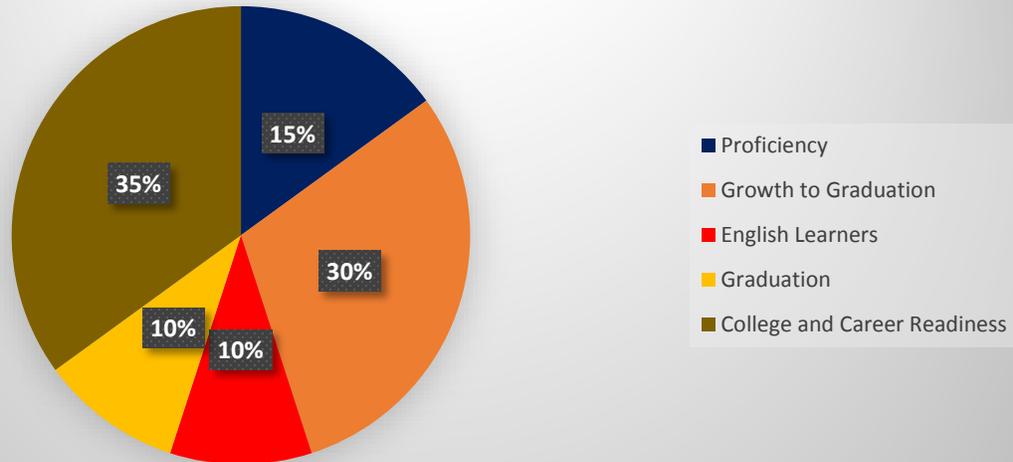


## Proposed 9-12 Alternative School Model



### Descriptive Statistics

Below is a descriptive statistical analysis of the data for alternative schools that was either submitted by the schools or accessed through data already collected and maintained by ADE for the model proposed by the AATAC. It includes ALL schools who submitted something for the self-reported data the data group requested, regardless of if they have a FAY of 10 or not. If we have data for them, it was included. Since we do not have all data for all measures and all alt schools, our analysis is limited to the sample of schools who provided their data. 75 schools in total submitted data, but a sizeable amount of schools provided incomplete or incorrect data. If we could see that data was incorrect we reached out to the schools and offered them the chance to correct their data. However, even after taking steps to reach out to schools in that situation, we still did not receive complete submissions from all schools who participated in the data collection. With the low n-count of schools who submitted data, the question arises of how reflective this sample is of the overall total population of alternative schools which should be kept in mind when decisions are being made. The data analyzed below includes approximately 44 percent of all alternative schools and approximately 50 percent of all students enrolled in alternative schools.

Variable	N	Mean	Median	Std Dev	Minimum	Maximum
Current Proficiency	71	24.96	20.67	14.89	2.48	74.16
Academic Persistence	75	78.43	79.73	19.21	8.3	100
Credit Earned	62	58.65	62.22	22.61	0	100
On Track to Graduate	50	82.76	86.72	19.54	9.09	100
EL Proficiency	51	15.17	0	24.97	0	100
El Growth	48	26.79	21.11	28.97	0	100
Grad Rate	73	54.46	51.87	19.08	17.07	100
CCRI	59	77.6	86.77	24.61	0	100

## Descriptive Statistics for AATAC A-F System

Below is a descriptive statistical analysis of the same data provided previously, however in this version the proposed Alt A-F framework has been applied to the data. The n-counts may look slightly different from the previous table due to the requirement of a minimum of 10 FAY students for the components, in alignment with the practices of traditional schools. Further, as with traditional A-F, schools had to be eligible for at least 50 points to receive a letter grade. Bonus points for graduating 80 percent or more of a school's homeless population and 80 percent or more of a school's SPED population were not considered in the data analyzed below. Since bonus points are all or nothing points, descriptive statistics would not be useful interpretations. 24 schools received the homeless bonus points, 32 received the SPED bonus points, and no school received foster points as ADE did not collect this information in FY18.

