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Identifying a School Quality/Student Success Indicator for ESSA:
Requirements and Considerations

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THE COUNCIL OF CHIEF STATE SCHOOL OFFICERS

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Identifying a School Quality/Student Success Indicator for ESSA: Requirements and Considerations

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With the passage of the Every Student Succeeds Act (ESSA), states have been given authority to construct a school accountability model based on their unique contexts that can best advance college- and career-ready outcomes. One of the most noteworthy elements of the revised statute is the requirement for the inclusion of an indicator of school quality or student success. The school quality or student success indicator is sometimes referred to as the "5th indicator," as it is required in conjunction with four other indicators: academic achievement, student growth, graduation rate, and progress in achieving English language proficiency. To ensure the school quality or student success indicator contributes to a state's system of school and district accountability, ESSA outlines several requirements[1].

Table 1. School Quality/Student Success Indicator Requirements

1. The indicator(s) allows for meaningful differentiation in school performance.[2]
2. The indicator(s) must be valid and reliable.
3. The same indicator(s) must be used within each grade span.
4. The indicator(s) must be comparable and applicable statewide.
5. The indicator(s) must be measured and reported annually for all students and disaggregated by sub-group[3].

This brief addresses each of these requirements, highlighting key factors to consider when identifying, evaluating, and implementing a school quality or student success indicator for inclusion in a state's accountability system. While this document serves as a useful resource, it does not address the full range of evidence necessary for a state to meet the requirements defined in Table 1, which will vary depending on the indicator, its associated measures, and a state's unique accountability system design. The final section of this brief provides examples of school quality and student success indictors and research supporting those indicators to help stimulate thinking about the range of alternatives available. For a more comprehensive overview of considerations for selecting a 5th indicator, refer to Marion and Lyons (2016)[4].

1 The relevant statutory language for the school quality or student success indicator can be found in subsection (c)(4)(B)(v) of Section 1111 of ESSA.

2 ESSA also outlines requirements related to the role the SQSS indicator can play in in providing for meaningful differentiation among schools. Specifically, subsection (c)(4)(C) of section 1111 states that, in making annual determinations, the indicators of Academic Achievement, Academic Progress, Graduation Rate and Progress in English Language Proficiency must be given "substantial weight" and "in the aggregate, much greater weight" than the School Quality or Student Success indicator(s).

3 Relevant sub-groups are defined in subsection (c)(2) and include economically disadvantaged students, students from major racial and ethnic groups, children with disabilities and English learners.

4 See: http://www.nciea.org/publication_PDFs/Marion%20Lyons_ESSA%20Accountability_5th%20Indicator_111416.pdf

REQUIREMENTS FOR SCHOOL QUALITY OR STUDENT SUCCESS INDICATORS UNDER ESSA

THE INDICATOR ALLOWS FOR MEANINGFUL DIFFERENTIATION IN SCHOOL PERFORMANCE

To identify schools that are struggling or in need of support, the school quality or student success indicator(s) must be measured in a way that highlights variability among schools. Specifically, the indicator should distribute schools along the score scale of interest (e.g., scores, ratings, categories, etc.) to clearly distinguish those performing well from those performing badly. Two types of evidence should be considered when evaluating whether an indicator supports meaningful differentiation:

- **Evidence supporting the technical quality of the underlying scale or measure** — evidence that the underlying measure (or measures) supports a wide range of performance and provides for accurate measurement along that range.
- **Evidence that the indicator produces a spread and distribution of school performance** — evidence that the observed distribution of school performance spans the range of potential outcomes (i.e., there are no floor and ceiling effects).

When evaluating an indicator for appropriate differentiation, it is important to consider exactly how the indicator results will be used to inform school accountability. Variability across schools should be observed at the score level used to support school accountability calculations. This may be an average score, index score, achievement level, or some other measure depending on how the indicator is defined (e.g., average school climate score, post-secondary readiness index, school growth achievement level).[5] Furthermore, since indicator results must be reported by achievement level on state and local education agency (LEA) report cards[6], the standard setting process for each indicator should be informed by impact data[7] and result in performance standards that serve to distribute schools across levels.

It important to note that some school quality or student success indicators may not show variation among schools but still add value to a state's accountability system by motivating desired actions or encouraging participation in important school initiatives (e.g., student completion of a career interest survey). While these indicators may not be appropriate for use as a 5th indicator under ESSA, reporting on these measures can provide useful diagnostic information that serves to inform the development of school improvement plans and drive continuous improvement efforts for *all* schools, including those not identified for comprehensive or targeted support.

