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To: Joint Education Interim Committee

From: Laurel Ballard, Student and Teacher Resources Team Supervisor

Date: September 8, 2016

Re: Distance Education (Priority #6) Historical Comparison of  
Student Performance

The Wyoming Department of Education (WDE) has prepared the additional information on distance education requested by the Committee at the June 14, 2016, meeting. The following report is a historical comparison of distance education and non-distance education student assessment performance.

### **Distance Education and Non-Distance Education Student Performance Comparison Report**

W.S. 21-13-330 (f)(i) defines distance education as instruction that occurs when students and teachers are separated by time and space and connected by a means of a communications source to provide synchronous or asynchronous instruction. Currently in Wyoming, all full-time distance education students receive instruction via the internet in online courses. The online teachers provide instruction through a number of communication strategies beyond the instruction embedded in the online content. Examples of instruction delivery through other communication methods includes but is not limited to telephone conversations, chat room discussions, email, video conferencing, and in some cases, in person instructional periods.

The Distance Education (DE) and Non-Distance Education (Non-DE) Student Performance Comparison Report provides an analysis of K-12 students enrolled full-time in distance education programs compared to students enrolled full-time in brick and mortar settings. In addition to a historical comparison of the state administered ACT and PAWS assessment results, the following information about distance education students is also included in the report:

- Enrollment numbers by school year
- Grade level at the time of full-time distance education enrollment
- Student demographics
- Reasons students and families chose to enroll in full-time online programs
- Student grade level at time of full-time online enrollment

## Distance Education Numbers

To provide a historical perspective, the past three school years are included in the student assessment data: 2013-2014, 2014-2015, and 2015-2016. The distance education student criteria is based on course section enrollment. Any students with 50% or more distance education courses at the time of the March accountability snapshot date were identified as full-time distance education students. Non-distance education students reported are students with less than 50% course section enrollment in brick and mortar courses at the same March snapshot dates.

## Student Enrollment

There are two types programs currently available to Wyoming students enrolled in distance education full-time. Two districts in the state offer full-time distance education courses statewide to students from kindergarten through 12th grade. The Wyoming Connections Academy program is located in Big Horn County School District No.1 and the Wyoming Virtual Academy program is located in Niobrara School District No.1. Additionally, two districts offer full-time distance education programs that is only available to students who reside within the districts. Natrona County School District No. 1 students may participate in the Natrona Virtual Learning program offered for grades K-12 and Campbell County School District No. 1 students may attend the Campbell County Virtual School program grades K-6.

Table 1 is a breakdown of the number of students enrolled in distance education each school year by grade levels. It also includes the number of students enrolled in each type of distance education program; single, or within, district and statewide.

**Table 1: Distance Education Student Enrollment**

Grade Level	2013-2014	2014-2015	2015-2016
Kindergarten	52	50	48
First	52	58	53
Second	67	49	50
Third	63	62	53
Fourth	67	63	54
Fifth	69	59	62
Sixth	86	57	80
Seventh	77	92	103
Eighth	113	96	107
Ninth	116	125	101
Tenth	108	113	125
Eleventh	90	107	104
Twelfth	60	59	63
<b>Total Enrollment</b>	<b>1020</b>	<b>990</b>	<b>1003</b>
<b>Single/Within District DE Program</b>	<b>71</b>	<b>63</b>	<b>70</b>
<b>Statewide DE Program</b>	<b>949</b>	<b>927</b>	<b>933</b>