Variable	N	Mean	Median	Std Dev	Minimum	Maximum	Max Points
Current Proficiency	71	3.71	3.10	2.23	0.37	11.12	15
Academic Persistence	74	7.73	7.97	1.92	0.83	10	10
Credit Earned	62	5.86	6.22	2.26	0	10	10
On Track to Graduate	48	7.83	8.62	2.57	0	10	10
EL	11	6.81	7	2.55	2	10	10
Grad Rate	73	5.46	5.18	1.90	1.70	10	10
CCRI	57	27.94	30.96	7.86	3.3	35	35

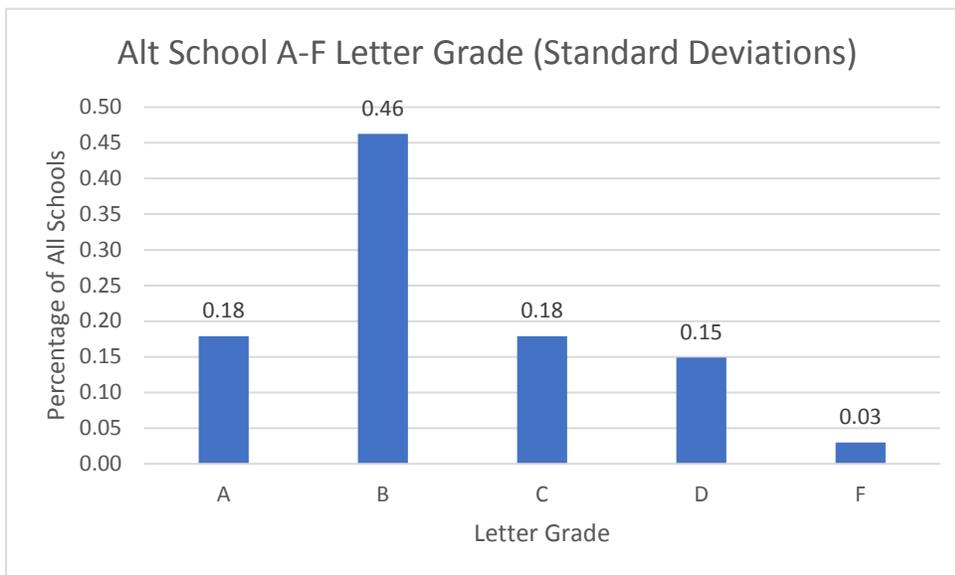
## Cut Scores for Proposed AATAC A-F System

Below are three possible cut score systems to assign letter grades. For the sake of clarity and simplicity, we are not proposing any models that require transformation of the data. We mimicked the type of cut scores SBE has asked for previously for traditional schools. These cut scores are for analysis only and are not formal recommendations from the AATAC of cut scores for letter grades.

### Model 1

The first model uses standard deviations from the mean score of total points for the state. This is how traditional schools set their cut scores in the first year, FY17, of the current A-F system. SBE voted to use FY17's cut scores for FY18 so as not to have a "moving target." The state average score for the collected alternative school data is 62.99. The ranges for the letter grade are provided as well. Bonus points for homeless and SPED graduation rates were added to the totals after cut scores were set, in line with the A-F model for traditional schools. The requirement of the FAY N-count equaling ten was not put on homeless or SPED graduation rates, in line with the traditional model.

