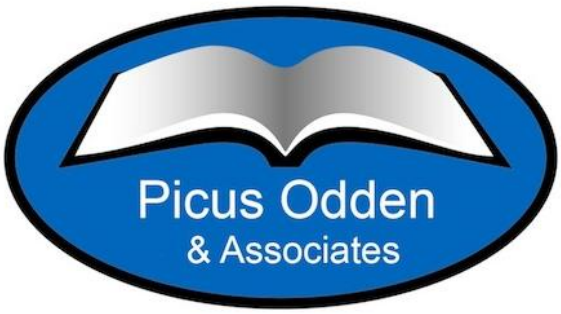
May 26, 2015: The version of the report is identical to the January 15, 2015 version with the following exceptions: a) a corrected Table 3.1 for Model Element 10 and b) a corrected table for historical Model health insurance amounts for Model Element 34.

DESK AUDIT OF THE WYOMING SCHOOL FUNDING MODEL

Prepared for the
Wyoming Legislature



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CHAPTER 1
INTRODUCTION AND OVERVIEW

INTRODUCTION

The purpose of this document is to provide the Wyoming Legislature, at the request of the Joint Education Committee's chairman, with a "desk audit" of the current school funding model and make recommendations for areas that may need to be recalibrated to ensure that funding for the state's public K-12 schools remains adequate. The process of recalibrating the funding system must be done at least every five years to meet Wyoming statutory requirement.

Lawrence O. Picus and Associates (today Picus Odden & Associates) began involvement with the Wyoming recalibration cycle in 2005 when it developed a revised funding model based on the firm's Evidence-Based model of school finance adequacy. The Evidence-Based Wyoming Funding Model was enacted during the 2006 session of the Wyoming Legislature and Wyoming began to fund schools based on this new model starting with the 2006-07 school year. We note that while the legislature adopted most of the Evidence-Based (EB) recommendations for each element of the funding model, in a few cases the legislature adopted a more generous formula and in some cases a somewhat less generous formula. Over time, moreover, this has led to consideration of the "cost-based model," which reflects all of our core recommendations, and the "Legislature's funding model," which reflects the decisions made by the legislature. At various points in this report, we will refer to the "cost-based model" or the "Legislature's funding model" to reflect those differences.

For the 2010 recalibration process, Picus Odden & Associates conducted an initial desk audit and participated in the further recalibration of the Funding Model. At the same time, the Legislature contracted for several studies to enhance the way the model was adjusted for inflation, developing a more sophisticated external cost adjustment (ECA) process to enhance the accuracy of cost estimates of the Funding Model's elements. The state also undertook several studies to develop a better understanding of the labor market for school districts and the adequacy of school districts' salaries in Wyoming.

This document represents the next step in the continued review of the Wyoming Funding Model. It is a desk audit of the Model's components as it was enacted and used in school year 2014-15. This document, considers each element of the Wyoming Funding Model, reviews current educational research related to each element and makes a recommendation as to whether or not the Legislature should consider recalibrating that element of the funding model. The decision as to whether or not a recalibration will be conducted, and the extent to which elements of the model will be reviewed remains with the Legislature. This document merely presents our recommendations. There are three reasons why we recommend an element be recalibrated:

1. Cases where the Legislature's funding model differs from the cost-based model. For example, core class sizes in the cost-based model are 15 in grades K-3 and 25 for grades 4 and above, and 16 for grades K-5 and 21 in grades 6 and above in the Legislatively funded model. We recommend recalibration of this element to encourage the Legislature to

reconsider whether it wants to adopt the EB recommendation or continue with its previous legislative decision.

2. Cases where we have changed our EB recommendation. For example, we now recommend each prototypical elementary school be provided a guidance counselor. This differs from our approach in 2010, and is presented as a recommendation for recalibration to ensure the Legislature has the opportunity to consider these changes.

3. Cases where either the context or research evidence has changed significantly over the past several years. A good example is technology and instructional materials, which we recommend be recalibrated because of the emergence of multiple technology based instructional materials and textbooks that were not available in 2010.

WYOMING SCHOOL FUNDING OVER THE PAST DECADE

Table 1.1 displays operating revenues for Wyoming's public schools, on both a total and per pupil basis, for School Years (SY) 2000-01 to SY 2013-14. In the ten years from 2004 to 2014, operating revenues per pupil grew from $10,629 to $17,272, an increase of $6,643 or 62%, substantially greater than inflation.

Table 1.1 also shows a notable increase in general and special fund revenues from SY 2005-06 to SY2006-07. This jump is due largely to the 2005 recalibration, which proposed increased funding that was provided by the 2006 legislature for SY 2006-07. Operating revenues per pupil increased by $2,934 between the 2005-06 and the 2006-07 school year.

The jump in the special revenue fund in SY2010-11 and decline in the following years is primarily a result of one time federal stimulus and Education Jobs revenues provided to all states during the 2008-09 national recession. Because districts received federal funding on a reimbursement basis and the dollars were accounted in the year expended, those revenues impacted to some extent the 2011-12 and 2012-13 school years, but were gone by the 2012-13 school year.

Table 1.1 shows that over the past decade the state has provided large increases in funding for its schools, particularly the funding increase resulting from the 2005 recalibration. The data also show that funding has increased over the past decade by more than 62% in per pupil terms. It would be reasonable to expect a significant improvement in student performance after this notable funding gain. As shown in the next chapter, data from the National Assessment of Education Progress (NAEP) suggest improvements in student performance have not grown at the same pace as the growth in revenues for education in Wyoming.

Table 1.1
Wyoming K-12 Operating Revenues - School Years 2000-01 to 2012-13

School Year	General Fund	Special Revenue Fund	Enterprise Fund	Total Operating Revenue	Wyoming K-12 Enrollment	Operating Revenue per Student
2000-01	$664,657,984	$68,247,112	$21,125,317	$754,030,413	89,531	$8,422
2001-02	$717,117,803	$91,829,659	$22,781,081	$831,728,543	87,897	$9,463
2002-03	$768,273,953	$104,543,158	$22,401,472	$895,218,583	86,117	$10,395
2003-04	$759,619,272	$116,951,879	$24,154,766	$900,725,917	84,741	$10,629
2004-05	$840,452,300	$164,845,081	$25,579,975	$1,030,877,356	83,772	$12,306
2005-06	$898,107,583	$121,829,032	$26,464,070	$1,046,400,685	83,705	$12,501
2006-07	$1,115,203,988	$161,682,089	$29,363,850	$1,306,249,927	84,629	$15,435
2007-08	$1,180,793,264	$158,145,035	$31,249,986	$1,370,188,285	85,578	$16,011
2008-09	$1,193,970,428	$174,995,823	$37,904,243	$1,406,870,494	86,519	$16,261
2009-10	$1,248,998,876	$174,398,890	$38,475,854	$1,461,873,620	87,420	$16,722
2010-11	$1,274,738,890	$212,112,989	$36,257,833	$1,523,109,712	88,165	$17,276
2011-12	$1,331,844,177	$195,130,459	$37,928,804	$1,564,903,440	89,476	$17,490
2012-13	$1,370,360,483	$182,762,773	$37,539,172	$1,590,662,428	90,990	$17,482
2013-14	$1,377,783,140	$177,626,919	$37,376,032	$1,592,786,091	92,218	$17,272

Source: Wyoming Department of Education; WDE 601 WISE Annual District Report and WDE 684 WISE TCS Fall Data

Note: Does not include 85xxx - miscellaneous revenue sources (transfers, bond issuances, sale of assets and contributed capital transfers)

CHAPTER 2
THE SCHOOL IMPROVEMENT MODEL

The intent of the Wyoming School Funding model is to identify the costs of providing the state's basket of educational goods and services and then to provide each school district with adequate funds to provide that basket such that each student is given an equal opportunity to meet Wyoming's student performance standards. Although a direct linkage between funding and student performance does not exist, the Wyoming School Funding Model is designed to allocate adequate resources to provide all students with robust opportunities to meet college and career ready standards. Regardless of whether high school graduates go on to college or enter the workforce, today's global, knowledge-based economy requires a similar set of skills and expertise of each graduate.

No matter what course of studies a high school student completes – college prep or career tech -- all of Wyoming's students are expected to achieve to college and career ready standards. This includes children from low-income homes, students of color, English language learners (ELL) and students with disabilities. The basket of educational goods and services and a cost-based funding model to support that basket must be sufficiently robust to allow students in all 48 school districts in Wyoming to attain these standards. Over the past decade, Wyoming's policy makers have provided sufficient funding to meet this goal and continue to work to ensure the funding model meets the needs of all students.

Before presenting our desk audit of the elements in the Wyoming funding model, this chapter provides a description of the school improvement model that undergirds the Evidence-Based model used to estimate school finance adequacy in Wyoming. Specifically this chapter contains:

- A description of the school improvement model embedded in the Evidence-Based (EB) approach to adequate school funding. The EB model outlines how resources can be used to boost student performance, and

- A summary of actual student achievement gains in Wyoming over the past 23 years – a time frame that includes student performance before the Supreme Court's first ruling in *Campbell* I.

Since 2006 the Legislatively funded model has consistently provided more total funding to Wyoming schools than the estimated level of adequate funding developed through the cost-based model. The Legislature's intent – as we understand it – is to ensure school districts have adequate resources to improve student achievement and meet the State's student performance standards. The data in Table 1.1 show that in its effort to ensure adequate funding for schools, the Legislature has increased operating revenues per pupil by 62% in the past decade. Unfortunately, student achievement has not risen at the same or even similar rate.

THE SCHOOL IMPROVEMENT MODEL EMBEDDED IN THE EVIDENCE-BASED APPROACH TO SCHOOL FINANCE ADEQUACY

The Evidence-Based (EB) model used to estimate a cost-based spending level for schools has been designed to allow districts and schools to provide every child with an equal opportunity to learn to state performance standards. The EB model is unique in that it is derived from research and best practices that identify programs and strategies that boost student learning. Further, the formulas and ratios for school resources that have been developed from that research have been reviewed by dozens of educator panels in multiple states over the past decade. The model relies on two major types of research:

1. Reviews of research on the student achievement effects of each of the model's individual major elements, with a focus more recently on randomized controlled trials, the "gold standard" of evidence on "what works."

2. Studies of schools and districts that have dramatically improved student performance over a 4-6 year period – what is sometimes labeled "a doubling of student performance" on state tests.

As a result of our research and work in other states, the EB approach is now more explicit in identifying the components of a school improvement model, and better articulates how all the elements in the funding model are linked at the school level to strategies that when implemented produce notable improvements in student achievement (see Odden & Picus, 2014 Chapter 5).

Improving and high performing schools have clear and specific student achievement goals, including goals to reduce achievement gaps linked to poverty and minority status. The goals are nearly always specified in terms of performance on state assessments.

Compared to traditional schools where teachers work in isolated classrooms, improving schools organize instruction differently. Regardless of the context – urban, suburban or rural, rich or poor – improving and high performing schools organize teachers into collaborative teams: grade level teams in elementary schools and subject or course teams in secondary schools. With the guidance and support of instructional coaches, the teacher teams work with student data – usually short-cycle or formative assessment data – to:

- Plan standards-based curriculum units
- Teach those units simultaneously
- Debrief on how successful the units were, and
- Make changes when student performance does not meet expectations.

This collaborative teamwork makes instruction "public" over time by identifying a set of instructional strategies that work in the teachers' school. Over time all teachers are expected to use the instructional strategies that have been demonstrated to improve student learning and achievement.

