

ESSA Accountability Modeling Tool – No Summative Ratings Version

User Guide

This user guide provides instructions on how to use the *ESSA Accountability Modeling Tool* prototype that was demonstrated during the *CCSSO State Plan Implementation Meeting: Accountability* convened on April 19-20, 2018 in Chicago, IL.

There are two versions of the accountability modeling tool prototype: one is for states that assign an overall summative rating (e.g., A to F, 5-star to 1-star etc.) to each school; and the other is for states that do not assign a summative rating to each school, but may have performance levels at the accountability indicator level (e.g., a school could be “above expectation” for academic achievement and “at expectation” for academic progress). This user guide is for the *No Summative Ratings* version of the prototype.

The user guide is broadly divided into three sections: *State Data*, *User Input* and *Modeling Tool Output*. The *State Data* section gives an overview of what school characteristics and performance data are needed from the state’s various data systems for the computations in the modeling tool. The *User Input* section explains the fields for which a user of the tool can enter specific values that represent parameters, targets or thresholds from the state’s accountability system. The *Modeling Tool Output* section shows where the user can find the output of the tool based on the inputted values.

Please note that that school-level data, system design, business rules, and default input values in the modeling tool are hypothetical and do not represent the accountability system of any particular state or jurisdiction. The purpose of this modeling tool prototype is to promote best practices in accountability system design and implementation by providing a realistic example of how a state could use empirical data to support the validity of its system and evaluate the implication of various design decisions, both during the initial implementation and in the subsequent years (i.e., monitoring and evaluation of the accountability system). The tool can be customized to represent the accountability system design of any given state or jurisdiction.

Any questions or comments about the ESSA Accountability Modeling Tool should be directed to Leslie Keng (lkeng@nciea.org) or Juan D’Brot (jdbrot@nciea.org) at the Center for Assessment (www.nciea.org).

State Data

Indicators

The *Indicators* tab in the modeling tool spreadsheet is where the school-level data reside. The data in this tab, along with the user inputted values in the *Parameters* tab (see next section), are the basis for all of the computations and business rules in the modeling tool.


The hypothetical data in the modeling tool prototype includes columns for school characteristics, such as the name of the school and its district, the grade range for the school, and the school’s Title 1 status.

It also includes columns for the school's scores on the various accountability indicators, for all students and by student group.

During the accountability design phase, data from previous years (legacy data) can be imported into this tab as one way to empirically assess the feasibility and reasonableness of the various design considerations. During the initial-year implementation of the accountability system, data from the current year can be imported into this tab to validate the calculations and classifications generated by the reporting systems. And in subsequent years, the data in this tab can be updated to inform the ongoing monitoring and evaluation of the accountability system.

User Input

The only tab or worksheet in which user need to provide input is in *Parameters*. In general, any cell in which a user can input values is represented by a box with black font; while any cell in blue font includes a computed value (i.e., Excel formula) based on the inputted values.



All user input fields are in the *Parameters* tab

Threshold Type	Value
< State Target	50

A cell in which a user can input values is represented by a box with black font

% Schools
4%

A cell with a computed value is in blue font.

School Identification Parameters

Accountability systems that do not provide summative ratings generally implement decision rules to identify schools for support and improvement. The decision rules demonstrated in the modeling tool is a staged approach in which schools that do not meet criteria for minimum performance for accountability indicators in a given stage move on to subsequent stages. School that remain in the final stage (i.e., Stage 3 in the tool's example) are identified for support and improvement.

CSI Identification Parameters		
Indicator	Threshold Type	Value
Stage 1: Academic Achievement	< State Target	50
Stage 1: Progress in ELP	< State Target	50
Stage 2: Academic Progress	Percentile	25
Stage 3: Chronic Absenteeism	Percentile	10
TSI Identification Parameters		
Criteria	Threshold Type	Value
Stage 1: # of Student Groups < Group Target	# of Groups ≥	2
Stage 2: # of Student Groups in Bottom 25%	# of Groups ≥	2
Stage 3: Chronic Absenteeism < State Target	< State Target	10
ATSI Identification Parameters		
Criteria	Threshold Type	Value
Stage 1: # of Student Groups < ATSI Cut	# of Groups ≥	2
Stage 2: # of Student Groups < ATSI Cut	# of Groups ≥	2
Stage 3: Chronic Absenteeism < ATSI Cut	< ATSI Cut	5

The tool allows users to enter stage criteria for the three types of school identification specified in ESSA: comprehensive support and improvement (CSI), targeted support and improvement (TSI), and additional targeted support and improvement (ATSI). Each criterion can be criterion-based (e.g., “below the state’s annual target”) or norm-based (e.g., in the bottom 25% of school for this indicator).