5 For an overview of the different procedures used to calculate school performance on specific accountability indicators see http://www.ccsso.org/Documents/2016/ESSA/KeyIssuesinAggregatingIndicators.pdf

6 ESSA requires that indicator results be reported in terms of three achievement levels.

7 Specifically, data that indicates the percentage of schools that would fall in each performance level in light of different performance standard recommendations.

THE INDICATOR IS VALID AND RELIABLE

The school quality or student success indicator(s) must be selected and defined in a manner that supports the state's goals and theory of action, and provides for valid, consistent inferences about the performance of districts and schools. The following questions can help states evaluate the coherence of a proposed school quality or student success indicator and ensure it provides accurate inferences related to the construct of interest:

1. Does the school quality or student success indicator add unique value to the accountably system by providing information about school performance that cannot be gleaned through other indicators in the system?

2. Is the indicator defined/measured in a way that complements, rather than contradicts, the other indicators in the system? Specifically, would efforts to increase school performance on the school quality or student success indicator have an unintentional, negative impact on other indicators in the system?

3. Does the school quality or student success indicator reflect the state's values and priorities by distinguishing schools that produce outcomes or engage in activities the state has deemed (through initiatives, programs and professional development) important to student success?

4. Is the school quality or student success indicator something that can be positively influenced by the school through support and intervention?

5. Is there evidence that the indicator provides a fair, accurate measure of the school quality/student success construct of interest (e.g., engagement, student engagement) and is not confounded with other factors that are out of the school's control?

6. Is there evidence that the indicator, as measured, will provide for reliable distinctions among schools of various types, and key sub-groups within and across years?

To illustrate how these questions play out in practice, consider State A, which believes participation in Career Technical Education (CTE) promotes college- and career-readiness and is beneficial for all students. The state upholds this belief through the development of new CTE standards and courses, many of which are purposely designed to award academic credit. Given the state's goal to boost student participation in CTE, CTE course completion rate—the percentage of students successfully completing one or more CTE courses within a given year—is proposed as one of several measures of post-secondary readiness in grades 9-12. Upon further review, the state finds that schools in rural areas tend to perform poorly on this measure because they do not have the funds and structure necessary to offer these classes to students. Furthermore, stakeholders have raised concerns that the measure might inadvertently contradict parallel efforts by the state to increase sub-group participation in college-prep and Advanced Placement® (AP) courses, a measure also proposed for inclusion in the accountability system. To mitigate these issues while maintaining the intended focus on CTE, State A decides that a better measure of a school's efforts to improve post-secondary readiness would be the change in student access to CTE courses.

THE SAME INDICATOR(S) MUST BE USED WITHIN EACH GRADE SPAN

Since a state's accountability goals and priorities might change from elementary school to high school, ESSA allows states to identify different indicators of school quality or student success in each grade band (3-5, 6-8 and 9-12) as long as those indicators are coherent and reflect the state's goals and initiatives. For example, a state may select an indicator of student engagement in grades 3-5, an indicator of school climate in grades 6-8, and an indicator of post-secondary readiness in grades 9-12

THE INDICATOR(S) MUST BE COMPARABLE AND APPLICABLE STATEWIDE

Determining comparability requires making a judgment about whether or not two sets of results can be used to support the same interpretations and uses.[8] Under ESSA, indicators selected for inclusion in the accountability system must support reporting of school performance for all students and disaggregated by sub-group; reporting of overall school performance using at least three achievement levels; and meaningful differentiation of schools. The primary comparability requirement associated with each use is provided in Table 2 along with examples of the ways in which each requirement might be met.

8 See: Lyons, S. & Marion, S. F. (2016). Comparability options for state applying for the Innovative Assessment and Accountability Demonstration Authority: Comments submitted to the United States Department of Education regarding proposed ESSA regulations. Retrieved from www.nciea.org.

