Considerations for Including Growth in ESSA State Accountability Systems
The Council of Chief State School Officers (CCSSO) is a nonpartisan, nationwide, nonprofit organization of public officials who head departments of elementary and secondary education in the states, the District of Columbia, the Department of Defense Education Activity, and five U.S. extra-state jurisdictions. CCSSO provides leadership, advocacy, and technical assistance on major educational issues. The Council seeks member consensus on major educational issues and expresses their views to civic and professional organizations, federal agencies, Congress, and the public.

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

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Considerations for Including Growth in ESSA State Accountability Systems
The *Every Student Succeeds Act* (ESSA) requires state accountability systems to be operational in the 2017-2018 school year in order to start making school determinations in the 2018-2019 school year. Each state’s ESSA-aligned accountability system should be based on a state’s strategic vision\(^1\) that includes a theory of action\(^2\) to achieve that vision that answers the following questions: what actions must the state take to achieve its goals? What resources, processes, and supports must be put in place? The purpose of this resource is to help state leaders think through the process for selecting and implementing a growth model for their accountability system.

### REQUIREMENTS AND OPPORTUNITIES FOR GROWTH MODELS UNDER ESSA

ESSA requires each state to establish and measure the following annual indicators for all students, and separately for each subgroup:

1. **States must measure academic proficiency** in reading/language arts and math based on performance on state assessments. States can also elect to measure academic growth for high school students in these subjects over time.

2. **For elementary and secondary schools, states must measure student growth or another valid and reliable indicator** that allows for meaningful differentiation in student performance.

3. **States must measure the graduation rate** for high schools based on the four-year adjusted cohort rate. A state can also elect to measure an extended-year adjusted cohort rate.

4. **For English learners (ELs), progress in achieving English Language Proficiency (ELP),** based on the state’s ELP assessment, within a state-determined timeline; and

5. **States must measure at least one indicator of school quality or student success** that allows for statewide differentiation of school performance and that is valid, reliable, comparable (this indicator may vary by grade span).

While a theory of action should articulate the explicit goals of the accountability system, a state’s accountability system will likely emphasize actions that align to ESSA requirements and regulations such as program monitoring, school improvement, and school ratings. ESSA’s requirements for accountability can be grouped into two main components:

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\(^1\) *CCSSO’s State Strategic Vision Guide* is a resource for state chiefs as they solidify, reform, and enact their vision for their state in the context of increased flexibility now provided in the federal law.

1. Reporting requirements: states must continue to report according to all the same subgroups specified under NCLB.

2. School accountability determinations: states must categorize schools based on state-determined goals and methodology.

ESSA requires a fairly quick design and development process.

**ACADEMIC GROWTH IN ACCOUNTABILITY SYSTEMS**

The inclusion of academic growth in accountability systems is similar to the requirements in Requests for Flexibility from the *Elementary and Secondary Education Act* (flexibility waivers). Academic growth allows states an opportunity to capture and report on student progress at a finer grain size but state education agencies (SEAs) should approach the model selection and implementation process thoughtfully.

In order to implement a growth model into an accountability system, we must first clarify the distinction between status, improvement, and growth. These concepts are illustrated below:

- **Status**: The academic performance of a student or collection of students at a single point in time (the single red dotted cell in Table 1).

- **Improvement**: The change in performance over time within grades or across grades, without following the same student or collection of students (the gray vertical column and horizontal row).

- **Growth**: The academic performance of the same student or same collection of students over two or more points in time (the diagonal green striped cells).

Table 1. Comparisons of status, improvement, and growth³.

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Academic growth and improvement are often confused. The key to understanding academic growth rests on the idea that a single student or collection of students is followed over time. For the purposes of this paper, student growth is the amount of academic progress that a student makes over time.4

Growth measures provide more detail about the individual students than improvement measures. Depending on the granularity offered by each model, the size of the gain can vary significantly. For example, growth models that rely on scale scores communicate changes in scale score increments. Growth models that rely on categorical descriptions (e.g., transition tables using performance levels) communicate changes only in terms of the number of categories available. The application of growth widens the view of student performance on an assessment. This is illustrated below.