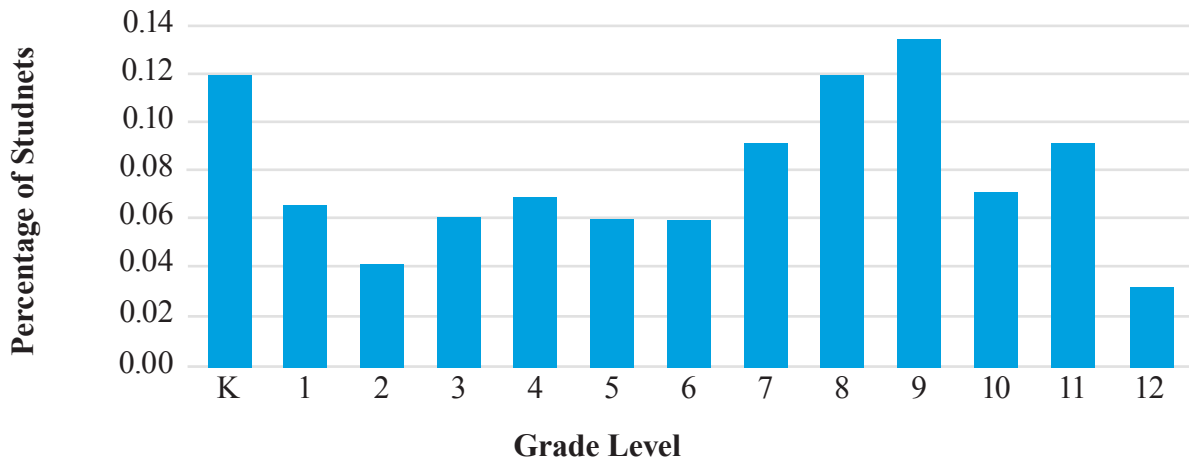
Some of the trends included in the Table 1 analysis follows:

- During the three years, the enrollment in full-time distance education has been relatively stable.
- There is a trend in increased enrollment during middle school: 8th grade increase in 2012-13 & 2013-14, 7th grade increase in 2015-16.
- A large drop in enrollment is seen between 11th and 12th grade. For example, there were 107 11th graders in 2014-15 and only 63 12th graders the following year which is a 59% drop in enrollment for the cohort.
- Enrollment in both types distance education programs has remained consistent over the three year period with the single district enrollment being lower than the statewide participation.

### Grade Level at Time of Full-Time DE Enrollment

In September 2015 the Wyoming Department of Education (WDE) conducted a survey on behalf of the Distance Education Task Force asking why students and parents elect the full-time online option in order to better understand why some students and parents prefer full-time distance education. The WDE received a total of 237 responses from families with students enrolled in full-time online programs to the survey with 95% of the respondents being parents. These respondents were spread across the state and included 35 of the 48 school districts. In addition to other items, parents and students were asked to indicate the grade level of the student at the time they enrolled in distance education full-time. The survey responses in Chart 1 represent the percentages of when students first enrolled in a full-time distance education program by grade level.

**Chart 1: 2015 Survey “Grade Level at Time of Initial Full-Time Distance Education Enrollment”**



Of the 237 respondents, students enroll full-time in distance education at higher rates at Kindergarten, 8th grade, and 9th grade. While this data only represents the 2015 survey respondents, the percentages of enrollment are similar to the enrollment numbers at the peak grade levels in Table 1 above.

## Student Demographics

Student demographic information for full-time distance education (DE) students and non-distance education (NDE) students by school year.

**Table 2: Distance Education (DE) and Non-Distance Education (NDE) Student Demographics**

Category	Group	2013-14 N	2013-14%	2014-15 N	2014-15 %	2015-16 N	2015-16 %
Gender	Female	54.2%	48.3%	55.3%	48.3%	53.4%	48.3%
	Male	45.8%	51.7%	44.7%	51.7%	46.6%	51.7%
Race/Ethnicity	Asian	0.7%	0.9%	0.9%	0.8%	0.4%	0.8%
	Black	1.0%	1.2%	1.4%	1.1%	1.1%	1.1%
	Hispanic	7.1%	13.0%	8.9%	13.6*	8.1%	13.9%
	Multi	2.0%	2.0%	1.8%	2.2%	2.1%	2.1%
	Native	2.1%	3.3%	1.6%	3.2%	1.6%	3.3%
	Pacific	0.1%	0.1%	0.2%	0.1%	0.6%	0.2%
	White	87.2%	79.3%	85.2%	78.8%	86.1%	78.6%
Free & Reduced Lunch		12.5%	37.2%	10.0%	31.0%	11.8%	37.6%
Special Education		10.8%	14.6%	12.7%	15.0%	10.5%	14.3%
English Learners		0.2%	3.2%	0.0%	3.2%	0.3%	3.2%
<b>Total Students</b>		<b>1,020</b>	<b>90,098</b>	<b>990</b>	<b>91,062</b>	<b>1,003</b>	<b>91,813</b>