Table 2. Comparability Requirements for School Quality and Student Success Indicators

Use of Indicator Results for ESSA	Comparability Requirement	Meeting the Requirements	Examples
Report state, LEA, and school performance for all students and disaggregated by sub-group	Within a grade span, the indicator must provide for comparable *student-level* outcomes (e.g., score, rating, classification, or achievement level).	Most straightforward: the indicator is measured using a common tool/instrument for all students in a grade band (e.g., administering a common test or survey) resulting in a common measure for aggregation Less straightforward: the indicator is measured using different tools or instruments within a given grade span but reported using a common metric that can be aggregated across all students and by sub-group	45% of grade 6-8 students in School M received instruction from a novice teacher. Using a common survey measure, 85% of African American students in the state indicated that their school's climate was "Satisfactory". 60% of students in High School A exhibited "career readiness" (e.g., by completing a career portfolio, attaining a certification, high performance on ACT WorkKeys®)
Report school performance using three or more levels of achievement.	Within a grade span, the indicator(s) must produce comparable inferences about school performance at the achievement level.	Expectations associated with different levels of achievement on the school quality or student success indicator(s) are clearly defined. The procedures and business rules[9] used to determine a school's overall achievement level on the school quality or student success indicator are standardized and clearly defined.	School A "Did Not Meet" the standard defined for student engagement across grades 3-12. School D performed "Above Expectations" in terms of gains in school climate.
Inform meaningful differentiation through inclusion in an overall school determination.	The indicator outcome, score, or rating used to inform annual determinations must be comparable across schools.	The procedures and business rules used to establish the outcome, score, or rating used for annual determinations are standardized and clearly defined.	School B received a score of 3 out of 4 for post-secondary readiness in grades 9-12. School A earned .85 of the points associated with teacher engagement in grades 3-5.

9 This includes rules related to aggregation, inclusion, rounding or weighting of results, etc.

THE INDICATOR(S) MUST BE MEASURED AND REPORTED ON AN ANNUAL BASIS FOR ALL STUDENTS AND DISAGGREGATED BY SUB-GROUP.

As shown in the first row of Table 2, in order for results to be disaggregated by sub-group, the primary unit of measurement for any school quality or student success indicator must be the student. While most indicators can be defined in a way that satisfies this requirement, some will be more challenging than others. For example, the number of advanced courses offered by a school may provide a valid and reliable measure of student access to advanced course work, but it does not allow for results to be disaggregated by sub-group. On the other hand, student participation in advanced course work does allow for sub-group disaggregation if defined in terms of the number/percentage of students taking advanced courses in a given school.

For some indicators, including those outlined in ESSA, disaggregation by subgroup is either not possible or goes against best practice. For example, most indicators of teacher or parent engagement are not based on student-level variables (e.g., teacher attendance or parent participation) making disaggregation by sub-group impossible. Furthermore, indicators such as school climate which rely largely on student survey measures will not support disaggregation unless the condition of anonymity is violated[10]. Teacher engagement and school climate are examples of indicators provided in ESSA; therefore these are contradictions that still need to be resolved.

EXAMPLES OF POTENTIAL INDICATORS

To demonstrate the range and potential sources of information that might be considered for the school quality or student success component of a state's accountability model, examples of indicators are provided in Table 3[11]. For each indicator class, a list of key implementation challenges and a sampling of recent articles examining the relationship between select indicators and student learning or college- and career-readiness is provided[12].

The indicators are presented in one of nine classes (categories), but an indicator is not necessarily exclusive to a given class. For example, chronic absenteeism could be considered an indicator of student engagement (as represented in Table 3) or an indicator of school climate, depending on how a state views absenteeism as an issue and approaches solutions. Multiple measures may be used to establish the score or rating associated with a given indicator. Therefore a state may select multiple, related measures to include in a given school quality or student success indicator. Finally, it is important to note that this list is intended to be illustrative, not comprehensive, and there is no guarantee that any suggested indicator will be approved in ESSA-compliant systems. States should select indicators that fit their policy priorities and work in conjunction with other attributes of the accountability system to support the overall theory of action for school improvement.

10 Requiring students to provide demographic information can threaten the validity of results and potentially compromise a student's identity student once results are disaggregated.

11 For a summary of the full range of accountability indicators currently being used by states refer to https://cdn.americanprogress.org/wp-content/uploads/2016/05/17094420/AccountabilityLandscape-report2.pdf

12 While not exhaustive, the references defined within these papers provide additional research for consideration.

Table 3. Examples of Potential School Quality and Student Success Indicators[13]