Figure 1. Visualizing access to performance information: Status vs. growth.

As indicated in the figure above, using status-only measures restricts the range of student performance on an assessment to only those students above and below the proficient cut score. This limitation often emerges in conversations about student learning and when examining aggregate student performance to inform school improvement efforts. Status-only measures can greatly reduce the variability in the data used for making judgments about school performance. Depending on the growth model, SEAs can make judgments about student and school performance using a much larger range of performance.

As mentioned earlier, student growth on annual assessments may be used as part of the student proficiency indicator for high schools, or as a stand-alone measure of student growth before they reach high school. It is important to understand what distinguishes growth models from one other5. Common growth models and approaches include:

4 Some parents or educators may prefer or use the term student progress rather than student growth. While the differences may be more semantic than substantive, people will bring preconceived notions to what each term means. Therefore, it is important to sufficiently contextualize what we mean by student growth. For the purposes of this paper, we will continue to use growth to mean the amount of academic progress a student makes over time.

• **Gain scores**: Gain scores describe a student’s growth based on the difference between test scores. This is calculated by subtracting an earlier score from a later score to quantify the change over time. It requires the use of a vertical scale (i.e., scale scores that are connected from grade to grade). Due to differences in scales of many assessment systems, it may be difficult to aggregate these across grades.

• **Growth rates**: Growth rates are based on the change in a student’s performance (i.e., scale score) over a given amount of time. This is determined by calculating a best fit line, or a trend line, across a series of data points to estimate a student’s growth rate. This estimate can be linear or non-linear, and may be difficult to aggregate across grades because of differences in scales.

• **Student growth percentiles (SGP)**: SGPs are based on the percent of academic peers (those students who have similar prior test scores) a student outscores (i.e., student A is growing faster than 35% of his peers). SGPs are reported on a 1-99 scale, with lower numbers indicating lower relative growth and higher numbers indicating higher relative growth. For example, if a student has an SGP of 65, it means the student has demonstrated more growth than 65% of his or her academic peers. It is easy to aggregate these scores because they are percentiles.

• **Transition tables**: Transition tables describe growth as a student’s change in performance level from one year to the next dependent on a student’s prior status. Transition tables often use performance levels that are divided into sub-performance levels (e.g., Level 1A, Level 1B, Level 2A, Level 2B, Level 3A, etc.). These changes within or across performance levels can be aggregated across grades.

• **Residual models**: Residual models, also known as value-added models, describe growth as the impact educators or institutions have on student achievement. Residual models are calculated by comparing how much the performance in a given unit (e.g., class, school, or district) deviates from the average expected change in performance for that unit. While these models don’t provide an individual student growth estimate, residual models can be aggregated across grades.

Once agencies have a clear sense of the differences among growth models, they can examine how the characteristics of each would impact the state’s strategic vision. Additional considerations beyond the model itself, such as alignment to the state’s strategic plan and selection and implementation criteria and capacity, are discussed in the next section.
Considerations for Including Growth in ESSA State Accountability Systems

As states engage with stakeholders to define an accountability system and identify indicators to satisfy ESSA’s requirements, measures of student growth can be powerful tools to gauge student progress toward proficiency. The manner in which measures of growth are integrated into an accountability system depends in large part on the state’s theory of action. However, as with any indicator selection, states should evaluate the appropriateness of the growth model for their purposes (i.e., selection criteria) and their capacity to integrate and implement a growth model. Therefore, it is incumbent upon agencies to understand the interpretations that can be made, the criteria to consider, and the capacities necessary to successfully implement growth models.

Interpretation of Growth Models

While some states may have already implemented a growth model that works under ESSA, others may find themselves newly selecting or revisiting approaches to growth to meet ESSA requirements. States should first consider the most appropriate interpretation of growth measures to support their strategic vision and goals. Growth measures can be interpreted in one (or both) of the following ways:

- **Descriptive**: Interpretation based on previously observed student performance, typically used to describe growth retrospectively for students or groups of students.
- **Predictive**: Interpretation based on possible future student performance, typically used to describe prospective growth for students or groups of students. Some projections also include quantifications of growth-to-target or growth-to-standard (i.e., the distance to proficiency).