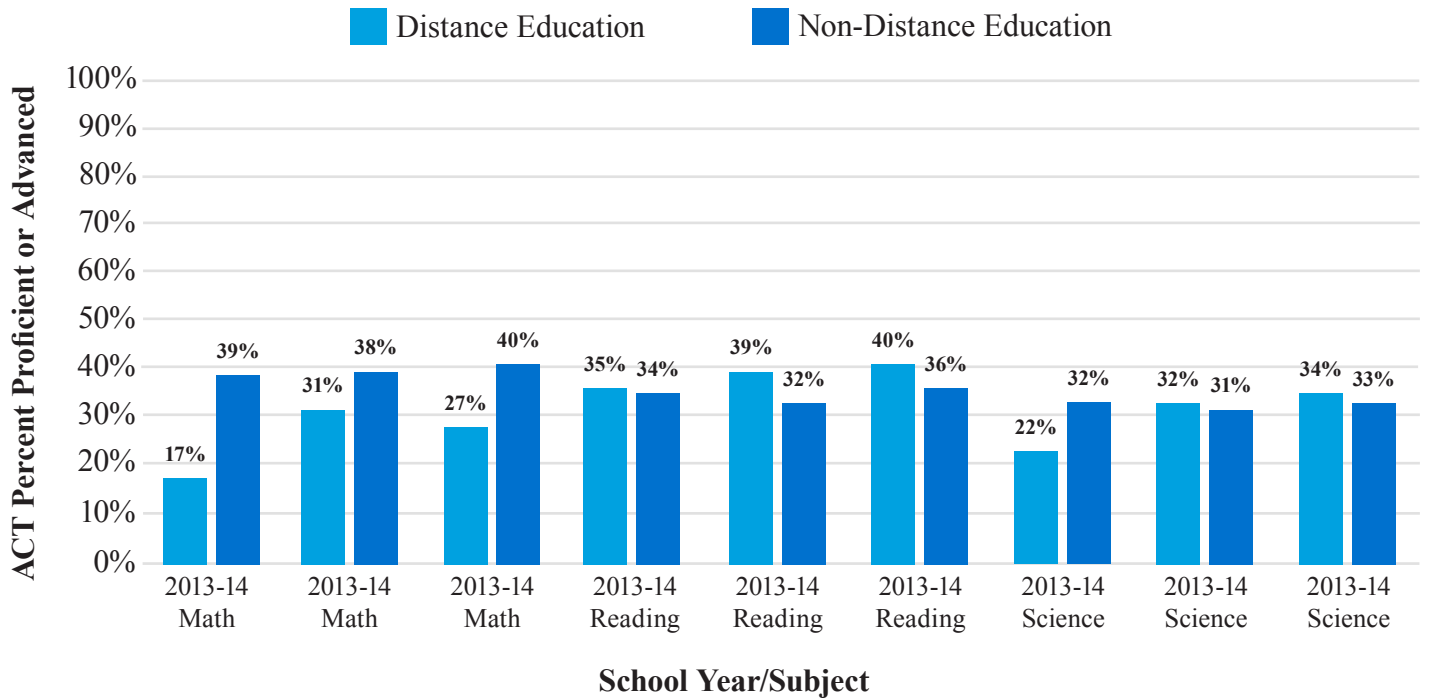
There are key demographic comparisons to highlight between the DE and Non-DE students:

- There are fewer distance education minority students.
- Lower rates of distance education students eligible for free and reduced lunch.
- A lower percentage of students with disabilities in full-time distance education.
- Fewer English language learners participating in distance education.

## Statewide Assessment Comparisons

The results from the two state assessments are provided for students in the 11th grade and grades 3 through 8. The percentage of students obtaining a proficient or advanced performance level on the eleventh grade state administered ACT is presented in Chart 2 and Table 3. Chart 3 and Table 4 provide the percentage of students obtaining a proficient or advanced performance level on the PAWS Assessment in grades 3 through 8 combined.