Targets for Student Groups

For TSI and ATSI identification, student groups are often compared against group-specific targets. This table allows the user to specify targets for each student group on each applicable accountability indicator. In the example in the tool, the current year’s (2017) measures of interim progress for each student group, as specified in the state’s consolidated ESSA plan, are used as the student group targets.

Current-Year State Targets (2017 MIPs from ESSA Consolidated Plans)								
Student Group Targets	Econ Dis	Special Ed	LEP	Native	Asian	Black	Hispanic	White
Academic Achievement	38.0	16.9	17.3	35.9	61.0	28.7	44.4	53.1
Progress in ELP			50.0					

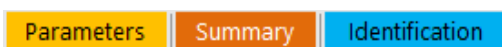
Performance Level Threshold (Cut) Scores

Accountability systems that do not provide summative ratings will likely need to define performance levels to classify schools on each accountability indicator. Performance levels help give meaning to the indicator scores and can be helpful in the visual representation of school results, such as reporting dashboards. In the example in the tool, the user can input the threshold values or cut scores that define the performance levels for each indicator. It is recommended that a standard setting process, based on an established approach and involving accountability system stakeholders, be implemented to establish the cut scores. This tool could be used in the standard setting process to compute the impact data (the percentage of schools in each performance level) of the cut scores being considered by the standard setting committee.

Performance Level Thresholds				
Level\Indicator	Achieve	Progress	Prog ELP	Chron Ab
Level 5	65	140	93	5
Level 4	50	120	75	10
Level 3	35	100	50	20
Level 2	20	80	25	30
Level 1	0	0	0	100

Modeling Tool Output

Output for the modeling tool can be found on the *Parameters*, *Summary* and *Identification* tabs of the modeling tool. The results in these tabs are dynamically updated as the user inputs values for the various aspects of the accountability system.



Parameters Tab

The parameters tab provides high-level accountability results across all schools in the state.

Descriptive Statistics for Indicators

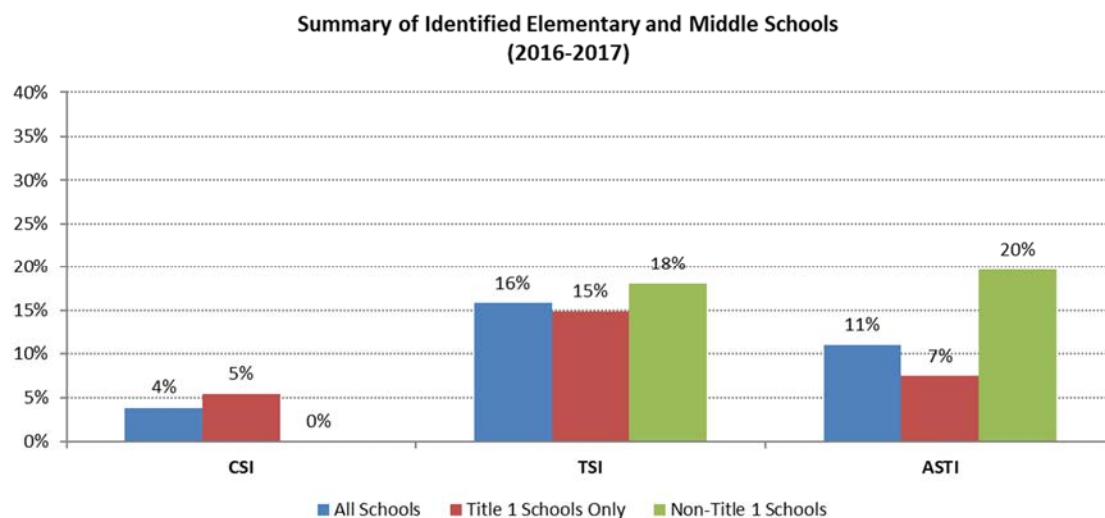
The first table summarizes the number of schools (N), average score (Average), standard deviation (StdDev), minimum score (Minimum) and maximum score (Maximum) for each accountability indicator across all students. The second table provides the average indicator scores by student groups.