While these interpretations help narrow the selection of possible growth approaches, some models can satisfy both descriptive and predictive interpretations.

Growth Model Selection and Implementation Criteria

As the implementation of a growth model is refined, there are several criteria that policy-makers and practitioners should keep in mind when working with SEA staff, consultants, or vendors. These criteria include:

- **Policy goals**: The overall policy vision set forth in the accountability system should be a primary driver in selecting the appropriate growth model. This is especially relevant to the interpretations supported by the model. What interpretations of data (i.e., descriptive, predictive, or both) does the state want to prioritize in Local Education Agencies (LEAs) and schools? What kind of conversation related to student progress should the accountability system support?
For example, a state may decide to initially include an examination of descriptive growth in the accountability system. This would only drive conversations about student progress over the last year, as opposed to growth-to-standard information which further contextualizes growth and progress. This approach would answer the next likely set of questions from educators: How far are students from the standard? Are they on target to be proficient? What do we need to do to help them catch up? What do we need to keep them from falling behind?

Embedding future-focused measures of academic growth can shift discussions among school-level administrators and LEAs. This in turn can accelerate changes in policy and practice.

- **Utility.** As accountability systems are implemented, states must examine how well they support intended goals without deteriorating other aspects of the educational system (e.g., the ability to differentiate schools, diagnose areas of need, or incentivize improvement efforts). Does the accountability system promote behavioral change in support of school improvement efforts?

- **Equity.** Equity in accountability systems incentivizes actions that lead to academic improvement for the lowest performing students, and an improved ability to detect the desired outcomes of learning or mastery of content, knowledge, and skills. How does the growth model promote equity (e.g., not being highly correlated with high poverty concentration, school size, or other characteristics of the population)?

- **Cost.** What is the potential cost of implementing the growth model? What software is needed? Are there proprietary analyses to which one must subscribe?

- **Resources to Calculate.** In addition to the monetary cost, what resources are necessary for implementation? Can the state use existing performance standards or will additional cut points be needed (e.g., transition table with more categories)? Are staff members with the necessary expertise in place to support the model or will the SEA need to hire consultants or vendors?

- **Complexity.** Simplicity and accuracy are often in conflict, so practitioners should exercise balance when selecting a growth model. How complex will it be to explain results from the growth models to educators and administrators?

- **Technical characteristics.** The technical aspects of growth models can vary significantly and it is important to consider how these differences will impact results. Should the state adopt a growth model that requires larger datasets and more longitudinal data to support stable estimates, or one that requires fewer data points but offers less interpretable information? Should the growth model focus on past descriptions of growth or place more emphasis on growth predictions?

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6 See Domaleski & Perie, 2012 for more detail on approaches to emphasize equity in accountability systems.
• **Integration.** The state’s theory of action will inform how large of a role student growth data should play in accountability; different models may not warrant as large of a percentage of the system. How will growth data be integrated into the larger accountability system?

The criteria presented above are by no means exhaustive. They are intended to serve as a starting point for internal conversations in SEAs. Initially, the selected model should be based on the signals and inferences it purports to provide, ensuring they align with the state’s overall theory of action. Then, the remaining criteria can be used as filters to determine the model that best fits the SEA. It is unlikely that any model will meet all of the criteria exactly; practitioners will have to prioritize the criteria deemed most important.

**Capacity for Implementing a Growth Model**

The human, organizational, structural, and material capacity of the SEA must be considered when implementing reforms. These capacities\(^7\), explained in more detail below, can indicate which growth model is right for the state, and should be considered for any reform effort.

1. **Human Capacity**\(^8\): The knowledge, skills, will, and view of self of key stakeholders and those who will be part of increasing stakeholders’ capacity to use data effectively.

2. **Organizational Capacity**\(^9\): The interactions, relationships, and communications among individuals in the system that shape culture regarding data use and set the tone for collaboration.