Improving and high performing schools also provide an array of "extra help" programs for students struggling to achieve to standards. This is critical because the number of struggling students is likely to increase as more rigorous programs are implemented to prepare all students for college and careers. Individual tutoring, small group tutoring, after school academic help and summer school focused on reading and mathematics for younger students, and courses needed for high school graduation for older students, represent the array of "extra help" strategies these improving schools deploy. The idea is to "hold standards" constant and vary instructional time.

These schools exhibit dense leadership. Teachers lead by coordinating collaborative teams and through instructional coaching. Principals lead by structuring the school to foster instructional improvement. The district leads by insuring that schools have the resources to deploy the strategies outlined above with a focus on aggressive student performance goals, improving instructional practice and taking responsibility for student achievement results.

Successful and improving schools seek out top talent. They know that the challenge to prepare students for the competitive and knowledge-based global economy is difficult and requires smart and capable teachers and administrators to effectively get the educational job done.

We have continued to enhance the details of the strategy of school improvement embedded in the EB funding model. We most recently summarized our findings in the fifth edition of our textbook (Odden & Picus, 2014) as well as in several books that profile schools and districts that have moved the student achievement needle (Odden & Archibald, 2009; Odden, 2009; Odden, 2012). We have also studied dramatically improving schools in Vermont and Maine as part of school finance studies we recently completed in both states. We found the theory of improvement embodied in the EB model is reflected in nearly all these successful schools (Picus, Odden, et al., 2011; Picus, Odden, et al., 2013). In addition, other researchers and analysts have found similar features of schools that significantly improve student performance and reduce achievement gaps (Blankstein, 2010, 2011; Chenoweth, 2007, 2009).

This year, Greg Duncan and Richard Murnane (2014) reached similar conclusions. They note that for all students to have a chance at success in the emerging global economy, they will need high quality preschool programs, followed by effective elementary and secondary schools. The key features needed in each school include: 1) leadership focused on improving instructional practice; 2) within school organization of teachers into teams that over time create a set of effective instructional practices and deploy them systematically in all classrooms; 3) a culture of assistance (e.g., instructional coaches and ongoing professional development) and accountability (e.g., adults taking responsibility for the impact of their school actions on student performance); and 4) an array of extra help strategies to extend learning time for any student who needs more time to achieve to standards.

Although the details of studies of improving and high performing schools vary, and different authors highlight somewhat different elements of the process, the overall findings are more similar than different. This suggests all schools can improve if they have adequate resources – which Wyoming schools have. The key is to deploy them effectively.

The EB model for adequately funding schools signals how districts and schools can use the funds for programs and strategies that would allow them to produce substantial gains in student academic performance. We organize the elements of the school improvement model embedded in the EB funding model into ten areas. In general, we find that schools and districts that produce large gains in student performance follow ten similar strategies (see Chapter 4 and 5 of Odden & Picus, 2014; Odden, 2009), resources for each of which are included in the EB model:

1. Analyze student data to become deeply knowledgeable about performance issues and to understand the nature of the achievement gap. The test score analysis usually first includes review of state test results and then, over time, analysis of formative/short cycle (e.g., Renaissance Learning Star Enterprise) as well as benchmark assessments (e.g., NWEA MAP) to help tailor instruction to precise student needs, to progress monitor students with an Individual Education Plan to determine whether interventions are working, and to follow the progress of students, classroom and the school over the course of the academic year. Improving schools are "performance data hungry."

2. Set higher goals such as aiming to educate at least 95 percent of the students in the school to proficiency or higher on state reading and math tests; seeing that a significant portion of the school's students reach advanced achievement levels; having more high school students take and pass AP classes; and making significant progress in closing the achievement gap. The goals tend to be explicit as just noted, and far beyond just producing "improvement" or "making AYP." Further, because the goals are ambitious, even when not fully attained they help the school produce large gains in student performance.

3. Review evidence on good instruction and effective curriculum. Successful schools throw out the old curriculum, replace it with a different and more rigorous curriculum, and over time create their specific view of what good instructional practice is to deliver that curriculum. Changing curriculum is a must for schools implementing more rigorous college and career ready standards. And such new curriculum requires changes in instructional practice. Successful schools also want *all* teachers to learn and deploy new instructional strategies in their classrooms and seek to make good instructional practice systemic to the school and not idiosyncratic to each teacher's individual classroom.

4. Invest heavily in teacher training that includes intensive summer institutes and longer teacher work years, provide resources for trainers, and, most importantly, fund instructional coaches in all schools. Time is provided during the regular school day for teacher collaboration focused on improving instruction. Nearly all improving schools have found resources to fund instructional coaches to work with school-based teacher data teams, to model effective instructional practices and to observe teachers and give helpful but direct feedback. This focus has intensified now that schools are delivering a more rigorous curriculum focused on educating all students to college and career proficiency levels. And professional development is viewed as an ongoing and not a "once and done activity."

5. Provide extra help for struggling students and, with a combination of state funds and federal Title 1 funds, provide some combination of tutoring in a 1-1, 1-3, or 1-5 format. In some cases this also includes extended days, summer school, and English language development for all ELL students. These Tier 2 interventions in the Response to Intervention (RTI) approach to helping struggling students achieve to standards are absolutely critical. For many students, one dose of even high quality instruction is not enough; many students need a combination of extra help services in order to achieve to their potential. No school producing large gains in student learning ignored these extra help strategies altogether or argued that small classes or preschool were substitutes.

6. Restructure the school day to provide more effective ways to deliver instruction. This includes multi-age classrooms in elementary schools and block schedules and double periods of mathematics and reading in secondary schools. Schools also "protect" instructional time for core subjects, especially reading and mathematics. Further, most improving schools today organize teachers into collaborative teams – grade level teams in elementary schools and subject/course teams in secondary schools. These teams meet during the regular school day, often daily, and collaboratively develop curriculum units, lesson plans to teach them, and common assessments to measure student learning results. Further, teams debrief on the impact of each collaboratively developed unit, reviewing student learning overall and across individual classrooms.

7. Provide strong leadership and support for data-based decision making and improving the instructional program, usually through the superintendent, the principal and teacher leaders. Instructional leadership is "dense" and "distributed" in successful schools; leadership derives from the teachers coordinating collaborative teacher teams, from instructional coaches, the principal and even district leaders. Both teachers and administrators provided an array of complementary instructional leadership.

8. Create professional school cultures characterized by ongoing discussion of good instruction and teachers taking responsibility for the student performance results of their actions. Over time, the collaborative teams that deliver instruction produce a school culture characterized by: 1) high expectations of performance on the part of both students and teachers, 2) a systemic and school-wide approach to effective instruction, 3) a belief that instruction is public and that good instructional practices are expected to be deployed by every individual teacher, and 4) an expectation that the adults in the school are responsible for the achievement gains (or not made) by students. Professionals in these schools accept responsibility for student achievement results.

9. Bring external professional knowledge into the school, e.g., hiring experts to provide training, adopting new research-based curricula, discussing research on good instruction, and working with regional education service agencies as well as the state department of education. Successful schools do not attain their goals by "pulling themselves up by their own boot straps." They aggressively seek outside knowledge, find similar schools that produce results and benchmark their practices, and operate in ways that typify professionals.

10. Finally, talent matters. Many improving schools today consciously seek to recruit and retain the best talent, from effective principal leaders to knowledgeable, committed and effective teachers. They seek individuals who are mission-driven to boost student learning, willing to work in a collaborative environment where all teachers are expected to acquire and deliver the school's view of effective instructional practice, and who are accountability focused.

In sum, the schools we have studied that have boosted student performance deployed strategies that are strongly aligned with those embedded in the EB model. Further, in our 2008 Wyoming study of school uses of resources, we found that many Wyoming educators shared this view of how schools can increase student performance. These practices bolster our claim that if funds are provided and used to implement these effective strategies, significant student performance gains should follow.

CHANGES IN WYOMING STUDENT ACHIEVEMENT: NAEP SCORES, 1990-2013

Our analysis of student performance on the National Assessment of Student Progress (NAEP) suggests that student performance has improved some, but far less than the rate of increased funding. Table 2.1 displays Wyoming student performance on the NAEP between 1990 and 2013. We use NAEP data because there have been multiple changes in Wyoming's own standardized testing program over those 23 years, leaving NAEP as the only consistent measure of student performance. NAEP data are also comparable across states making analysis of student outcomes on the NAEP tests a better basis for comparison with the rest of the country. The table suggests that Wyoming's students are performing better today than they did in 1990 and in 2003, although the improvement in student achievement has not grown as fast as the growth in per pupil revenues for education.

The largest gains are in mathematics. In Grade 4 math, only 19% of Wyoming's students performed at the proficient or advanced levels in 1992. That percentage more than doubled to 39% by 2003. From 2003 to 2013, the percentage of Wyoming fourth graders performing at the proficient or advanced levels rose to 48%, a 23% increase over the past decade. Grade 8 math performance also improved, but not as much. In 1992, 21% of eighth graders in Wyoming performed at the proficient or advanced levels in math. That percentage rose to 32% in 2003 and then to 38% in 2013, a 19% increase in Grade 8 math student performance over the past decade.

Gains in reading performance were not as large as those in mathematics. In 1992, 33% of Wyoming fourth graders performed at or above the proficient level. That percentage increased to 34% in 2003 and to 37% in 2013. Similarly, the percent of Wyoming Grade 8 students achieving at proficient or advanced levels in reading was 29% in 1998 (the first year for which comparable data are available), and then improved to 34% in 2003 and to 38% in 2013.

There are not sufficient data to document long-term trends in student performance in either science or writing.