Descriptive Statistics for Indicators (All Students)									
Indicator\Statistic	N	Average	StdDev	Minimum	Maximum				
Academic Achievement	205	45.2	12.4	11.9	79.8				
Progress in ELP	17	67.5	20.6	24.2	94.6				
Academic Progress	202	112.5	16.8	72.5	154.5				
Chronic Absenteeism	207	17.4	15.7	3.2	100.0				
Averages for Indicators (By Student Group)									
Indicator/Student Group	Econ Dis	Special Ed	LEP	Native	Asian	Black	Hispanic	White	
Academic Achievement	34.4	14.0	29.8	20.9	58.1	25.5	37.1	45.9	
Progress in ELP			67.5						
Academic Progress	99.0	73.7	95.6	87.9	145.1	86.5	98.6	113.6	
Chronic Absenteeism	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	

School Identification Summary

These tables show the number and percentage of schools that are identified for each type of support: CSI, TSI or ASTI. The statistics are shown for all schools in the state as well as by Title 1 and non-Title 1 statuses. A bar graph showing the same information is also provided.

Identification (All Schools)	Total Schools	209
Type of Support	# Schools	% Schools
CSI	8	4%
TSI	33	16%
ASTI	23	11%
Identification (Title 1 Schools Only)	Total T1 Schools	148
Type of Support	# Schools	% Schools
CSI	8	5%
TSI	22	15%
ASTI	11	7%
Identification (Non-Title 1 Schools Only)	Total Non-T1 Schools	61
Type of Support	# Schools	% Schools
CSI	0	0%
TSI	11	18%
ASTI	12	20%



School Identification By-Stage Summary

When evaluating the criteria used in each stage of school identification, it is often informative to consider the number of schools that do not meet the criteria at each stage. The tables below summarize the number and percentage of schools that remain after each stage for the three types of support (CSI, TSI and ASTI.)

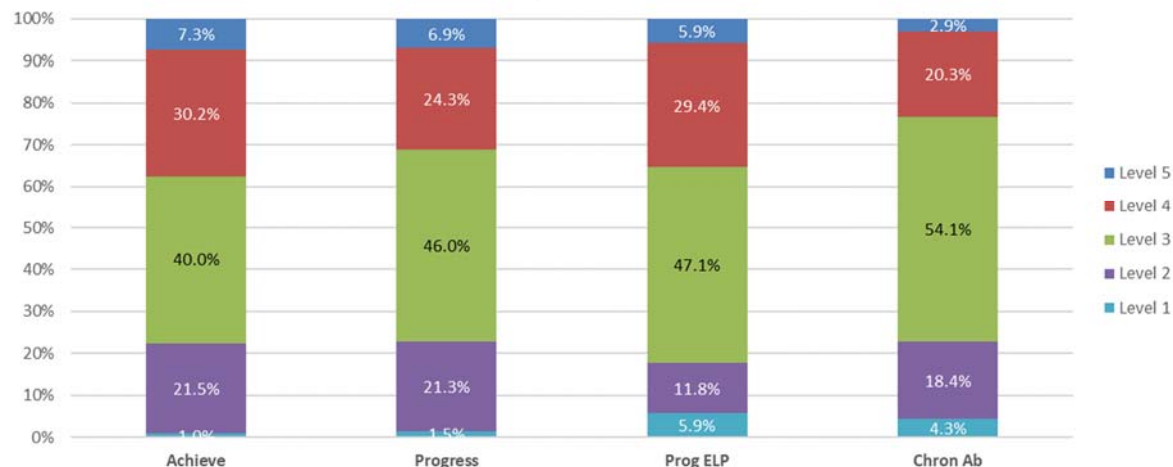
CSI (Title 1 Schools)		Total T1 Schools	148
Stage	# Schools	% Schools	
Stage 1	93	63%	
Stage 2	33	22%	
Stage 3	8	5%	
TSI (All Schools)		Total Schools	209
Stage	# Schools	% Schools	
Stage 1	129	62%	
Stage 2	35	17%	
Stage 3	33	16%	
ASTI (All Schools)		Total Schools	209
Stage	# Schools	% Schools	
Stage 1	46	22%	
Stage 2	25	12%	
Stage 3	23	11%	

Impact Data

The percentage of schools in each performance level based on the cut scores inputted in the Performance Level Threshold (Cut) Score table is summarized in a table and stacked bar graphs.