3. **Structural Capacity**\(^10\): The elements within the system that exist independently of the individuals involved, such as policies, procedures, and formalized practices of a system.

4. **Material Capacity**\(^11\): The fiscal and staffing resources and other material supports, including in-kind time, meeting space, technological capabilities, training documentation, and transportation/travel available to support the system.

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\(^8\) High-priority stakeholders who are expected to use data from the system for decision making; the communications to high-priority stakeholders regarding the resources available; and the role-specific training for agency staff and high-priority stakeholders on how to appropriately interpret data from the model.

\(^9\) Interactions within the SEA to deepen partnerships, relationships, and communications among stakeholders and agency staff; the ways stakeholders should be engaged from planning through implementation; communications by and for agency staff and intended users; facilitation of project management implementation; and identification and mitigation strategies to organizational barriers for effective data use.

\(^10\) Policies, processes, and protocols that developed by the SEA for successful data use; sustainability through the policies and practices that result from implementing work plans; processes for ongoing review and revision of work plans; and identification and mitigation strategies for the structural barriers to effective data use.

\(^11\) Tools, reports, and supporting documentation necessary for data use; enhancements to the system’s technical infrastructure; training plan(s) and materials to support data use; travel, conferences, and/or professional development opportunities to increase other capacities; and needs related to management and coordination of vendors and products.
SEAs should consider the strengths and weaknesses associated with each type of capacity. For example, a department may have very knowledgeable staff (i.e., high human capacity) with strong inter-departmental relationships (i.e., high organizational capacity), but none of the policies or procedures necessary to calculate and integrate growth (i.e., low structural capacity). Until that is addressed, it is unlikely that training documentation or other resources (i.e., material capacity) will be developed. An analysis of internal capacity can help clarify the opportunities or threats to successfully implementing and integrating a growth model, and inform the degree to which internal partnerships need to be cultivated to support a successful growth initiative.

**Internal Partnerships**

When selecting a model, it is important to consider the feedback of the relevant stakeholders within the SEA. This will enable a more comprehensive implementation plan that can cohesively support the SEA’s vision. While the teams within an SEA may differ, each brings a different perspective to how growth might be used, how it is interpreted, and how it might be applied to reform efforts. These groups include, but are not limited to the following:

- **Executive office**: As with any SEA initiative, the vision of the executive office or team should be reflected in the purpose of the growth model. The communications team can help recognize the plans, tools, or strategies that might be necessary to garner support for the model outside of the agency. Key considerations: Why is growth important? What value does it bring to improvement efforts? How does it align with the overall vision of successful schools? By clearly articulating the answers to other teams within and outside the SEA, the communications team can help maintain alignment to the executive office’s vision.

- **Data information office**: The information office will be central to this effort. They will need to be consulted to ensure the business rules are complete, data flow is clear, sources of relevant data are identified, and the appropriate representatives are included in data transfer and reporting efforts.

- **Assessment**: The assessment office is responsible for statewide summative assessment data that serves as the foundation for the growth model. This team will likely own the process for selecting, calculating, and communicating the growth model results. The assessment team will work closely with others in the SEA to ensure internal and external stakeholders understand the model, how it’s applied to other initiatives, and how to best use growth data.

- **Accountability**: For those SEAs that have accountability and assessment teams in the same office, there should be a natural partnership between team members. In places where the offices are distinct, SEAs should foster a close interaction to promote policies and business rules that account for the nuances of the assessment. As accountability teams determine how growth is operationalized in
Considerations for Including Growth in ESSA State Accountability Systems

ESSA systems, assessment teams can confirm any assumptions about how growth is reflected in accountability.

- **Standards/instruction/curriculum**: The standards/instruction/curriculum teams understand the techniques that are effective in instructional efforts when using assessment and accountability information. It is important to involve these teams early and often so they can help reflect the perspective of local agencies and schools and serve as an ally for the SEA when contacted by districts and schools. Furthermore, they can help develop resources to facilitate the use of growth data in the classroom.