Table 2.1
Summary of NAEP Results for Wyoming: 1990-2013

Assessment			Average Scale Score						Achievement Level								
			State			National			At or Above Basic			At or Above Proficient			At Advanced		
Subject	Gr	Yr	Avg	(SE)		Avg	(SE)		%	(SE)		%	(SE)		%	(SE)	
Mathematics	**4**	**2013**	247	(0.4)	>	241	(0.2)		90	(0.7)	>	48	(0.9)	>	7	(0.5)	=
Mathematics	**4**	**2011**	244	(0.4)	>	240	(0.2)		88	(0.7)	>	44	(1.3)	>	5	(0.4)	=
Mathematics	**4**	**2009**	242	(0.6)	>	239	(0.2)		87	(0.9)	>	40	(1.2)	=	4	(0.5)	<
Mathematics	**4**	**2007**	244	(0.5)	>	239	(0.2)		88	(0.7)	>	44	(1.0)	>	5	(0.5)	=
Mathematics	**4**	**2005**	243	(0.6)	>	237	(0.2)		87	(0.9)	>	43	(1.4)	>	5	(0.7)	=
Mathematics	**4**	**2003**	241	(0.6)	>	234	(0.2)		87	(0.8)	>	39	(1.1)	>	4	(0.4)	=
Mathematics	**4**	**2000**	229	(1.1)	>	224	(1.0)		71	(2.0)	>	25	(1.4)	=	2	(0.4)	=
Mathematics	**4**	**2000[1]**	229	(1.3)	=	226	(1.0)		73	(2.0)	>	25	(1.5)	=	2	(0.5)	=
Mathematics	**4**	**1996[1]**	223	(1.4)	=	222	(1.0)		64	(1.7)	=	19	(1.2)	=	1	(0.3)	=
Mathematics	**4**	**1992[1]**	225	(0.9)	>	219	(0.8)		69	(1.4)	>	19	(1.1)	=	1	(0.3)	=
Mathematics	**8**	**2013**	288	(0.5)	>	284	(0.2)		81	(0.8)	>	38	(1.1)	>	7	(0.5)	<
Mathematics	**8**	**2011**	288	(0.6)	>	283	(0.2)		80	(1.0)	>	37	(1.2)	>	7	(0.7)	=
Mathematics	**8**	**2009**	286	(0.6)	>	282	(0.3)		78	(1.2)	>	35	(1.1)	=	7	(0.6)	=
Mathematics	**8**	**2007**	287	(0.7)	>	280	(0.3)		80	(1.1)	>	36	(1.6)	>	7	(0.7)	=
Mathematics	**8**	**2005**	282	(0.7)	>	278	(0.2)		76	(1.1)	>	29	(1.4)	=	3	(0.4)	<
Mathematics	**8**	**2003**	284	(0.7)	>	276	(0.3)		77	(1.0)	>	32	(1.0)	>	4	(0.5)	=
Mathematics	**8**	**2000**	276	(1.0)	>	272	(0.9)		69	(1.3)	>	23	(1.0)	=	3	(0.4)	=
Mathematics	**8**	**2000[1]**	277	(1.2)	=	274	(0.8)		70	(1.4)	>	25	(1.1)	=	4	(0.5)	=
Mathematics	**8**	**1996[1]**	275	(0.9)	>	271	(1.2)		68	(1.2)	>	22	(1.0)	=	2	(0.6)	=
Mathematics	**8**	**1992[1]**	275	(0.9)	>	267	(1.0)		67	(1.3)	>	21	(1.1)	=	2	(0.4)	=
Mathematics	**8**	**1990[1]**	272	(0.7)	>	262	(1.4)		64	(1.3)	>	19	(0.9)	>	2	(0.2)	=
Reading	**4**	**2013**	226	(0.6)	>	221	(0.3)		75	(1.0)	>	37	(0.9)	>	7	(0.5)	=
Reading	**4**	**2011**	224	(0.8)	>	220	(0.3)		71	(1.3)	>	34	(1.1)	=	7	(0.6)	=
Reading	**4**	**2009**	223	(0.7)	>	220	(0.3)		72	(1.1)	>	33	(1.0)	=	5	(0.6)	<
Reading	**4**	**2007**	225	(0.5)	>	220	(0.3)		73	(1.0)	>	36	(1.0)	>	8	(0.9)	=
Reading	**4**	**2005**	223	(0.7)	>	217	(0.2)		71	(1.2)	>	34	(1.4)	>	7	(0.6)	=
Reading	**4**	**2003**	222	(0.8)	>	216	(0.3)		69	(1.3)	>	34	(1.1)	>	7	(0.7)	=
Reading	**4**	**2002**	221	(1.0)	>	217	(0.5)		68	(1.4)	>	31	(1.3)	=	6	(0.5)	=
Reading	**4**	**1998**	218	(1.5)	>	213	(1.2)		64	(2.0)	>	29	(1.5)	=	6	(0.7)	=
Reading	**4**	**1998[1]**	219	(1.6)	=	215	(0.8)		65	(2.1)	=	30	(2.0)	=	6	(0.7)	=
Reading	**4**	**1994[1]**	221	(1.2)	>	212	(1.1)		68	(1.7)	>	32	(1.4)	=	6	(0.6)	=
Reading	**4**	**1992[1]**	223	(1.1)	>	215	(1.0)		71	(1.6)	>	33	(1.5)	>	5	(0.6)	=

Assessment Subject	Gr	Yr	Average Scale Score: State Avg	(SE)		National Avg	(SE)	Achievement Level: At or Above Basic %	(SE)		At or Above Proficient %	(SE)		At Advanced %	(SE)	
Reading	**8**	**2013**	271	(0.6)	>	266	(0.2)	84	(0.7)	>	38	(1.0)	>	2	(0.4)	<
Reading	**8**	**2011**	270	(1.0)	>	264	(0.2)	82	(1.0)	>	38	(1.6)	>	3	(0.5)	=
Reading	**8**	**2009**	268	(1.0)	>	262	(0.3)	82	(1.4)	>	34	(1.8)	=	2	(0.5)	=
Reading	**8**	**2007**	266	(0.7)	>	261	(0.2)	80	(1.1)	>	33	(1.0)	>	2	(0.5)	=
Reading	**8**	**2005**	268	(0.7)	>	260	(0.2)	81	(1.0)	>	36	(1.4)	>	2	(0.4)	=
Reading	**8**	**2003**	267	(0.5)	>	261	(0.2)	79	(0.9)	>	34	(1.1)	>	2	(0.2)	=
Reading	**8**	**2002**	265	(0.7)	>	263	(0.5)	78	(1.3)	>	31	(1.1)	=	2	(0.3)	=
Reading	**8**	**1998**	263	(1.3)	=	261	(0.8)	76	(1.8)	>	31	(1.5)	=	2	(0.5)	=
Reading	**8**	**1998**[1]	262	(1.3)	=	261	(0.8)	76	(1.4)	>	29	(1.5)	=	2	(0.4)	=
Science	**4**	**2009**	156	(0.7)	>	149	(0.3)	80	(1.0)	>	37	(1.2)	>	#	(†)	=
Science	**8**	**2011**	160	(0.5)	>	151	(0.2)	78	(0.9)	>	38	(1.1)	>	1	(0.4)	=
Science	**8**	**2009**	158	(0.7)	>	149	(0.3)	74	(1.2)	>	36	(1.3)	>	1	(0.3)	=
Writing	**4**	**2002**	150	(1.1)	=	153	(0.5)	85	(0.9)	=	23	(1.4)	<	1	(0.2)	<
Writing	**8**	**2007**	158	(1.0)	>	154	(0.3)	91	(0.9)	>	34	(1.5)	>	1	(0.3)	=
Writing	**8**	**2002**	151	(0.9)	=	152	(0.6)	86	(1.0)	=	28	(1.2)	=	1	(0.3)	<
Writing	**8**	**1998**	146	(1.4)	=	148	(0.6)	81	(1.5)	=	23	(1.7)	=	1	(0.4)	=

[1]Accommodations were not permitted for this assessment.
Rounds to zero.
† Not applicable.
Note: Standard Errors (SE) are shown in parentheses.

> Higher than National public
= Not significantly different from National public
< Lower than National public

Source: National Center for Education Statistics (NCES), National Assessment of Educational Progress (NAEP), generated using the State Profiles. http://nces.ed.gov/nationsreportcard/states/

The NAEP achievement data show that student performance in Wyoming has improved during the time frame in which school finance adequacy has been a major policy issue in the state. In nearly all cases Wyoming student achievement equals or exceeds the national average. On the other hand, funding has grown at a substantially higher rate than has student performance, and in no case do at least 50% of Wyoming students achieve at proficient or advanced levels, performance levels that are critical for student opportunity in the knowledge-based global economy.

Wyoming's taxpayers, parents, legislators, educators and students will need to determine the degree to which student performance needs to improve. We would argue that the funds the state has provided to its schools through the EB-based Wyoming School Funding Model provides resources that could be used to boost student achievement to higher levels than have been obtained to date.

CHAPTER 3
USING THE EVIDENCE-BASED MODEL TO CONDUCT A DESK AUDIT OF THE WYOMING FUNDING MODEL

This chapter uses the Evidence-Based (EB) model to conduct a desk audit of the Wyoming Funding Model. The four parts of this chapter include the following:

1. Staffing for core programs, which include full-day kindergarten, core teachers, elective/specialist teachers, instructional facilitators/coaches, core tutors, core guidance counselors, core nurses (the latter three constituting changes and additions to the EB model), substitute teachers, supervisory aides, librarians, principals/assistant principals and school secretaries.

2. Dollar per student resources, gifted and talented, professional development, computers and other technology, instructional materials and supplies, and extra duty/student activities.

3. Central functions, which include maintenance and operations, central office, and transportation.

4. Resources for struggling students including tutors, pupil support, extended day, summer school, ELL programs, alternative schools and special education.

In each section, we provide an analysis of the current Wyoming model parameters, followed by an analysis of those parameters in the context of current research and the current implementation of the EB model. This is followed by an analysis of resource use by Wyoming school districts.

Table 3.1 below provides a summary of all the desk audit recommendations suggested by the EB model.

Table 3.1
Summary of Desk Audit Recommendations

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
STAFFING FOR CORE PROGRAMS				
1. Full Day Kindergarten	Full day kindergarten program. Each K student counts as 1.0 pupil in the funding system.	Requires districts to provide a full day kindergarten program for children who turn age 5 before September 15. (At least one school in each district must have a full-day kindergarten program). Fully funded for attending students.	$0	No change from 2010 recommendation. No need for a formal recalibration.
2. Elementary Core Teachers/Class Size	Grades K-3: 15 Grades 4-5 (and 6 if included in an elementary school): 25	K-5: 16, Class size of 16 also applies to grade 6 when included in an elementary school	$23,048,806	No change from 2010 recommendation. Recalibrate
3. Secondary Core Teachers/Class Size	Grades 6-12: 25	Grades 6-12: 21	$28,980,771	No change from 2010 recommendation. Recalibrate
4. Elective/Specialist Teachers	20% of core elementary teachers	20% of core elementary teachers	$0	No change from 2010 recommendation. No need for a formal recalibration.

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	20% of core middle school teachers	33 1/3 % of core middle school teachers.	$8,151,402	No change from 2010 recommendation. Recalibrate
	33 1/3 % of core high school teachers	33 1/3 % of core high school teachers.	$0	No change from 2010 recommendation. No need for a formal recalibration.
5. Additional Vocational/Career Technical Teachers	No additional vocational education teachers resourced.	Apply an additional weighting factor of 29 percent to vocational education student FTEs. Based upon weighted student count, provide an additional teacher for every 21 students.	$2,057,916	No change from 2010 recommendation. Recalibrate
6. Minimum Teachers	A minimum of 3.65 teachers provided for elementary schools, a minimum of 7 teachers for middle schools and high schools with ADM greater than 49. Resourced at the highest grade band level. For schools 49 & below, minimum teacher resources are provided on a prorated basis at 1	A minimum of 6 teachers provided for elementary school grade bands with ADM greater than 49. A minimum of 8 teachers provided for middle school grade bands with ADM greater than 49. A minimum of 10 teachers provided for high school grade bands with ADM	$14,337,242	No change from 2010 recommendation. Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	teacher for every 7 students.	greater than 49. For school grade bands of 49 & below, minimum teacher resources are provided on a prorated basis at 1 teacher for every 7 students.		
7. Instructional Facilitators/Coaches	1.5 instructional facilitator/coaches for prototypical elementary (288 ADM) and secondary (315 ADM) schools.	Funded outside block grant in a categorical grant equal to 60 percent of consultant recommendation.	-$13,760,799	No change from 2010 recommendation. Recalibrate
8. Core Tutors/Tier 2 Intervention	Tutor positions provided on basis of at-risk student count, with a minimum of 1.0 for each school prototype.	Tutor positions provided on basis of at-risk student count, with a minimum of 1.0 for each school prototype.	$0	One tutor position in each prototypical school* Recalibrate This is a new EB (cost-based) recommendation. *Additional tutors are enabled through the at-risk pupil count in Element 26.
9. Substitute Teachers	5 % of core and elective teachers, instructional coaches, tutors (and	5 % of core and elective teachers, instructional coaches,	$0	No change from 2010 recommendation.