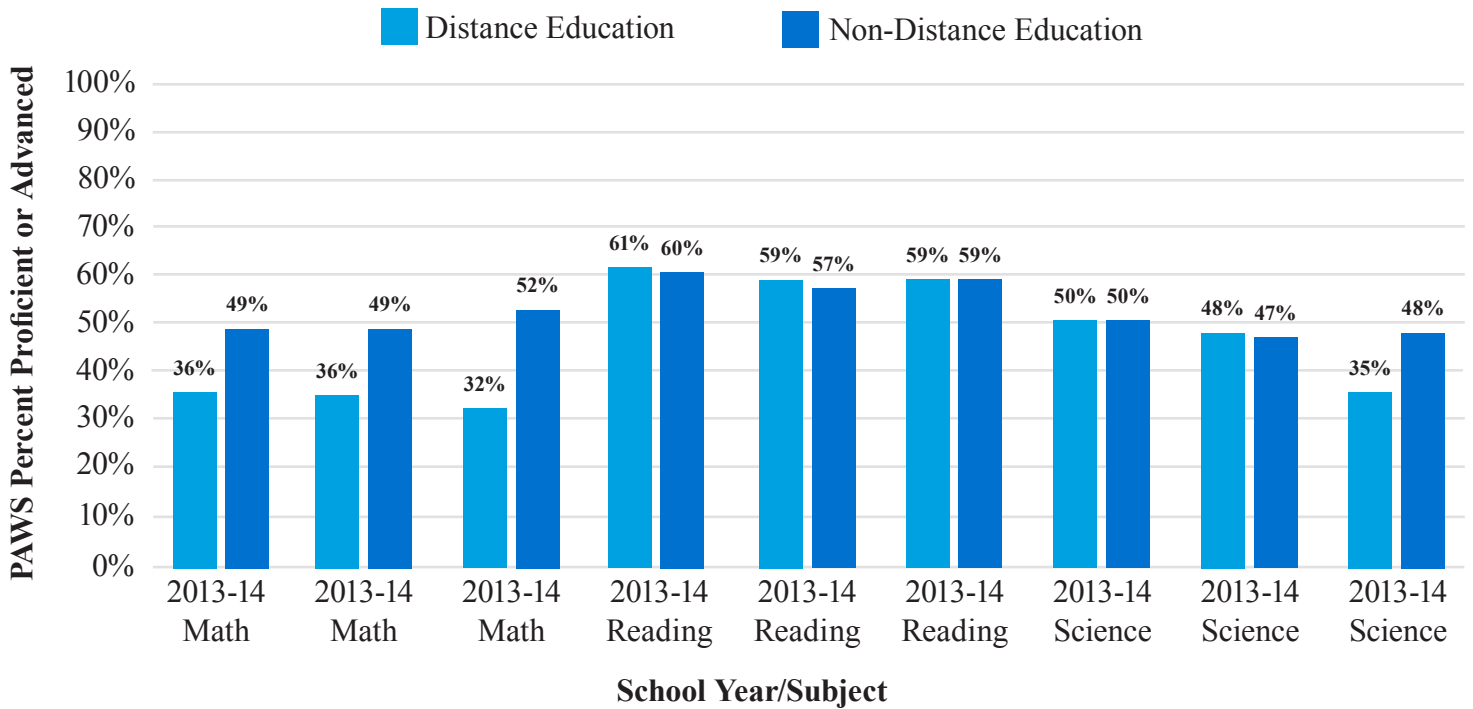
**Chart 2: ACT Percent Proficient or Advanced**



**Table 3: ACT Percent Proficient or Advanced with Counts and Distance Education vs. Non-Distance Education Difference**

School Year	Subject	Distance Education		Non-Distance Education		Difference
		N Count	Percent Proficient or Advanced	N Count	Percent Proficient or Advanced	
2013-14	Math	78	17%	5,688	39%	-22%
2014-15	Math	85	31%	5,796	38%	-7%
2015-16	Math	93	27%	5,856	40%	-13%
2013-14	Reading	78	35%	5,684	34%	1%
2014-15	Reading	85	39%	5,786	32%	7%
2015-16	Reading	93	40%	5,854	36%	4%
2013-14	Science	78	22%	5,686	32%	-10%
2014-15	Science	85	32%	5,791	31%	1%
2015-16	Science	93	34%	5,855	33%	1%

**Chart 3: PAWS Percent Proficient or Advanced**



**Table 4: PAWS Percent Proficient or Advanced with Counts and Distance Education vs. Non-Distance Education Difference**