- **School improvement/federal programs**: These teams will serve a vital role in the ESSA accountability system. Because they help clarify the system of supports and interventions for local agencies and schools, they will need to have a thorough understanding of the data used for accountability determinations. Additionally, their experience in school monitoring and program oversight will be valuable for developing growth resources that support school improvement. By including representatives from these offices, the SEA can promote cohesion in ESSA-related efforts around monitoring, support, and entrance and exit criteria for school classifications.

- **Educator effectiveness**: Although educator effectiveness is no longer a required part of accountability plans under ESSA, growth data remains relevant for educators and administrators to use directly or indirectly as part of evaluation efforts. Perhaps most directly, SEAs may factor the use of growth scores into educator accountability, which would require policy and business rule development that intersects with other department offices. Indirectly, growth information could be used as a distal outcome for educator evaluation associated with the theory of action for educator effectiveness.

The level of involvement from members of each of these teams will vary throughout implementation and will depend on the state’s theory of action. However, the team leading the growth model implementation should ensure that each team has at least been consulted to facilitate a cohesive effort.

**External Partnerships**

In addition to the internal partnerships that are necessary to successfully implement growth in accountability, the SEA should partner with external groups in developing and communicating about its growth model. SEAs should establish ways for stakeholders to play an active role in the creation of state policy around growth models, and sustain relationships with these stakeholders throughout the implementation, evaluation, and launch of the new model. States can use committees or groups that already exist to engage stakeholders in this work, or establish new groups, to ensure they are collaborating with the necessary stakeholders throughout this process.
CCSSO has developed a comprehensive stakeholder engagement guide that all SEAs can reference in establishing external partnerships. Please see the Let’s Get This Conversation Started guide at www.ccsso.org/essa.

**Communicating about Your State’s Growth Model**

Educational accountability systems should be designed to contribute to the improvement of educational systems\(^\text{12}\). It is also necessary to communicate with all stakeholders—including but not limited to educators, administrators, policymakers, community members, parents, and students—about how the accountability system impacts the quality of education. This will require the SEA to create a suite of resources and materials ranging from simple to complex that are accessible to all stakeholders, including those individuals who speak a foreign language or have a disability. All materials should support the state’s strategic vision for the growth model and the accountability system.

These resources include but are not limited to:

1. **ESSA accountability plans**: The official submission for the state’s ESSA plan can be leveraged by SEAs for all subsequent resources. SEA staff can use this powerful document to provide the public with details on the theory of action behind the system, the role of growth, information regarding calculations, the rationale for system decisions, and planned supports and interventions.

2. **Business rules for processing**: This will be the most complex of the resources and has the potential to be relatively disconnected from the process without sufficient contextual information. While SEAs may have relied on syntax or code to document business rules, many have transitioned to including enough contextual information so that these resources can support staffing transitions. SEAs are expected to exercise transparency about business rules, and this resource provides evidence that the department is addressing ever-increasing scrutiny to operationalize systems thoughtfully while maintaining fairness, security, and privacy.

3. **Technical briefs**: Technical briefs provide enough detail to give readers a full understanding of the model or accountability system. A brief might include calculations, technical methodologies, inputs and outputs for the model or system, or the method by which a growth model contributes to accountability. While technical briefs may reference the larger purpose of the growth model or accountability system, they will likely be read by educators and administrators responsible for implementing data, accountability, or improvement systems in LEAs or schools.

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4. **Policy briefs**: Policy briefs offer a high-level summary of the start-to-finish intent of a model or system. It may begin with a general policy statement that frames the purpose of the model, how it is intended to be used and interpreted, and what decisions may be informed by the data provided. This resource may also provide background information on the process, method, or approach used to contextualize the results of the model or system. Because this serves as an overview, it may be appropriate to reference the technical brief without getting mired in detail. Policy briefs may also benefit from past examples of how data from the model or system have been used to support effective reform or improvement efforts (e.g., sets of questions, planning strategies, information breakdowns, etc.).