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	teacher positions in extended day, summer school and ELL).	tutors (and teacher positions in extended day, summer school and ELL).		No need for a formal recalibration.
10. Core Guidance Counselors and Nurses	1 guidance counselor position for every 250 middle and high school students.	1 guidance counselor position for every 250 middle and high school students	$0	1 guidance counselor for every 288 grade K-5 students 1 guidance counselor for every 250 grade 6-12 students* 1 nurse for every 750 K-12 students Recalibrate This is a new EB recommendation.
11. Supervisory and Instructional Aides	Provide funding at an amount equal to 2.0 FTE positions for 288 ADM prototypical elementary school; 2.0 FTE for 315 ADM prototypical middle school; 5.0 FTE for 630 ADM prototypical high school; resourced at the highest-grade prototype using total school ADM.	Provide funding at an amount equal to 2.0 FTE positions for 288 ADM prototypical elementary school; 2.0 FTE for 315 ADM prototypical middle school; 5.0 FTE for 630 ADM prototypical high school; resourced at the highest-grade prototype using total school ADM.	$0	2 for prototypical elementary school 2.0 for prototypical middle school of 315 3 for prototypical high school of 630 Resourced at the highest-grade prototype using total school ADM. Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
12. Librarians and Librarian Media Technicians	Fund at the district level rather than school level. For districts with 0-300 ADM, provide funding for 1 librarian and 1 library clerk. For districts with 301-630 ADM, prorate from the 300 ADM level up to 2 librarians, but retain the 1 librarian clerk for the 630 ADM. Above 630 ADM, 1 librarian for every 288 elementary ADM and 1 librarian and 2 library clerks for every 630 secondary ADM, with a minimum of 2 librarians and 1 library clerk. No library media technicians funded, but rather a separate computer technician position in central office.	For non-alternative schools and small schools, provide 1 librarian for the prototypical elementary schools (288 ADM) prorate up and down, below and above 288 ADM. For middle or high schools with ADM between 105 and 630 ADM, 1 librarian. Below 105 prorate down and above 630 prorate. For non-alternative schools and small schools, provide 1 library media technician for every 315 middle and high school ADM, prorated up and down.	$3,474,482 $3,034,238 Total Cost Difference $6,508,720	Fund at the district level, 1 librarian for every 315 K-8 students and 1 librarian for every 630 9-12 students No library media technicians funded under this area – see computer technician section – Element 23 Recalibrate This is a new EB recommendation.
13. Principals and Assistant Principals	1.0 principal for all schools down to 96 ADM for elementary schools and 105 ADM	1.0 principal for all schools down to 96 ADM for elementary schools and 105 ADM		No change from 2010 recommendation. No need for a formal

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	for middle and high schools, prorated by ADM below these ADM levels. 1.0 assistant principal for every 288 elementary ADM beginning at 289 ADM; 1.0 assistant principal for every 315 middle and high school ADM beginning at 316 ADM.	for middle and high schools, prorated by ADM below these ADM levels. 1.0 assistant principal for every 288 elementary ADM beginning at 289 ADM;1.0 assistant principal for every 315 middle and high school ADM beginning at 316 ADM.	$0	recalibration.
14. School Site Secretarial Staff	Provide 1.0 secretary for all schools down to 96 ADM for elementary and 105 ADM for middle and high schools, prorated by ADM below these ADM levels. Provide 1.0 secretary for 105 to 315 middle school ADM, prorated down below 105 ADM and prorated up for 316 ADM and above.	Provide 1.0 secretary for all schools down to 96 ADM for elementary and 105 ADM for middle and high schools, prorated by ADM below these ADM levels. Provide 1.0 secretary for 105 to 315 middle school ADM, prorated down below 105 ADM and prorated up for 316 ADM and above.	$0	Simplify the formula to provide just secretary staff. Provide 2.0 secretary positions for all elementary and middle schools down to 96 ADM for elementary and 105 ADM for middle schools. This is prorated by ADM below these levels, and prorated up at rate of 1 for every 144 elementary 1 for every

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	Provide 1.0 FTE secretary for 105 to 630 high school ADM, prorated down below 105 ADM and prorated up for 631 ADM and above. Resourced at the highest-grade prototype using total school ADM. Provide1.0 clerical for 288 ADM prototypical elementary school. Provide 1.0 clerical for ADM prototypical middle school. Provide 2.0 clerical for 315 ADM prototypical high school (total of 4.0 secretaries for 630 students). All FTE positions prorated up or down from prototypical level and resourced at the	Provide 1.0 FTE secretary for 105 to 630 high school ADM, prorated down below 105 ADM and prorated up for 631 ADM and above. Resourced at the highest-grade prototype using total school ADM. Provide1.0 clerical for 288 ADM prototypical elementary school. Provide 1.0 clerical for ADM prototypical middle school. Provide 2.0 clerical for 315 ADM prototypical high school (total of 4.0 secretaries for 630 students). All FTE positions prorated up or down from prototypical level		and 157.5 middle school students. Provide 3.0 secretary positions for all high schools reduced to two for 315 ADM, prorated by ADM below 315 ADM, and prorated up above 630 at rate of 1 for every 200 high school ADM. All FTE positions prorated up or down from prototypical level and resourced at the highest-grade prototype using total school ADM. Recalibrate This is a new EB recommendation.

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	highest-grade prototype using total school ADM.	and resourced at the highest-grade prototype using total school ADM.		
DOLLARS PER STUDENT RESOURCES				
15. Gifted and Talented Students	$25 per ADM in 2010 inflated annually	Provide an amount equal to$29.41 per ADM	Modest difference	Precise the dollar figure during 2015 recalibration.
16. Intensive Professional Development	10 days of student free time for training $100 per ADM for trainers inflated annually, to $124.46	10 days of student free time for training $100 per ADM for trainers inflated to $117.64.	Very minor difference part of LSO estimate that combines a number of areas	Precise the dollar figure during 2015 recalibration.
17. Instructional Materials	Instructional materials: $149.23 per ADM for elementary and middle schools and $186.54 per ADM for high schools.	$335.93 per ADM for elementary and middle schools and $411.33 per ADM for high schools.	$18,104,526	Recalibrate
18. Short Cycle/Formative Assessments	$37.70 per ADM and not subject to an ECA.	$37.70 per ADM and not subject to an ECA.	$0	Precise the dollar figure during 2015 recalibration.
19. Technology and Equipment	$250 per pupil inflated annually to $266.49.	Provide an amount equal to $294 per ADM.	$3,281,514	Recalibrate
20. Career and Technical Education Equipment/Materials	$9,622.70 per vocational education teacher FTE. $1,854.45 for equipment allowance; $6,841.74 for supply allowance,	Inflated amounts of $9,094.97 per vocational education teacher FTE. $1,752.75 for equipment allowance;	Marginal difference in equipment costs Wyoming also provides an extra weight of 0.29 for	Precise the dollar figure during 2015 recalibration.

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	and $926.51 for equipment replacement.	$6,466.52 for supply allowance, and $875.70 for equipment replacement.	all students in career technical programs to lower those class sizes (see Element 5 above).	
21. Extra Duty Funds/Student Activities	$308.04 per ADM.	Funded at grade-band level, by school. For grades K-5, provide an amount equal to $24.23 per student. For grades 6-12, use inverse sliding scales based on student enrollment for middle (grades 6-8) and high (grades 9-12) school grades levels. Middle school funding levels range from $796.95 for 1 ADM and $205.90 per ADM for a school of 1,260 ADM. High school funding levels range from $2,054.39 for 1 ADM and $605.59 per ADM for a school of 1,260 ADM. Alternative schools	$5,535,663	Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
		receive an amount equal to $291.15 per ADM.		
CENTRAL OFFICE FUNCTIONS				
22. Operations and Maintenance	Separate computations for custodians, maintenance workers and groundskeepers as outlined in the analysis and evidence section below.	Separate computations for custodians, maintenance workers and groundskeepers as outlined in the analysis and evidence section below.	$0	Recalibrate
23. Central Office Staffing/Non-Personnel Resources	Less than 500 ADM – 3 administrative and 3 classified position Between 501 and 1,000 ADM – 4 administrative and 4 classified positions Beyond 1,000 ADM, provide 1 additional administrator position for every 833 ADM and provide 1 additional classified position for every 500 ADM.	Less than 500 ADM – 3 administrative and 3 classified position Between 501 and 1,000 ADM – 4 administrative and 4 classified positions Beyond 1,000 ADM, provide 1 additional administrator position for every 625 ADM and provide 1 additional classified position for every 417 ADM.	$3,834,851	A per pupil amount calculated from a 3,900-student prototypical school district. This is prorated to districts with 1,000 students. From 1000 to 400 students funding should remain at the level of funding for the central office of a 1,000 student district. This would generate approximately 2 administrative and 2.5 secretarial positions. From 400 to 200 students, the positions should be prorated down to1 professional

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
				and 1 secretarial position, and remain at that level for smaller districts. Recalibrate
	Provide an amount equal to$373.38 per ADM for non-personnel resources.	Provide an amount equal to$352.91 per ADM for non-personnel resources.	Small difference combined with other estimates in LSO analysis.	Precise dollar figures during 2015 recalibration.
24. Transportation	Recommend no changes to current policy of 100% of approved (to and from school and approved activities) transportation costs.			
25. Food Services	Both the EB model and the Wyoming Legislature assume this is a self-supporting function and thus no additional resources are provided.			
26. Tutors	1 tutor position for every 100 at-risk students, with a minimum of one tutor position in each prototypical school.	1 tutor position for every 100 at-risk students, with a minimum of one tutor position in each prototypical school.	$0	One tutor position for every 125 at risk students (in addition to the one tutor position in each prototypical school). These positions are provided additional days for professional development (Element 16) and substitute days (Element 9) discussed above. Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
				This is a revised EB recommendation.
27. Pupil Support	1 pupil support position for every 100 at-risk students, with a minimum of 1 position for each prototypical elementary, middle and high school, resourced at the highest-grade prototype using the total school ADM.	1 pupil support position for every 100 at-risk students, with a minimum of 1 position for each prototypical elementary, middle and high school, resourced at the highest-grade prototype using the total school ADM.	$0	One pupil support position for every 125 at-risk students These positions are provided additional days for professional development (Element 16) discussed above. Recalibrate This is a revised EB recommendation
28. Extended Day Programs	1.0 teacher position for every 30 at-risk students or 3.33 FTE per 100 such students. Position paid at the rate of 25 percent of annual salary—enough to pay a teacher for a 2-hour extended-day program, 5 days per week. This formula equates to 1 teacher position for every 120 at-risk students.	For both extended day and summer, funding provided outside of block grant and in form of a categorical grant at an amount equal to a 0.15 teacher FTE for every 30 at-risk students for both summer school and extended day programs. A minimum 0.50 FTE is provided for school districts that do not generate that amount	-$8,979,455 including both extended day and summer school.	No change from 2010 recommendation. Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
		based upon the district's at-risk count.		
29. Summer School	1.0 teacher position for every 30 at-risk students or 3.33 FTE per 100 such students. Position paid at the rate of 25 percent of annual salary—enough to pay a teacher for a six to eight week 4 hour per day summer school program and include adequate time for planning and grading This formula equates to 1 teacher position for every 120 at-risk students.	For both extended day and summer, funding provided outside of block grant and in form of a categorical grant at an amount equal to a 0.15 teacher FTE for every 30 at-risk students for both summer school and extended day programs. A minimum 0.50 FTE provided for school districts that do not generate that amount based upon the district's at-risk count.	-$8,979,455 included both extended day and summer school.	No change from 2010 recommendation. Recalibrate
30. English Language Learner (ELL) Students	1.0 teacher position for every 100 identified ELL students.	1.0 teacher position for every 100 identified ELL students.	$0	No change from 2010 recommendation. No need for a formal recalibration.
31. Alternative Schools	No separate formula; assumes all alternative schools have 49 or fewer students and thus qualify for the small	Provide funding for all staff at a ratio of 1 assistant principal and 1 teacher position for every 7 students.	-$88,082	No change from 2010 recommendation. Recalibrate

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	school formula of 1 AP plus 1 teacher position for every 7 students.			
32. Special Education		100% cost reimbursement		1 teacher for every 150 students in the school 1 aide for every 150 students in the school Federal funds Full state funding for students with severe disabilities To explore this option as part of the 2015 recalibration, WY would need to create a great deal of new data; specifically it would need to separate severe and profound special education expenditures from all others.
33. Salary Levels	All Three areas require further study as part of Recalibration. See report for details.			
34. Health Insurance				
35. Benefits				
36. Regional Cost Adjustments	Adjust model salaries for regional differences by using the 2011 hedonic wage index as	Adjust model salaries for regional differences by using the greater of the	$6,560,511	Recalibrate.