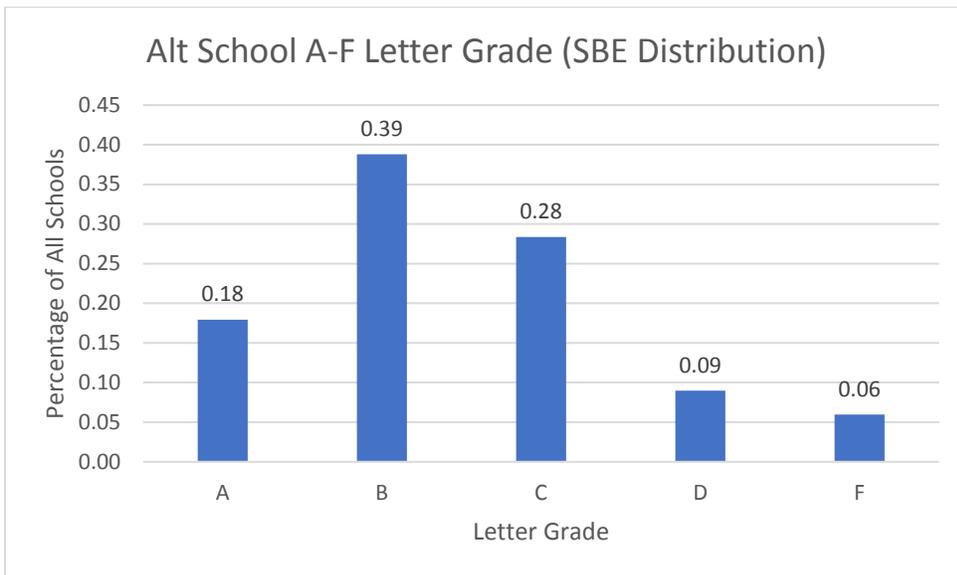
Letter Grade/Range	Min	Max
A	0.74	100.00
B	0.63	0.7399
C	0.52	0.6299
D	0.42	0.5199
F	0.00	0.4199



## Model 2

As mentioned above, for FY18 the SBE voted to use the FY17 cut scores in FY18, based in part upon not wanting to have a moving target. The cut score system below uses as close as possible the distribution of letter grades in the traditional model for FY18 to set the distribution of letter grades for the alternative model.

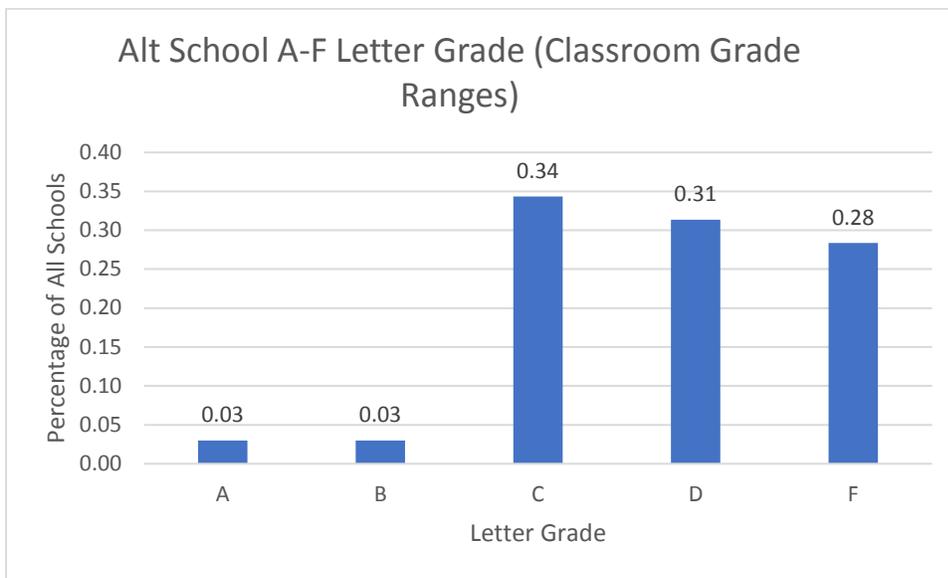
Letter Grade/Range	Min	Max
A	74	100
B	67	73.99
C	49	67.99
D	43	48.99
F	0	42.99



### Model 3

The final model presented below is based on the letter grade ranges we might frequently see in school classrooms.

