balanced Summative Assessments
* **Leadership/Military Science:** Two years of Leadership/Military Science, score of Level 3 or higher in ELA or math, and Level 2 “Standard Nearly Met” or higher in other subject area
* University of California (UC) and California State University (CSU) **a-g requirements:** Complete a-g course requirements with a grade of C- or better plus one of the Additional Criteria below:
  + Smarter Balanced Summative Assessment Scores:
* Level 3 or higher in ELA and at least a Level 2 in mathematics, or
* Level 3 or higher on mathematics and at least a Level 2 in ELA
  + One semester/two quarters of College Credit Courses with a grade of C- or better in academic/CTE subjects
  + Score of 3 on one AP Exam or score of 4 on one IB Exam
  + Completion of CTE Pathway
* **Career Technical Education (CTE) Pathway:** Pathway completion with a grade of C- or better in the capstone course plus one of the Additional Criteria below:
  + Smarter Balanced Summative Assessments: At least a Level 3 in ELA and at least a Level 2 in mathematics, or at least a Level 3 in mathematics and at least a Level 2 in ELA,
  + One semester/two quarters of College Credit Courses with a grade of C- or better in academic/CTE subjects

### Approaching Prepared

* **Smarter Balanced Summative Assessments:** Score of Level 2 “Standard Nearly Met” on both ELA and mathematics
* **College Credit Courses:** One semester or two quarters of college coursework with a grade of C- or better in academic/CTE subjects where college credit is awarded
* **UC and CSU a-g requirements:** Complete a-g course requirements with a grade of C- or better
* **CTE Pathway:** Pathway completion with a grade of C- or better in the capstone course
* **Leadership/Military Science:** Two years of Leadership/Military Science

### Not Prepared

The Student did not meet any of the measures or did not graduate, so considered Not Prepared.

# **Appendix B**

**Summary of Previous State Board of Education Information Memoranda and Agenda Items on the College/Career Indicator**

In January 2015, the State Board of Education (SBE) reviewed the work being conducted by the California Department of Education (CDE) to incorporate the College/Career Indicator (CCI) in the Academic Performance Index as required by California *Education Code* Section 52052(H) (<https://www.cde.ca.gov/be/ag/ag/yr15/documents/jan15item03.doc>)

In June 2015, the SBE reviewed information on other state’s accountability system including an overview of eight states’ college and career indicators (<https://www.cde.ca.gov/be/pn/im/documents/memo-dsib-amard-jun15item01.doc>).

In July 2016, the SBE reviewed and approved the CCI as a state indicator to be part of the design of the Local Control Funding Formula evaluation rubrics (which is currently reported through the California School Dashboard [Dashboard]) (<https://www.cde.ca.gov/be/mt/ms/documents/finalminutes1314jul2016.doc>).

In September 2016, the SBE reviewed and approved Status performance categories for the CCI based on the 2013–14 cohort data file, and approved the re-evaluation of the performance categories in September 2017 once the first year of results of Smarter Balanced assessment were included in the CCI. The SBE also directed the removal of the “Well Prepared” category until additional data on career readiness become available (<https://www.cde.ca.gov/be/ag/ag/yr16/documents/sep16item01.doc>).

In September 2017, the SBE reviewed the clarification to one of the CCI criterion in the “Approaching Prepared” level within the CCI and the recommended revised Status cut scores based on the Class of 2016. The SBE approved the revised cut scores for Status. The SBE also reviewed the three-plan timeline for fully building out this indicator to include additional career and college measures (<https://www.cde.ca.gov/be/ag/ag/yr17/documents/sep17item02.doc>).

In February 2018, the SBE received an Information Memorandum on the implementation of the CCI, including the development of new career measures, such as Leadership/Military Science: ROTC, in consultation with the CCI Work Group and California Task Force on Alternative Schools, and performance comparisons on the academic measures in the CCI  
(<https://www.cde.ca.gov/be/pn/im/documents/memo-pptb-amard-feb18item02.docx>).

In March 2018, the SBE was informed of the revisions made to the Fall 2017 Dashboard, including items that were being prepared for the 2018 Dashboard release, such as the potential use of the following three CCI measures: State Seal of Biliteracy, Golden State Seal Merit Diploma, and Articulated Career Technical Education Courses (<https://www.cde.ca.gov/be/ag/ag/yr18/documents/mar18item01.docx>).

In April 2018, the SBE received an Information Memorandum that provided an overview of the research conducted in the development of the CCI and the rigorous vetting criteria and processes that were applied to select CCI measures (<https://www.cde.ca.gov/be/pn/im/documents/memo-pptb-amard-apr18item02.docx>).

In May 2018, the SBE received a presentation from an LEA on their local use of the CCI.

In August 2018, the SBE received an Information Memorandum on the additional measures proposed for the CCI   
(<https://www.cde.ca.gov/be/pn/im/documents/memo-pptb-amard-aug18item02.docx>).

1. In his final report, Dr. Conley wrote that metacognitive assessment and performance assessment cannot currently match the type of institutional stability that other assessments (e.g., as produced by the ACT, College Board, and IB) offer, but that they hold great promise. The CDE did not include these measures in its initial recommendations but is investigating ways to incorporate them into the CCI in the future. [↑](#footnote-ref-1)
2. The sample includes grade eleven students statewide who took both the Smarter Balanced Summative Assessments and SAT and who subsequently enrolled as first time freshmen (in 2016–17) at one of the 23 campuses of the CSU system. (A smaller analytic sample included those who enrolled at the UC Davis.) [↑](#footnote-ref-2)
3. Presented in September 2013 and posted at <https://education.ucdavis.edu/sites/main/files/file-attachments/kurlaenderjacksonpsaa9-6-13_presentation-distribute.pdf>. [↑](#footnote-ref-3)
4. Dr. Kurlaender’s early analyses were based on data from the Early Assessment Program (EAP), which were, in turn, based on results from the enhanced Standardized Testing and Reporting (STAR) Program. The Smarter Balanced Summative Assessments have since replaced the STAR. [↑](#footnote-ref-4)
5. The sample includes grade eleven students statewide who took both the Smarter Balanced Summative Assessments and SAT and who subsequently enrolled as first time freshmen (in 2016–17) at 1 of the 23 campuses of the CSU system. (A smaller analytic sample included those who enrolled at the UC Davis.) [↑](#footnote-ref-5)