Model Element	2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
	calculated by state consultants (Taylor).	Wyoming Cost of Living Index (average of the past 6 semiannual calculations) or the 2005 hedonic wage index as calculated by state consultants (Baker via LOP & Associates), with a minimum index value of 1.00.		
37. External Cost Adjustments	Continue to use four existing indices and apply them annually to the cost-based model as well as continue a monitoring approach for applying ECAs to the Legislature's funded model.			
38. School District School Finance Audit Process	Continue audit process and establish clear rules for accuracy of district data reporting.			

HOW THE INFORMATION BELOW IS ORGANIZED

In the material that follows we provide the following comparison data for each component of the Wyoming Funding Model:

- The cost model, which is the EB recommendations from the 2010 recalibration
- The Legislature's funding model, which represents current Wyoming policy and describes the current operation of the Wyoming Funding Model
- An estimate of the cost differences between the cost model and the Legislature's funding model, and
- Our current EB model recommendations including our recommendation as to whether or not we recommend recalibration of that funding model element.

This information is provided in table form to facilitate review of each element. Following each table, we provide analysis and evidence supporting the EB models recommendations. Finally we provide an assessment of how districts in Wyoming have used the resources provided by the Wyoming funding Model for that particular component.

Three Tier Approach

Before proceeding, we note that the design of the EB model, reflects the ***Response to Intervention (RTI)*** model. RTI is a three-tier approach to meeting student needs. Tier 1 refers to core instruction for all students. The EB model seeks to make core instruction as effective as possible both with its modest class sizes, provisions for collaborative time, and robust professional development resources. Effective core instruction is the foundation on which all other educational strategies depend. Tier 2 services are provided to students struggling to achieve to standards before being given an IEP and labeled as a student with a disability. The EB model's current Tier 2 resources include one core tutor for every prototypical school and additional resources triggered by at-risk student counts that provide funding for tutoring, extended day, summer school and additional pupil support. Tier 3 includes all special education services.

Student Counts

In addition, student counts used for the formula – ADM – and at-risk students need to be defined. Average Daily Members (ADM) is defined as the greater of the prior year or the three-year average for each school. At-risk students are defined as the unduplicated count of English language learners, free and reduced lunch eligible students in grades K-12, and mobile students in grades 6-12.

Prototypical Schools

A key component of the EB model is the use of prototypical schools to generate initial resource allocation strategies followed by prorating resources to actual schools and/or districts. In the

Wyoming Funding Model, prototypical school sizes are used as the basis for estimating resource needs and for pro-rating resource generation and thus costs based on the actual enrollment in a school.

In other states we have recommended prototypical schools sizes of 432 or 450 for elementary schools, 450 for middle schools and 600 for high schools. This generally derives from EB model class size recommendations, which differ from the class sizes used in the Legislature's funding model (see model components 3 and 4 below), and from larger average school sizes generally found in other states.

In Wyoming the current school size prototypes used in the model are:

- Elementary Schools: 288 students
- Middle Schools: 315 students
- High Schools: 630 students

These prototypes were developed in 2005 following a Legislative decision to establish core class sizes of 16 at the elementary level and 21 at the secondary level. With average class sizes of 16, the 288-student prototypical elementary school has 48 students at each grade level (K-5) resulting in what is typically called a three-section school – three classrooms of 16 students at each grade level. The prototypical middle school (315 students) has 105 students at each grade level (5 classes of 21 at each grade level). A prototypical high school has 630 students or is twice the size of the prototypical middle school

Because Wyoming has many small schools, these prototypical school sizes make it straightforward to recognize smaller prototype schools. These are generally proportional to the prototypes. For example, at the elementary level, 288 students represent a three-section school, a 192-student elementary school would be a two-section school (2/3 the number of students as in the prototypical elementary school) and a 96-student elementary school would be a one-section school with 1/3 the number of students of the prototypical elementary school.

STAFFING FOR CORE PROGRAMS

This section covers full-day kindergarten, core teachers, elective/specialist teachers, instructional facilitators/coaches, core tutors, core guidance counselors, core nurses (the latter three constituting changes and additions to the EB model), substitute teachers, supervisory aides, librarians, principals/assistant principals and school secretaries.

1. Full Day Kindergarten

The table below shows that both the EB model and the current Wyoming School Funding Model call for full day kindergarten. Details on the resources kindergarten students generate are included in the sections that follow below.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
Full day kindergarten program. Each K student counts as 1.0 pupil in the funding system.	Requires districts to provide a full day kindergarten program for children who turn age 5 before September 15. (At least one school in each district must have a full-day kindergarten program). Fully funded for attending students. Same as consultant recommendation.	$0	No change from 2010 recommendation. No need for a formal recalibration.

*The source for all cost differences reported in this chapter is *"K-12 Education Resource Block Grant Funding Model: Model Component Variances between Wyoming Legislature (Law) and Consultant (Cost-Based) Recommendations School Year 2014-2015," prepared by the LSO.*

Analysis and Evidence

Research shows that full-day kindergarten, particularly for students from low-income backgrounds, has significant, positive effects on student learning in the early elementary grades (Gullo, 2000; Slavin, Karweit & Wasik, 1994). Fusaro's (1997) late 1990s meta-analysis of 23 studies comparing the achievement effect of full-day kindergarten to half-day kindergarten programs, found an average effect size of +0.77, which is substantial.[1] Children participating in full-day kindergarten programs do better in learning the basic skills of reading, writing, and mathematics in the primary grades than children who receive only a half-day program or no kindergarten at all (see also Lee, Burkam, Ready, Honigman & Meisels, 2006).

In 2003, using nationally-representative, longitudinal data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS–K), Denton, West & Walston (2003) showed that children who attended full-day kindergarten had a greater ability to demonstrate reading knowledge and skill than their peers in half-day programs, across the range of family backgrounds. Cooper, et al.'s (2010) comprehensive meta-analysis reached similar conclusions finding the average effect size of students in full day versus half-day kindergarten to be +0.25. Moreover, a *randomized controlled trial*, the "gold standard" of education research, found the effect of full-day versus half-day kindergarten to be about +0.75 standard deviations (Elicker & Mathur, 1997). As a result of this research, funding full day kindergarten for 5 year-olds as well

[1] Effect size is the amount of a standard deviation in higher performance that the program produces for students who participate in the program versus students who do not. An effect size of 1.0 indicates that the average student's performance would move from the 50th to the 83rd percentile. The research field generally recognizes effect sizes greater than 0.25 as significant and greater than 0.50 as substantial.

as for 4 year-olds is an increasingly common practice among the states (Kauerz, 2005). Since research suggests that children from all backgrounds can benefit from full-day kindergarten programs, the EB model supports a full day program for all students, by counting such students as 1.0 in the state aid formula.

2. Elementary Core Teachers/Class Size

Core teachers are defined as the grade-level classroom teachers in elementary schools. In middle and high schools core teachers are those who teach core subjects such as mathematics, science, language arts, social studies and world language. Advanced Placement classes in these subjects are considered core classes.

In the analysis that follows, we provide analyses of the number of teachers employed by school districts in Wyoming with the number of teachers generated through the Wyoming Funding Model. There are several factors to consider in the analysis that follows.

- The data we present come from the *Continuing Review of Educational Resources in Wyoming* (CRERW) report prepared annually by the WDE.

- The data on numbers of teachers compared to the Wyoming Funding Model does not distinguish between core and specialist teachers; consequently some comparisons below are presented in the discussion of core teachers and others following the discussion of specialist or elective teachers.

- Many of Wyoming's schools contain grade spans that are not easily categorized at elementary, middle or high school (e.g. k-12 schools, alternative schools, etc.). The WDE reports data for these schools as well as more traditionally organized schools. Tables presented here rely on traditionally organized schools, but tables that include the same data for all schools (as well as summarize district-by-district findings when appropriate) are provided following the discussion of specialist/elective teachers.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
Grades K-3: 15 Grades 4-5 (and 6 if included in an elementary school): 25	K-5: 16, Class size of 16 also applies to grade 6 when included in an elementary school	$23,048,806	No change from 2010 recommendation. Recalibrate

**Because specialist teachers are generated as a percentage of the number of core teachers, the cost difference presented in this table includes the difference between consultant recommendations and current practice for both core AND specialist teachers.*

Analysis and Evidence

The gold standard of educational research is randomized controlled trials, which provide scientific evidence on the impact of a certain treatment (Mosteller, 1995). Thus, the primary evidence on the impact of small classes today is the Tennessee STAR study, which was a large scale, *randomized controlled experiment* of class sizes of approximately 15 compared to a control group of classes with approximately 24 students in kindergarten through grade 3 (Finn and Achilles, 1999; Word, et al., 1990). The study found that students in the small classes achieved at a significantly higher level (effect size of about 0.25 standard deviations) than those in regular class sizes, and that the impacts were even larger (effect size of about 0.50) for low income and minority students (Finn, 2002; Grissmer, 1999; Krueger, 2002). The same research also showed that a regular class of 24-25 with a teacher and an instructional aide *did not* produce a discernible positive impact on student achievement, a finding that undercuts proposals and wide spread practices that place instructional aides in elementary classrooms (Gerber, Finn, Achilles, & Boyd-Zaharias, 2001).

Subsequent research showed the positive impacts of the small classes in the Tennessee study persisted into middle and high school years, and the years beyond high school (Finn, Gerger, Achilles & J.B. Zaharias, 2001; Konstantopulos & Chung, 2009; Krueger, 2002; Mishel & Rothstein, 2002; Nye, Hedges & Konstantopulos, 2001a, 2001b). Longitudinal research on class size reduction also found that the lasting benefits of small classes include a reduction in the achievement gap in reading and mathematics in later grades (Krueger & Whitmore, 2001).

Although some argue that the impact of the small class sizes is derived primarily from kindergarten and grade 1, Konstantopoulos and Chung (2009) found that the longer students were in small classes (i.e., in grades K, 1, 2 and 3) the greater the impact on grade 4-8 achievement. They concluded that the full treatment – small classes in all of the first four grades – had the greatest short and long term impacts.

Though differences in analytic methods and conclusions characterize some of the debate over class size (see Hanushek, 2002 and Krueger, 2002), we side with those concluding that class size makes a difference, but only class sizes of approximately 15 students with one teacher (and not class sizes of 30 with an aide or two teachers) and only for kindergarten through grade 3.

Finally in these times when funds for schools are scarce, it is legitimate to raise the issue of the cost of small classes versus the benefits. Whitehurst and Chingos (2011) argue that though the Tennessee STAR study supports the efficacy of small classes, there is other research today that produced more ambiguous conclusions. However, they also note that the other research includes class size reductions in grades above K-3 and "natural experiments" rather than randomized controlled trials. Most importantly, they also conclude that while the costs of small classes are high, the benefits, particularly the long-term benefits, outweigh the costs and conclude that small class sizes in grades K-3 "pay their way."