Indicator Class	Examples of Potential Indicators	Key Challenges	Resources and Research Related to Indicator Class and Examples[14]
School Climate and Safety	Student, educator, or parent ratings of school climate or safety Suspension or expulsion rates Reported threats to students/staff	Managing the potential for corruptibility of survey measures Dealing with survey results that may be anonymous or only provided at the school level, making disaggregation by sub-group impossible Establishing common definitions or business rules that allow for comparable measures across schools Maintaining an accurate and consistent collection of information regarding instances of threatening behavior and how they are defined Defining a fair, valid measure that reflects a school's effort to improve school climate	*Review of research related to school climate:* Thapa, A.; Cohen, J.; Guffey, S., Higgens-D'Alessandro, A., (2013) A Review of School Climate Research. Review of Educational Research, vol. 83, 3: pp. 357-385. National School Climate Standards (see Appendix B for a list of relevant research): https://www.schoolclimate.org/climate/documents/school-climate-standards-csee.pdf *Relationship between school safety and academic performance:* http://journals.sagepub.com/doi/pdf/10.1177/0042085916674059
Student Access to Post-Secondary Resources/ Preparation[15]	Student access to effective career guidance and counseling Access to dual credit, advanced coursework, CTE courses, internships and/or job shadowing opportunities in high school	Ensuring schools are not held accountable for differential access due to factors that are out of their control (e.g., geographic location, school size, lack of funding) Establishing common definitions or business rules across schools related to access	*Benefits of school counseling on academic achievement and other outcomes:* https://www.counseling.org/PublicPolicy/PDF/Research_Support_School_Counseling-ACA-CSCORE_02-11.pdf

13 Indicators that are listed in ESSA, but do not adhere to ESSAs current disaggregation requirement s are still provided for consideration (e.g., teacher and parent engagement). It is not yet clear whether these indicators will be approved for use or if guidance will indicate the measurement conditions necessary for approval.

14 This list provides a sampling of recent articles examining the relationship between select indicators and student learning or college and career readiness. While it is not intended to be an exhaustive list the references defined within these papers provide additional research for consideration.

15 Note that access to beneficial courses and opportunities is differentiated from participation in or completion of these activities, which is reflected in the readiness indicators listed further down in the table.

Indicator Class	Examples of Potential Indicators	Key Challenges	Resources and Research Related to Indicator Class and Examples[14]
Student Engagement	Student self-reported engagement Teacher observations or ratings of student engagement Participation in Extracurricular Activities Chronic Absenteeism[16]	Managing the potential for corruptibility of student or teacher reported measures Ensuring observation measures are fair and reliable Establishing the validity of the indicator as a measure of student engagement Establishing fair business rules related to chronic absenteeism that accurately reflect what schools should/should not be held accountable for (e.g., Should students absent for medical reasons be included in these calculations?) Ensuring there is enough variability the indicator measure to meaningfully differentiate among schools	*Research addressing the benefits of student engagement on student outcomes:* http://nsse.indiana.edu/pdf/Connecting_the_Dots_Report.pdf *Benefits of extracurricular activities*: http://transform.tamu.edu/news/studying-impact-extracurricular-activities-friends-and-academics?_ga=1.34963369.967127570.1482158110 http://www.ascd.org/publications/educational-leadership/dec99/vol57/num04/-Extracurricular-Activities@-The-Path-to-Academic-Success%C2%A2.aspx *Relationships between class size, student engagement and student achievement*: http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Class-size-and-student-achievement-At-a-glance/Class-size-and-student-achievement-Research-review.html *Relationship between absence and academic achievement:*[17] http://www.attendanceworks.org/research/absences-add/

16 Chronic absenteeism may also be classified under school climate depending on how the state views this issue (e.g., improving school safety or providing for more engaging/relevant courses and instruction).

17 For a comprehensive list of research related to the impact of absenteeism see: http://www.attendanceworks.org/research/all-research/