Letter Grade/Range	Min	Max
A	90	100
B	80	89.99
C	70	79.99
D	60	69.99
F	50	59.99



### **Impact of School Size on A-F Performance**

A question that members of the alternative school data group had on our analysis was around the impact of school size on performance in the proposed alternative school A-F system. For this analysis, letter grades were set using standard deviations from the mean total score. An explanation of these scores is in the table below. This analysis done to give the data group a consistent point for analysis, with the full knowledge that actual letter scores will be set by the State Board of Education at a later point in time. This analysis is aligned with “Model 1” above.

Letter Grade	Relationship to the Mean
A	Above one standard deviation from the mean
B	Between .01 of the mean and one standard deviation above
C	The mean and within one standard deviation below the mean
D	Between one standard deviation and two standard deviations from the mean
F	Below two standard deviations from the mean

For reference, the ranges for the five group sizes used are included below, as are the distribution of alternative schools in the total population of schools and our sample. Some schools may not get a letter grade if they were not eligible for at least 50 out of the total 100 points. This may occur due to schools having less than ten FAY students for an indicator or not reporting self-reported data.

Range		
Group	Min	Max
1	0	35
2	36	80
3	81	190
4	191	350
5	351	1000

<b>All Alt Schools</b>		
<b>Size Group</b>	<b>Number of Schools</b>	<b>Percent of All Alternative Schools</b>
1	16.00	0.10
2	31.00	0.20
3	64.00	0.41
4	29.00	0.18
5	17.00	0.11

<b>Our Sample</b>		
<b>Size Group</b>	<b>Number of Schools</b>	<b>Percent of Alternative Schools in Sample</b>
1	7.00	0.09
2	11.00	0.15
3	29.00	0.39
4	14.00	0.19
5	13.00	0.18

<b>Group 1</b>	<b>Count</b>	<b>Percent of Group</b>
A	1.00	0.14
B	1.00	0.14
C	0.00	0.00
D	1.00	0.14
F	1.00	0.14
No Grade	3.00	0.43

<b>Group 2</b>	<b>Count</b>	<b>Percent of Group</b>
A	2.00	0.18
B	4.00	0.36
C	1.00	0.09
D	3.00	0.27
F	0.00	0.00
No Grade	1.00	0.09

<b>Group 3</b>	<b>Count</b>	<b>Percent of Group</b>
A	5	0.17
B	14	0.48
C	3	0.10
D	4	0.14
F	0	0.00
No Grade	3	0.10

<b>Group 4</b>	<b>Count</b>	<b>Percent of Group</b>
A	2	0.14
B	8	0.57
C	3	0.21
D	1	0.07
F	0	0.00
No Grade	0	0.00

<b>Group 5</b>	<b>Count</b>	<b>Percent of Group</b>
A	2	0.15
B	4	0.31
C	5	0.38
D	1	0.08
F	1	0.08
No Grade	0	0.00

Another potentially useful point for understanding the impact of school size on performance in the proposed alternative school A-F letter grade system is to look at the correlation coefficient between school performance and school size. There are four different ways we could look at this comparison: school score by school enrollment, school score by size group, school letter grade by school enrollment, school letter grade by size group. As you can see below, consistently the correlation coefficients fall well within the -.30 and +.30 range, falling closely to zero. This suggests that there is little to no relationship between school size and performance on the proposed alternative school A-F letter grade system based on the schools in our sample.

<b>Variables Analyzed</b>	<b>Coefficient</b>
School Score by Size Group	0.04
School Score by Enrollment	-0.04
Letter Grade by Enrollment	-0.01
Letter Grade by Size Group	0.03

### **Proficiency by School Size**

An additional concern raised by members of the data group focused on the impact of school size on AzMerit and MSAA proficiency rates. Again looking at correlation coefficients, across both school enrollment and the ADE school size groupings we find little to no relationship between proficiency and school size. As you can see below, consistently the correlation coefficients fall well within the -.30 and +.30 range, falling closely to zero. This suggests that there is no statistically significant relationship between school size and performance on proficiency.

<b>Variables Analyzed</b>	<b>Coefficient</b>
Proficiency by Size Group	0.08
Proficiency by Enrollment	0.05