We consistently recommend that states fund all other elements of the EB model before putting funds into the class size recommendations displayed above. We have made this recommendation because research shows many other components of the EB model are more cost effective in terms of improving student performance – particularly for improving the performance of struggling students.

Resource Use Analysis

The cost-based model for grades K-5, when applied to a three section, 288 student prototypical Wyoming school would generate 16.64 teachers with an average pupil core-teacher ratio of 17.3 students per teacher, compared to 18 teachers at a pupil core-teacher ratio of 16 in Legislature's funding model. [2] Thus the number of core teachers in a prototypical elementary school in Wyoming exceeds the EB model recommendation. The pupil teacher ratio of 16 was used in the Wyoming funding model because it was the same as had been used by earlier studies conducted by MAP.

There is however, a significant difference in the MAP models and the EB based (current) Wyoming funding model. It is our understanding that the MAP pupil teacher ratio of 16 did not distinguish between core teachers and elective teachers – as does both the Legislature's funding model and the cost-based model. Thus, under MAP, it was assumed that a pupil teacher ratio of 16 provided both core AND elective teachers, providing a total number of 18 teachers for the 288 prototypical elementary school.

Under the cost-based model, core teachers are generated at the rate of one for every 15 students in grade K-3, and one for every 25 students in grades 4 and 5. So at 48 students per grade, the number of students in grades K-3 is 192 (48 times 4). This produces 12.8 teacher positions (192/15). The number of students in grades 4-5 is 96 (48 times 2); this produces 3.84 teacher positions (96/25). Thus the Cost-based model provides for 16.64 teacher positions versus the MAP model of 18. But the Cost-based model also provides for elective teachers for elementary schools generated at a rate of 20 percent of the number of core teachers. Thus, the Cost-based model provides for an additional 3.3 teachers, or a total of 20 elementary teacher positions, a number than is greater than the MAP model of 18. Further, under the Legislature's funding model, a prototypical elementary school is provided an even larger number of teachers – 21.6 – (18 core teachers and 20 percent or 3.6 more specialist teachers) compared to the 18 the old MAP model generated. In short, both the Cost-based model and the Legislature's funding model provide more elementary core and elective teacher positions than the previous MAP model.

If it is assumed that the old MAP figure of 16 was a "teacher staffing ratio" including core and elective teachers, and not a class size recommendation, and further assumed that each teacher provides instruction for five of six instructional hours of the regular school day, then the MAP pupil teacher ratio of 16 would actually lead to a core class size of about 19 (allowing for elective teachers to provide the sixth hour of instruction), a number that is higher than the cost-based model average of 17.3. Nevertheless, during the 2005 recalibration, the pupil teacher ratio of 16 was deemed to signify elementary class size and was enacted into the Legislature's funding model leading to the total of 21.6 teachers resourced for a 288-student prototypical elementary school.

[2] This is computed as follows: A 288 student K-5 three section school has 48 students per grade. Dividing 48 students by a pupil teacher ratio of 15 generates 3.2 teaching positions for grades K-3 and dividing 48 by 25 generates 1.92 teachers in grades 4 and 5 for a total of 16.64 teachers compared to 18 teachers in the prototypical Wyoming elementary school.

The table below shows how the number of teachers (core and specialist) actually hired in Wyoming elementary schools in 2012-13 compared to the number of teachers generated for those schools in the Legislature's funded model. An analysis of all schools in Wyoming follows the analysis of middle and high schools in the next section below.

The table shows that Elementary schools in Wyoming employ 501.4 fewer core and specialist teachers than are funded through the funding model. As a result, it is likely that average class sizes in elementary schools exceed the model goal of 16. The WDE points out in its analysis that the difference between the model and district employed teachers shrunk by 65 teachers from 2011-12 to 2012-13, suggesting that the Legislature's mandate that elementary class size be limited to 16 has had an impact on resource allocation at elementary schools.

Comparison of Number of Teachers (Core and Specialist) in Wyoming Elementary Schools Compared to Number of Teachers (Core and Specialist) Funded through the Wyoming Funding Model: 2012-2013

Elementary School Size Category	Number of Schools	Average ADM Per School	Difference in Number of Teachers From Wyoming Funding Model
Small (<= 49 ADM)	35	17	(33.5)
Mid-size (>49 and <=96 ADM)	9	70	3.0
Large (> 96 ADM)	149	297	(471.0)
All Elementary Schools	193	236	(501.4)

Source: *Continued Review of Educational Resources in Wyoming 2005-06 Through 2012-13.* Wyoming Department of Education, October 2013. Hereinafter referred to as CRERW.

3. Secondary Core Teachers/Class Size

In middle and high schools, core teachers are those who teach core subjects such as mathematics, science, language arts, social studies and world language. Advanced Placement classes in these subjects are considered core classes.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference*	Current EB Recommendation
Grades 6-12: 25	Grades 6-12: 21	$28,980,771	No change from 2010 recommendation. Recalibrate

**Because specialist teachers are generated as a percentage of the number of core teachers, the cost difference presented in this table includes the difference between consultant recommendations and current practice for both core AND specialist teachers.*

Analysis and Evidence

There is less research evidence on the most effective class sizes in grades 4-12 than there is on effective class size in grades K-3. As a result, in developing the EB model, we seek evidence on the most appropriate secondary class size from typical and best practices to identify the most appropriate class size for these grades. The national average class size in middle and high schools is roughly 25, and nearly all comprehensive school reform models were developed on the basis of a class size of 25 (Odden, 1997a; Stringfield, Ross & Smith, 1996) a conclusion on class size reached by the dozens of experts who created these whole-school design models. Although many professional judgment panels in many states have recommended secondary class sizes of 20, none cited research or best practices to support that proposal.

Citing more recent studies, Whitehurst and Chingos (2011) argue that there might be a modest linear relationship in improving student performance when class size drops from between 25 and 30 students to 15, but our view of the evidence and impact is that the gains identified are modest at best, and insufficient to alter the EB class size formulas.

Resource Use Analysis

The cost-based model middle and high school class size of 25 is larger than the Legislature's funding model class size of 21. As described above, our understanding is that the use of class sizes of 21 in these grades came from the original adequacy study conducted by MAP and that it was intended as a "staffing ratio" for secondary schools. That is the ratio of 21 students per teacher was intended to include all teaching staff and did not distinguish between core teachers and elective teachers. If one assumes that 21 is a "staffing ratio" and includes core and elective teachers, and if one further assumes that each teacher provides instruction for five of six instructional hours of the regular school day, then the staffing ratio of 21 translates to a core class size of about 25.2, essentially equal to the EB ratio of 25. But the EB model and the Wyoming cost-based model add 20 percent more teachers to this core staffing for middle schools and 33.33 percent more teachers for high schools. As a result, both the generic EB model and the cost-based model provide more teacher resources than the MAP model. Further, during the 2005 recalibration, the class size of 21 was deemed to signify secondary class size and was enacted into the Legislature's funded model, which was further enhanced by elective teachers. So both the cost-based model and the Legislature's funded model provide more teacher resources for secondary schools than did the MAP model.

The table below displays the difference in the number of teachers generated by the Legislature's funding model and the number of teachers actually employed by school districts in middle and high schools. Data are presented for all middle and all high schools as well as by school size categories. It is interesting to note that at the middle school level, regardless of the size of the school, districts employ fewer teachers than the model allocates to middle schools. On the other hand, except for the eight mid-sized high schools, districts employ more high school teachers than the model generates. Specifically across all middle schools in Wyoming there are 26.1 fewer teachers than the model funds and at high schools, there are 13.4 more teachers than the

model funds. These numbers are relatively small compared to the total of 501.4 fewer teachers employed at the elementary level.

Comparison of Number of Teachers (Core and Specialist) in Wyoming Secondary (middle and high) Schools Compared to Number of Teachers (Core and Specialist) Supported by the Legislature's Funding Model: 2012-2013

Secondary School Size Category	Number of Schools	Average ADM Per School	Difference in Number of Teachers From Wyoming Funding Model
Middle Schools			
Small (<= 49 ADM)	8	20	(6.2)
Mid-size (>49 and <=105 ADM)	9	69	(8.7)
Large (> 105 ADM)	42	398	(11.2)
All middle Schools	59	297	(26.1)
High Schools			
Small (<= 49 ADM)	7	32	2.1
Mid-size (>49 and <=105 ADM)	8	82	(5.6)
Large (> 105 ADM)	39	551	16.9
All High Schools	54	414	13.4

Source: CRERW

4. Elective/Specialist Teachers

In addition to core classroom teachers, the EB model provides elective or specialist teachers to support core teachers. Generally, non-core or elective teachers, also called specialist teachers, offer courses in such subjects as music, band, art, physical education, health, career-technical education, etc. A combination of core and elective teachers allows time during the school day for all teachers to collaborate on instructional plans, participate in professional development activities and otherwise plan for class instruction.

Elementary School Elective Teachers			
2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
20% of core elementary teachers	20% of core elementary teachers	$0	No change from 2010 recommendation. No need for a formal recalibration.

Middle School Elective Teachers			
2010 EB Recommendation	**Current Wyoming Policy**	**Cost Difference***	**Current EB Recommendation**
20% of core middle school teachers	33 1/3 % of core middle school teachers.	$8,151,402	No change from 2010 recommendation. Recalibrate

High School Elective Teachers			
2010 EB Recommendation	**Current Wyoming Policy**	**Cost Difference**	**Current EB Recommendation**
33 1/3 % of core high school teachers	33 1/3 % of core high school teachers.	$0	No change from 2010 recommendation. No need for a formal recalibration.

**Because specialist teachers are generated as a percentage of the number of core teachers, the cost difference presented in this table includes the difference between consultant recommendations and current practice for both core AND specialist teachers.*

Analysis and Evidence

In addition to the core subjects addressed above, schools need to provide a solid well-rounded curriculum including art, music, library skills and physical education. Teachers also need some time during the regular school day to work collaboratively and engage in job-embedded professional development. Providing every teacher one period a day for collaborative planning and focused professional development requires an additional 20 percent allocation for elective teachers. Using this elective staff allocation, every teacher – core and elective – would teach 5 of 6 periods during the day, and have one period for planning, preparation and collaborative work. One of the most important elements of effective collaborative work is team-focused data-based decision making, using student data to improve instructional practices, now shown to be effective by a recent *randomized controlled trial* (Carlson, Borman & Robinson, 2011).

The 20 percent additional staff is adequate for elementary and middle schools, but the EB approach established a different argument for high schools. If the goal is to have more high school students take a core set of rigorous academic courses, and learn the course material at a high level of thinking and problem solving, cognitive research findings suggest that use of longer class periods, such as a block schedule, is a better way to organize the instructional time of a high school. (Bransford, Brown and Cocking, 1999; Donovan & Bransford, 2005a, 2005b, 2005c). Typical block scheduling for high schools includes four 90-minute blocks where teachers provide instruction for three of those 90-minute blocks and have one block – or 90 minutes – for planning, preparation and collaboration each day. This schedule requires elective teachers at a rate of 33 1/3 percent of the number of core teachers. This block schedule would operate with students taking four courses each semester attending the same classes each day, or

with students taking eight courses each semester while attending different classes every other day. Such a schedule could also entail a few "skinny" blocks (45 minute periods) for some classes. Each of these specific ways of structuring a block schedule, however, would require an additional 33 1/3 percent of the number of core teachers to serve as elective teachers to provide the regular teacher with a "block" for planning, preparation and collaboration each day.

It should be noted that this staffing recommendation for high schools would be sufficient for high schools to provide all students with a rigorous set of courses throughout grades 9-12, and an appropriate number of credits required for high school graduation to quality for Hathaway scholarships or be college ready for any post-secondary institution in the country.