Indicator Class	Examples of Potential Indicators	Key Challenges	Resources and Research Related to Indicator Class and Examples[14]
Teacher Engagement	Student reports of teacher engagement Principal ratings or observations of teacher engagement Teacher attendance rate Teacher attrition, retention, and mobility	Managing the potential for corruptibility of student or teacher reported measures Ensuring observation measures are fair and reliable Providing for disaggregation of results by sub-group Establishing the validity of the indicator as a measure of teacher engagement	*Teacher engagement and student outcomes:* http://www.gssaweb.org/webnew/wp-content/uploads/2015/04/Quality-Feedback-Teacher-Engagement-and-Student-Achievement.pdf *Teacher absenteeism and student outcomes*: http://www.jstor.org/stable/30128059?seq=1#page_scan_tab_contents *Impact of teacher attrition on student achievement:* http://journals.sagepub.com/doi/pdf/10.3102/0002831212463813 https://cepa.stanford.edu/sites/default/files/wp16-03-v201601.pdf
Parent Engagement	Attendance at school events or teacher meetings Volunteering or serving on a committee	Managing the potential for corruptibility Collecting and storing parent participation data Establishing a fair measure that is not unduly influenced by a school's resources, geographic location, or the population of students served (e.g., some schools can have more school events and/or provide more volunteer opportunities than others)	*List of research on parental involvement and student outcomes*: http://www.nea.org/tools/17360.htm http://www.childtrends.org/wp-content/uploads/2012/10/39_Parent_Involvement_In_Schools.pdf
Quality of Instruction	Student surveys of teaching quality Number of students taught by novice teachers (less than five years) or teachers trained in instructed content area Availability of programs to support and mentor new teachers Teacher participation in professional development	Managing the potential for corruptibility Using validity as a measure of instructional quality Establishing common definitions or business rules for classifying teachers as "trained in instructed content area" Ability to disaggregate results by sub-group	*Impact of teacher knowledge in content area on student achievement:* http://journals.sagepub.com/doi/pdf/10.3102/00028312042002371 *Research on the impact of mentoring for new teachers:* http://journals.sagepub.com/doi/full/10.3102/0034654311403323 *Research on the relationship between teacher professional development and student achievement:* https://www.edutopia.org/twww.goeacher-development-research-annotated-bibliography

Indicator Class	Examples of Potential Indicators	Key Challenges	Resources and Research Related to Indicator Class and Examples[14]
Elementary & Middle School Readiness[18]	Grade 3 reading proficiency Demonstration of algebra readiness in middle school (e.g. successful completion of pre-algebra in grade 7 and algebra I in grade 8); Participation in career/course/college planning activities or clubs Students earning D/F on-grade-level English and mathematics courses	Establishing comparable measures within a grade span Avoiding incentivizing negative practices if included in accountability Ensuring fairness across schools having different resources Managing the potential for corruptibility Ensuring comparability of across schools due to differential grading practices.	Research on importance of reading proficiency by end of grade 3: http://www.aecf.org/resources/double-jeopardy/ *Relationship between algebra readiness and future success:* Huang, C.-W., Snipes, J., & Finkelstein, N. (2014). Using assessment data to guide math course placement of California middle school students (REL 2014–040). http://ies.ed.gov/ncee/edlabs Kurlaender, M., Reardon, S., & Jackson, J. (2008). Middle school predictors of high school achievement in three California school districts. http://escholarship.org/uc/item/90q9t9h4 *Benefits of early participation in career/course/college planning:* http://acrn.ovae.org/counselortk/docs/ACT%20College%20Readiness%20Begins%20in%20Middle%20School.pdf http://45.33.39.222/evaluation-by-act-inc/

18 For a list of college and career readiness indicators by grade span see http://www.ccrscenter.org/sites/default/files/CCRS%20Center_Predictors%20of%20Postsecondary%20Success_final_0.pdf

Indicator Class	Examples of Potential Indicators	Key Challenges	Resources and Research Related to Indicator Class and Examples[14]
Post-Secondary Readiness	College credits earned or advanced cCool predictors of high school with formatting: brief description of the info in the resource followed by the link to access.ourse completion Performance on college admissions or placement exams 9th or 10th grade credit earning Attainment of an industry credential or certification Completion of a CTE program of study Entrance into the military Successful completion of first year of college	Mitigating the impact of differential access due to a school's resources, size, or geographic location Ensuring comparability and reliability in calculation procedures across schools Identifying comparable measures within a grade span Establishing comparable measures within a grade span Collecting accurate longitudinal data	*Benefits of college credit earning in high school:* http://www.achieve.org/files/EarningCollegeCreditAchieveJFF.pdf (See endnotes 5-12 for a list of research) *Benefits of CTE participation/ completion:* https://edexcellence.net/publications/career-and-technical-education-in-high-school-does-it-improve-student-outcomes
Social Emotional Learning & Persistence	On time, accurate completion of homework assignments (i.e.., time-management skills). Student perceptions of self-worth and/or self-efficacy Measure of grit, persistence, or presence of a growth mindset	Establishing reliable, valid, and comparable measures across schools Managing the potential for corruptibility Accurately tracking student performance after high school	Summary of research related to benefits of social-emotional learning: http://www.ccrscenter.org/sites/default/files/1528%20CCRS%20Brief%20d9_lvr.pdf Summary of research related to benefits of a growth mindset: http://www.temescalassoc.com/db/el/files/2015/02/Growth-Mindsets-Lit-Review.pdf

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