School Year	Subject	Distance Education		Non-Distance Education		Difference
		N Count	Percent Proficient/Advanced	N Count	Percent Proficient/Advanced	
2013-14	Math	475	36%	41,410	49%	-13%
2014-15	Math	418	36%	42,219	49%	-13%
2015-16	Math	449	32%	43,040	52%	-20%
2013-14	Reading	476	61%	41,359	60%	1%
2014-15	Reading	418	59%	42,166	57%	2%
2015-16	Reading	450	59%	43,004	59%	0%
2013-14	Science	182	50%	13,639	50%	0%
2014-15	Science	154	48%	13,984	47%	1%
2015-16	Science	159	35%	14,137	48%	-13%

Although the 11th grade DE students have lower performance than Non-DE students on the ACT in math, there is an upward trend in the DE student performance in that content area. In reading, the DE students slightly outperform the Non-DE students. In science, the DE students have consistently improved over time with results being about the same for DE and Non-DE students.

The PAWS performance results mirror the ACT results in that DE students consistently performed at

lower levels than Non-DE students. Similarly, the reading results for distance education students has been consistent with slightly higher performance than Non-DE students.

Science results for DE students were better on PAWS for the first test year (2013-2014) but they dropped below the ACT results for the 2015-2016 test year.

Even though some may be compelled to conclude that participation in distance education is the reason for the lower score areas, especially in math, there is not enough data to draw this correlation. The simplicity of the data analysis does not provide enough information to make the assumption that the distance education programs have caused the different performance scores. Differences in performance (assessment percent proficient) may be due to a wide range of unanalyzed variables. Provide examples of variables - Level of parental involvement, factors associated with reasons students enroll at the different grade levels, how were the students performing prior to enrolling in DE.

### Moving Wyoming Distance Education Forward

In the survey of parents and students conducted on behalf of the Distance Education Task Force in 2015, students and parents were requested to identify, among other items, reasons students enroll in an online program full-time. Table 5 details various reasons why students choose to enroll in full-time DE programs. The responses represent the 237 students and parents who completed the survey and were able to select all options that applied to their reasons for full-time distance education enrollment.

**Table 5: 2015 Survey “Reasons Students Enroll Full-Time in Distance Education”**

<b>Why did you (or your student) decide to go to school full-time online? (select all that apply)</b>			
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>	
To access programs not available locally.	15.2%	36	
To make up missed credits.	5.5%	13	
To get ahead and graduate early.	11.0%	26	
To begin postsecondary education sooner.	7.6%	18	
To pursue passions (sports, performance art, etc.) at level higher than is offered in school.	11.8%	28	
To focus on academics without distractions from classmates.	62.0%	147	
To progress at individual pace.	59.5%	141	
To share thoughts and ideas without competition with classmates.	12.2%	29	
To learn despite health issues that might get in the way of a traditional class setting.	13.1%	31	
To easily communicate with the teacher when needed.	25.3%	60	
To easily communicate with classmates when needed.	7.6%	18	
For the flexibility to accommodate our unusual schedule.	35.4%	84	
To get away from negative peer groups.	59.1%	140	
To sleep in and do school work when you (or your student) are more alert and can concentrate.	16.9%	40	
To escape bullying.	38.0%	90	
We’re located in a remote or rural area which makes getting to a school difficult.	5.9%	14	
I (or your student) was being homeschooled but decided to switch to a Wyoming school district online program.	5.5%	13	
None of the above.	4.2%	10	

The highest rated reasons from the 237 respondents why full-time distance education is preferred include:

- To focus on academics without distractions. (62.0%)
- To progress at individual pace. (59.5%)
- To get away from negative peer groups. (59.1%)

While it is clear some students have good reason to want to pursue full-time distance education, it is not clear what is driving the assessment results for distance education students. To develop meaningful and impactful supports for distance education programs, a comprehensive program evaluation would need to be developed and conducted. With an extensive method of data collection and analysis in place, a more accurate description of distance education student performance could be provided.

Along with a more in depth analysis of distance education programs, the WDE endorses the Distance Education Task Force recommendation to form a committee whose charge is to continually review Wyoming's distance education system. It is also recommended that the committee provide the State Superintendent with recommendations annually for system adjustments and improvements as warranted.