Impact Data			
Achieve	Progress	Prog ELP	Chron Ab
7.3%	6.9%	5.9%	2.9%
30.2%	24.3%	29.4%	20.3%
40.0%	46.0%	47.1%	54.1%
21.5%	21.3%	11.8%	18.4%
1.0%	1.5%	5.9%	4.3%

Impact Data for Elementary and Middle School
(2016-2017)



By-Student Group ATSI Thresholds

In this hypothetical example, the by-student group thresholds used in the criteria at each stage of ATSI identification are determined by the performance of the schools identified for CSI on each indicator. Because the values inputted by the user (for the *CSI Identification Parameters*) affect which schools are identified for CSI, the ATSI thresholds are also indirectly affected. This tables summarize the ATSI thresholds based on the current set of schools identified for CSI.

ATSI Cuts	Econ Dis	Special Ed	LEP	Native	Asian	Black	Hispanic	White
Academic Achievement	26.2	14.1	27.3	35.9	25.9	18.6	30.0	42.5
Progress in ELP			59.7					
Academic Progress	98.7	85.8	111.5	84.1	112.5	73.9	80.0	104.5
Chronic Absenteeism	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

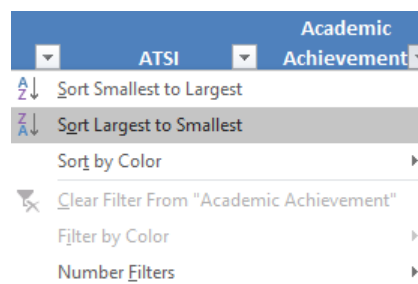
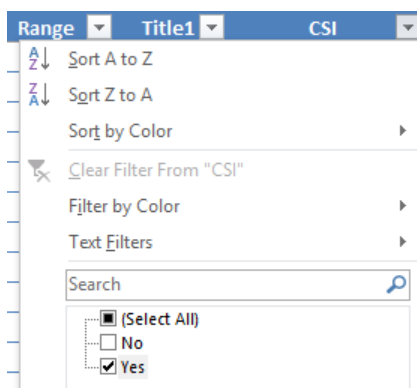
Summary Tab

The *Summary* tab includes a sortable and filterable table with the identification status (CSI, TSI or ATSI), indicator scores and performance levels for all schools in the state.

District	School	Grade Range	Title1	CSI	TSI	ATSI
District1000	School 1	K-6	Yes	No	No	No
District1001	School 1	6-8	No	No	Yes	No
District1001	School 2	K-4	Yes	No	No	No
District1001	School 3	6-8	No	No	No	No
District1001	School 4	K-8	Yes	No	No	No

Academic Achievement	Achievement Performance L	Academic Progress	Progress Performance L	Progress in ELP	Prog in ELP Performance L	Chronic Absenteeism	Chronic Absent Performance L
57.7	Level 4	135.0	Level 4		NA	21.3	Level 2
28.0	Level 2	87.8	Level 2	40.3	Level 2	19.8	Level 3
47.0	Level 3	106.5	Level 3		NA	29.7	Level 2
40.9	Level 3	114.1	Level 3		NA	20.7	Level 2
55.9	Level 4	126.8	Level 4		NA	21.6	Level 2

To evaluate the reasonableness of the state’s accountability system, a user can use the filter feature to find schools that meet a certain criterion (e.g., schools identified for CSI) or sort all schools by one of the indicator (e.g., academic achievement).



Identification Tab

The *Identification* tab gives detailed information about each school’s status through the identification process. It shows if and how school are flagged at each stage for each type of identification process. The screenshot below shows that the school in row 4 (“School 2” in “District1001”) is flagged in Stage 1 because it is a Title 1 school with an academic achievement indicator score (of 47.0) below the state’s annual target (of 50, as inputted by the user on the *Parameters* tab). However, this school is not flagged for Stage 2 because it is not in the bottom 25% (also inputted by the user on the *Parameters* tab) of Title 1 schools for academic progress. This school is therefore not identified for CSI. Similar columns are available for the TSI and ASTI identification process in the *Identification* tab.

	District Name	School Name	Title 1	Academic Achievement (Indicator)	Progress in ELP (Indicator)	Stage 1	Academic Progress (Percentile)	Stage 2	Chronic Absenteeism (Percentile)	Stage 3	CSI
1	District1000	School 1	Yes			N					No
2	District1001	School 1	No								No
3	District1001	School 2	Yes	47.0		Y		N			No
4	District1001	School 3	No								No
5	District1001	School 4	Yes			N					No