We point out that the elective teacher recommendation described above does not provide sufficient resources, at the same class sizes, for either middle schools or high schools to offer a 7 period day and require teachers to instruct for only 5 of those periods. The EB model does not resource schools at that level for two primary reasons. First, the EB model formulates recommendations on strategies and resources to dramatically improve student performance in the core subjects of reading/English/language arts, mathematics, science, history/geography and world language, in part by providing nearly an hour of instruction in each of these subjects daily. Restructuring the day to add a seventh period is usually accomplished by reducing the minutes of instruction in core subjects, and thus is not a strategy that is likely to boost performance in those subjects, regardless of the arguments about the motivational aspects of elective classes. Second, increasing the provision of specialist and elective teachers to 40 percent in both middle and high schools is more costly. Therefore, a recommendation of 40 percent specialists and elective teachers in secondary schools would result in added costs and a potential decrease in instructional effectiveness for the core subjects, something that is not aligned with the framework for the EB approach to adequacy.

Nevertheless, the Legislature's funding model provides elective teachers for middle schools at the same rate as for high schools – 33 1/3 percent of core teachers – and thus exceeds the EB, cost-based model recommendations.

Resource Use Analysis

The analysis of core teachers includes a comparison of the number of teachers in Wyoming with the number of teachers allocated to school districts through the Wyoming Funded Model. That analysis showed a substantial number of teacher positions that were funded but not filled as teachers by the state's 48 school districts. Additionally, that analysis only included what we termed "traditionally organized" schools. There are a number of other school types in Wyoming that should be considered. In this analysis we provide information on teachers in other (not traditionally organized) schools, as well as statewide total data for the allocation of teachers across the districts.

The table below summarizes the differences between the number of teachers (core and specialist) generated by the Legislature's funding model and the number of teachers employed by the school districts by types of school other than Elementary, Middle and High School – using the definitions of school types used by the WDE in the CRERW report. In all four types of schools,

there are substantially fewer teachers than generated by the Legislature's funding model. This likely occurs because of the large number of minimum teachers the model provides for small schools that include multiple school types. In addition to the minimums, the model funds positions on the basis of the type of school represented by the highest grade in the school – and in the case of some 7-12 secondary schools, provides the minimum number of teachers for both middle AND high schools.

Comparison of Number of Teachers (Core and Specialist) in Wyoming (non-traditionally organized) Schools Compared to Number of Teachers (Core and Specialist) Funded through the Wyoming Funding Model: 2012-2013

School Size Category	Number of Schools	Average ADM Per School	Difference in Number of Teachers From Wyoming Funding Model
K-12	8	149	(15.7)
K-8	13	85	(12.6)
Secondary	8	169	(25.4)
Alternative	16	54	(39.8)

Source: CRERW

Statewide, the Legislature's funding model funded 6,707.6 core and specialist/elective teaching positions, while districts employ 6,100.1 teachers in 2012-13 a difference of 607.5 teaching positions. Among the state's 48 districts, 35 employ fewer teachers and 13 employ more teachers than the model funds.

Although the number of teachers in districts has been lower than the number of teachers allocated through the Legislature's funding model for all years since 2005-06, the difference has fluctuated somewhat since that time. The table below displays the number of teachers allocated by the model, the number employed, the difference, and the number employed as a percentage of allocated teachers for each year between 2008-09 and 2012-13. The table shows that districts have consistently employed about 90% of the number of teachers funded by the Wyoming funding Model.

Comparison of Number of Teachers (Core and Specialist) in Wyoming Schools Compared to Number of Teachers (Core and Specialist) Funded through the Wyoming Funded Model: 2008-09 through 2012-2013

Year	Number of Teachers Allocated in the Model	Number of Teachers Employed by Districts	Difference (Allocated minus Actual)	Actual as a Percent of Teachers Allocated in the Model (%)
2008-09	6,430.00	5,865.00	-565.00	91.21%
2009-10	6,416.30	5,933.00	-483.30	92.47%
2010-11	6,576.60	5,915.00	-661.60	89.94%
2011-12	6,633.60	5,977.10	-656.50	90.10%
2012-13	6,707.60	6,100.10	-607.50	90.94%

One possible reason districts have fewer teachers than funded through the model may be that they pay teachers higher salaries than the model provides. The table below shows the annual disparity between average district salaries and the salaries funded through the Legislature's funding model. The table clearly shows that over the years since the Legislature's funding model was implemented, districts have paid teachers between $5,000 and $6,000 more per year than they receive in funding.

District Average Teacher Salaries Compared to Model Funding: 2005-06 to 2012-13

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$43,464	$50,892	$52,943	$54,541	$55,779	$56,048	$56,734	$56,740
Funding Model Average Salary		$45,126	$46,840	$48,854	$50,662	$50,662	$50,662	$50,662
Difference		$5,766	$6,103	$5,687	$5,117	$5,386	$6,072	$6,078
% Difference		12.8%	13.0%	11.6%	10.1%	10.6%	12.0%	12.0%

Source: CRERW

A district-by-district analysis of the difference between teacher salaries used in the Legislature's funding model and actual salaries paid to teachers by school districts shows that 40 of 48 districts pay teachers more than the funding provided through the Legislature's funding model. On average, districts spent 106% of the Legislature's funding model salary allocation, with a high of 127% of model salary to a low of 88% of the model salary for teachers. In dollar terms, this ranged from $13,422 more than the model provided in one district to $6,252 less in another district. [3]

[3] It is important to note that the Legislature's funding model adjusts the average salary per teacher payment it makes to each district based on the average education and experience of the teaching staff in the district and is further adjusted for regional differences.

5. Additional Vocational/Career Technical Teachers

The Legislature's funding model provides additional staffing to school districts for vocational/CTE educational programs. The table below summarizes the current status of Vocational/CTE funding.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
No additional vocational education teachers resourced.	Apply an additional weighting factor of 29 percent to vocational education student FTEs. Based upon weighted student count, provide an additional teacher for every 21 students.	$2,057,916	No change from 2010 recommendation. Recalibrate

Discussion of this item can be found for Model Component 20, Vocational Education/Career Technical supplies and materials. The EB model does not recommend any additional teachers for vocational education/career technical education courses because Wyoming's secondary class sizes are already small, resourced at a class size of 21.

6. Minimum Teachers

As mentioned above, one important issue is how to staff schools with enrollments smaller than that of a one-unit prototype school – 96 elementary students and 105 middle and high school students. Schools with 49 or fewer students are provided 1 assistant principal position and 1 teacher for every 7 students. It is for schools with between 49 and either 96 or 105 students that minimum teacher allocations are included in the model.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
A minimum of 3.65 teachers provided for elementary schools, a minimum of 7 teachers for middle schools and high schools with ADM greater than 49. Resourced at the highest grade band level. For schools 49 & below,	A minimum of 6 teachers provided for elementary school grade bands with ADM greater than 49. A minimum of 8 teachers provided for middle school grade bands with ADM greater than 49. A minimum of 10	$14,337,242	No change from 2010 recommendation. Recalibrate

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
minimum teacher resources are provided on a prorated basis at 1 teacher for every 7 students.	teachers provided for high school grade bands with ADM greater than 49. For school grade bands of 49 & below, minimum teacher resources are provided on a prorated basis at 1 teacher for every 7 students.		

Evidence and Analysis

In the 2005 recalibration, for schools with fewer than 96 students at the elementary level, and 105 students at the secondary level, it was recommended that staffing be simply pro rated down from the staffing of a one unit (96 or 105 student) school. It was argued, particularly for elementary schools, that this provided sufficient staffing if schools organized classrooms with students of different ages. For elementary schools, it was even argued that multi-age classrooms could be a more effective way to organize classrooms (for example, see Decotis & Tanner (1995), Gutierrrez and Slavin (1992), Slavin (1987) and Pavan (1992)). In response, the Wyoming education community argued that it preferred to have one teacher per grade for these small schools. The Legislature agreed with these arguments and the Legislature's funding model provides for minimum teacher allocations that are higher than the cost based model.

In addition to the minimum number of teachers at each school, there is a "Small District Adjustment," which requires that districts with 243 or fewer ADM receive a minimum of one teacher for every grade level, or at least 13 teachers.

Resource Use Analysis

The state collects data comparing the number of teachers allocated through the Wyoming Funding Model with the number employed at the district as well as the school level (see the sections above on core and specialist teachers (sections 3 and 4). But the analysis of resource use focused mainly at the district level. Consequently, it is not possible to ascertain whether or not the number of teachers at individual schools with enrollments between 49 and either 96 (elementary) or 105) (secondary) employ more or fewer teachers than allocated through the Legislature's funding model. This more detailed analysis should be considered for the next recalibration.

As shown above, in 2012-13 school districts employed 607.5 fewer teachers than allocated through the Legislature's funding model, which suggests the possibility that these small schools

have fewer teachers than the minimum allocated.

7. Instructional Facilitators/Coaches

Coaches, or instructional facilitators, coordinate the instructional program but most importantly provide the critical ongoing instructional coaching and mentoring that the professional development literature shows is necessary for teachers to improve their instructional practice (Cornett & Knight, 2008; Crow, 2011; Garet, Porter, Desimone, Birman, & Yoon, 2001; Joyce & Calhoun, 1996; Joyce & Showers, 2002). This means that they spend the bulk of their time with teachers, modeling lessons, giving feedback to teachers, working with teacher collaborative teams, and generally helping to improve the instructional program. The few instructional coaches who also function as school technology coordinators provide the technological expertise to fix small problems with the computer system, install software, connect computer equipment so it can be used for both instructional and management purposes, and provide professional development to embed computer technologies into a school's curriculum. This report expands on the rationale for these individuals in the section on professional development (Element 16), but includes them here as they represent teacher positions.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1.5 instructional facilitator/coaches for prototypical elementary (288 ADM) and secondary (315 ADM) schools.	Funded outside block grant in a categorical grant equal to 60 percent of consultant recommendation	-$13,760,799	No change from 2010 recommendation. Recalibrate

Analysis and Evidence

Only a few states (e.g., Arkansas, New Jersey, Wyoming and to a modest degree North Dakota) explicitly provide resources for school and classroom-based instructional coaches, yet instructional coaches are key to making professional development work (see Element 16). Most comprehensive school designs (see Odden, 1997; Stringfield, Ross & Smith, 1996), and EB studies conducted in other states – Arizona, Arkansas, Kentucky, Maine, North Dakota, Washington and Wisconsin – call for school-based instructional facilitators or instructional coaches (sometimes called mentors, site coaches, curriculum specialists, or lead teachers).

Early research found strong effect sizes (1.25-2.71) for coaches as part of professional development (Joyce & Calhoun, 1996; Joyce & Showers, 2002). A 2010 evaluation of a Florida program that provided reading coaches for middle schools found positive impacts on student performance in reading (Lockwood, McCombs & Marsh, 2010). A related study found that coaches provided as part of a data-based decision making initiative also improved both teachers' instructional practice and student achievement (Marsh, McCombs & Martorell, 2010).

More importantly, a *randomized controlled trial* of coaching (Pianta, Allen & King, 2011) found significant, positive impacts in the form of student achievement gains across four subject areas – mathematics, science, history, and language arts. This gold standard of research provides further support to this element as an effective strategy to boost student learning.