5. **Glossy briefs**: Glossy briefs, or one-pagers, are easily digestible documents that privilege lay-language over technical jargon. These resources are practical tools that can help the SEA communicate policy rationales, strategies supported by the systems, and intended outcomes of accountability to audiences who may not typically be involved in strategic planning, program evaluation, curriculum design, or goal-setting in education (e.g., parents, teachers, students, and business and community members).

As SEAs develop comprehensive outreach strategies, it will be critical that communication resources are cohesive. It is likely that regional or district-based LEAs will need to understand each of the resource types developed by the SEA to support their own outreach efforts locally. SEA-developed communication toolkits can be an efficient way of packaging these resources to help promote a concrete outreach strategy and communication plan. Ensuring that the field understands the purpose, implications, and intended uses of a model or system can mitigate resistance to complex initiatives associated with ESSA accountability. SEAs should leverage external partnerships to assist in the creation of these materials to ensure they are all accessible for each audience. For example, the SEA should work with members of the state Parent-Teacher Association (PTA) chapter to create materials that are easily digestible and meaningful for parents.

**Conclusion**

Using growth as a factor in statewide accountability systems allows SEAs to expand their approach to measuring school quality and effectiveness using a more equitable indicator than static academic status alone. A state’s approach to implementing growth models should always be based on the SEA's theory of action—the method and timeline for implementation will thus vary by state. ESSA and its impending regulations afford states an opportunity to reexamine including growth to more equitably meet their accountability needs, assess the capacity within and across the SEA to support improvement efforts using growth, and confirm that local agencies are equipped to effectively use the information provided. It is imperative that SEAs put in place the necessary tools and resources for LEAs and schools to capitalize on the availability of growth data.
As states examine their technical capacity to implement growth models, it is important to reflect on potential strengths and weaknesses. This may help clarify the kinds of work plans necessary to address lower capacity areas and to strengthen internal partnerships. The following section presents concrete questions SEAs might ask about how their current or prospective growth model aligns with policy, practical, and technical considerations:

**Are the state’s selection criteria for a growth model reflected appropriately in terms of breadth and depth?**

- What kind of interpretations does the state want to make using growth data?
- Are the state’s policy goals reflected in interpretations supported by the growth model and the way in which growth is weighted in the larger system?
- Does the state have the necessary resources (e.g., cost, technical expertise, communication plan, partnerships) to implement the model internally or with external partners?
- How complicated will it be to explain the growth model accurately? Will this complexity inhibit buy-in from constituents? What strategies and communication resources are (or will be) put in place to mitigate this concern?

**Are the state’s implementation criteria reflected appropriately with regard to capacities at the state and local levels?**

- Does SEA staff have sufficient expertise to implement and support the model? Is there a core group that can advocate for its use and defend its purpose?
- Are the interactions within the SEA (e.g., offices of assessment, accountability, instruction, school improvement, school support, etc.) sufficient to support the appropriate use and interpretation of the growth model to reflect the chief’s vision?
- Are there or will there be the right policies and procedures in place to leverage assessment data, in addition to calculating and reporting results for both the growth model and larger accountability system?
- Are there sufficient staffing and fiscal resources to effectively implement the growth model? Has or will the state develop training materials and supporting documentation?
- What tools or resources will the state make available to explain the growth model to the general public in non-technical terms? What support will be available for schools or districts regarding interpretation of data?
Have the necessary assignments and actions been made to address the logistics of both selecting and implementing a growth model?

- Who will ultimately be responsible for implementing the growth model and advocating its purpose?

- Did the state examine the SEA’s internal technical capacity (using questions to confirm with leadership the selection of a model)?

- Will the state use growth and/or growth-to-standard?

- How can the SEA ensure that executive leadership and other groups who leverage assessment data understand the purpose and meaning of using growth for accountability, school improvement, and instructional decisions?

- What are the SEA’s areas of greatest strength and weakness with regard to capacity? Can the state establish a work plan to address incomplete or unaddressed capacity issues?

- What are the key agencies or local partners who can help disseminate information and understanding of the growth model and the larger system?