In terms of numbers of coaches, several comprehensive school designs suggest that although one instructional coach might be sufficient for the first year of implementation of a school-wide program, additional instructional coaches are needed in subsequent years. Moreover, several technology-heavy school designs recommend a full-time facilitator who spends at least half-time as the site's technology expert. Thus, drawing from all programs, we conclude that 1.0 FTE instructional coaches/technology coordinators are needed for every 200 students in a school. This resourcing strategy works for elementary as well as middle and high schools. In Wyoming, this recommendation equates to 1.5 instructional coaches for each prototypical elementary (288 students), middle and high school (315 students).

Although instructional coaching positions are identified as FTE positions, schools could divide the responsibilities across several individual teachers. For example, the 3.0 positions in a 630-student high school could be structured with six half-time teachers and instructional coaches. In this example, each teacher/coach would work 50 percent time as a coach – perhaps in one curriculum area such as reading, math, science, social studies and technology – and 50 percent time as a classroom teacher or tutor.

We note that this level of staffing for coaches, combined with the additional elements of professional development discussed below, focus on making Tier 1 instruction (in the Response to Intervention frame) as effective as possible, providing a solid foundation of high quality instruction for everyone, including students who struggle more to learn to proficiency.

Resource Use Analysis

In 2012-13 the Wyoming Funding Model allocated a total of 238.4 facilitator positions to the state's school districts. The districts employed 213.5 facilitators or 24.9 fewer than allocated through the model. Expenditures for facilitators are included in the analysis of professional development in Element 16 below, although it should be noted that the CRERW report also shows expenditures of almost $2.2 million from general funds for facilitators in eight school districts.

Instructional coaches are a critical part of successful professional development for teachers. With the shift to college and career ready standards requiring substantial change in teachers' instructional practice, we argue here that the Legislature needs to consider strategies the provide incentives for school districts to hire and use more instructional coaches. If schools are to boost the achievement curve, teachers' instructional practice must become more effective, a task that is aided by using more instructional coaches as recommended in the cost-based model.

8. Core Tutors/Tier 2 Intervention

The most powerful and effective approach for helping students struggling to meet state standards is individual one-to-one or small group (1-3 or 1-5 maximum) tutoring provided by licensed teachers (Shanahan, 1998; Wasik & Slavin, 1993). In our 2005 and 2010 reports we recommended allocation of tutors to schools on the basis of the number of at-risk students. Since that time, we have recognized that all schools, even those with no at-risk students, have struggling students that need Tier 2 resources. Thus, we have modified the EB model so that each prototypical school receives at least one tutor regardless of the number of at-risk students. *Consequently, we identify tutor resources a school receives under the current EB model here in the core staffing section and also discuss the need for more tutors in Element 26 below.*

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Tutor positions provided on basis of at-risk student count, with a minimum of 1.0 for each school prototype.	Tutor positions provided on basis of at-risk student count, with a minimum of 1.0 for each school prototype.	$0	One tutor position in each prototypical school* Recalibrate This is a new EB (cost-based) recommendation.

* Additional tutors are enabled through the at-risk pupil count in Element 26.

Analysis and Evidence

The most powerful and effective extra help strategy to enable struggling students to meet state college and career ready standards is individual one-to-one tutoring provided by licensed teachers (Shanahan, 1998; Wasik & Slavin, 1993). Students who must work harder and need more assistance to achieve to proficiency levels especially benefit from preventative tutoring (Cohen, Kulik, & Kulik, 1982). Tutoring program effect sizes vary by the components of the approach used, e.g. the nature and structure of the tutoring program, but effect sizes on student learning reported in meta-analyses range from 0.4 to 2.5 (Cohen, Kulik & Kulik, 1982. Shanahan, 1998; Shanahan & Barr, 1995; Wasik & Slavin, 1993) with an average of about 0.75 (Wasik & Slavin, 1993).

The impact of tutoring programs depends on how they are staffed and organized, their relation to the core program, and tutoring intensity. Researchers (Cohen, Kulik, & Kulik, 1982; Farkas, 1998; Shanahan, 1998; Wasik & Slavin, 1993) and experts on tutoring practices (Gordon, 2009) have found greater effects when the tutoring includes the following:

- Professional teachers as tutors
- Tutoring initially provided to students on a one-to-one basis
- Tutors trained in specific tutoring strategies
- Tutoring tightly aligned to the regular curriculum and to the specific learning challenges, with appropriate content specific scaffolding and modeling

- Sufficient time for the tutoring
- Highly structured programming, both substantively and organizationally.

We note several specific structural features of effective one-to-one tutoring programs:

- First, each tutor would tutor one student every 20 minutes, or three students per hour. This would allow one tutor position to tutor 18 students a day. (Since tutoring is such an intensive activity, individual teachers might spend only half their time tutoring; but a 1.0 FTE tutoring position would allow 18 students per day to receive 1-1 tutoring.). Four positions would allow 72 students to receive individual tutoring daily in the prototypical elementary and middle schools.
- Second, most students do not require tutoring all year long; tutoring programs generally assess students quarterly and change tutoring arrangements. With modest changes such as these, close to half the student body of a 400-student school unit could receive individual tutoring during the year.
- Third, not all students who are from a low-income background require individual tutoring, so a portion of the allocation could be used for students in the school who might not be from a lower income family but nevertheless have a learning issue that could be remedied by tutoring. This also is part of the rationale for including 1 tutor in each prototypical school, regardless of the number of at-risk students.

Though this discussion focuses on *individual* tutoring, schools could also deploy these resources for small group tutoring. In a detailed review of the evidence on how to structure a variety of early intervention supports to prevent reading failure, Torgeson (2004) shows how one-to-one tutoring, one-to-three tutoring, and one-to-five small group sessions (all Tier 2 interventions) can be combined for different students to enhance their chances of learning to read successfully.

One-to-one tutoring would be reserved for the students with the most severe reading difficulties, scoring say, at or below the 20^{th} or 25^{th} percentile on a norm referenced test, or at the below basic level on state achievement tests. Intensive instruction for groups of three-to-five students would then be provided for students above those levels but below the proficiency level.

It is important to note that the instruction for all student groups needing extra help needs to be more explicit and sequenced than that for other students. Young children with weakness in knowledge of letters, letter sound relationships and phonemic awareness need explicit and systematic instruction to help them first decode and then learn to read and comprehend. As Torgeson (2004:12) states:

> Explicit instruction is instruction that does not leave anything to chance and does not make assumptions about skills and knowledge that children will acquire on their own. For example, explicit instruction requires teachers to directly make connections between letters in print and the sounds of words, and it requires that these relationships be taught in a comprehensive fashion. Evidence for this is found in a recent study of preventive instruction given to a group of high at-risk children in kindergarten, first grade and second grade …..only the most [phonemically] explicit intervention produced a reliable increase in the growth of word-reading ability …

> schools must be prepared to provide very explicit and systematic instruction in beginning word-reading skills to some of their students if they expect virtually all children to acquire work-reading skills at grade level by the third grade …. Further, explicit instruction also requires that the meanings of words be directly taught and be explicitly practiced so that they are accessible when children are reading text…. Finally, it requires not only direct practice to build fluency…. but also careful, sequential instruction and practice in the use of comprehension strategies to help construct meaning.

Torgeson (2004) goes on to state that meta-analyses consistently show the positive effects of reducing reading group size (Elbaum, Vaughn, Hughes & Moody, 1999) and identifies experiments with both one-to-three and one-to-five teacher-student groupings. Though one-to-one tutoring works with 20 minutes of tutoring per student, a one-to-three or one-to-five grouping requires a longer instructional time for the small group – up to 45 minutes. The two latter groupings, with 45 minutes of instruction, reduced the rate of reading failure to a miniscule percentage.

For example, if the recommended numbers of tutors are used for such small groups, a one FTE reading position could teach 30 students a day in the one-to-three setting with 30 minutes of instruction per group, and 30+ students a day in the one-to-five setting with 45 minutes of instruction per group. Four FTE tutoring positions could then provide this type of intensive instruction for up to 120 students daily. In short, though we have emphasized 1-1 tutoring, and some students need 1-1 tutoring, other small group practices (which characterize the bulk of Tier 2 interventions) can also work, with the length of instruction for the small group increasing as the size of the group increases.

Though Torgeson (2004) states that similar interventions can work with middle and high school students, the effect often is smaller as it is much more difficult to undo the lasting damage of not learning to read when students enter middle and high schools with severe reading deficiencies. However, a new randomized control study (Cook et al., 2014) discussed next found similarly positive impacts of a tutoring program for adolescents in high poverty schools if it was combined with counseling as well. This is made possible in the EB model as it includes such additional non-academic pupil support resources (see Element 27 discussion).

The rationale outlined above is strengthened by two recent *randomized controlled trials* of the effectiveness of tutoring for struggling students, which support our logic for providing a minimum level of tutor support in all schools as well as additional tutors for schools with greater need. At the elementary level, May et al., (2013), using a randomized controlled trial, assessed the impact of tutors in a Reading Recovery program. In the third year of a five-year evaluation, they found that Reading Recovery tutoring had an effect size of 0.68 on overall reading scores relative to the population of students eligible for such services in the specific study, and a 0.47 effective size relative to the national population of first grade struggling readers. The effects were similarly large for reading words and reading comprehension sub-scales.

For students in high schools, Cook, et al. (2014) reported on a *randomized controlled trial* of a two-pronged intervention that provided disadvantaged youth with tutoring *and* counseling. They

found that intensive individualized academic extra help – tutoring – combined with non-academic supports seeking to teach grade 9 and 10 youth social-cognitive skills based on the principles of cognitive behavioral therapy (CBT), led to improved math and reading performance. The study sample consisted mainly of students from low income and minority backgrounds, which generally pose the toughest challenges. The effect size for math was 0.65 and for reading was 0.48; the combined program also appeared to increase high school graduation by 14 percentage points (a 40 percent hike). The authors concluded that this intervention seemed to yield larger gains in adolescent outcomes per dollar spent than many other intervention strategies.

These studies are highlighted for several reasons. First, they represent new, *randomized controlled trials*, the "gold standard" of research supporting the efficacy of tutoring. Second, they show that tutoring can work not only for elementary but also for high school students, whereas most of the tutoring research addresses elementary-aged students. Third, they show that tutoring can work even in the most challenging educational environments. And fourth, they bolster the EB argument below that extra help resources in schools triggered by poverty/at-risk status should also include some non-academic, counseling resources as well, as the treatment in the second study was tutoring combined with a counseling.

In our 2005 and 2010 reports, we recommended tutor positions be provided only on the basis of at-risk student counts. The recommended ratio was one position for every 100 at-risk students but with a minimum of one for each prototypical school. As a result, a school without any at-risk students would receive the minimum of one tutor position for struggling students, but a school with 100 at-risk students would receive the same single tutor, even though it might have more need for tutor resources. Today educators and policymakers across the country argue that schools with few low-income students still have students who struggle to learn to proficiency, and that more rigorous college and career ready standards will lead to greater numbers of struggling students in the future. We find those arguments convincing and have modified the EB recommendations for tutoring resources.

The revised EB model provides one tutor/Tier 2-intervention position in each prototypical school. In parallel with that change, the EB model adjusts the ratio for additional tutor positions to one position for every 125 at-risk students. The additional support beyond the first tutor per prototypical school is discussed again in Section 26 (struggling students) below.

The new EB recommendation for tutor/Tier 2-intervention positions is more generous than the previous recommendation of 1/100 at-risk students with a minimum of one for each prototypical school. For example, under the old EB model, a prototypical school with no at-risk students would receive one position, as would a prototypical school with 100 at-risk students. The revised EB model calls for 1.0 position at a school with no at-risk students. For school with 100 at-risk students, the model provides 1.0 tutor positions plus an additional 0.8 (100/125) position for the 100 at-risk students, for a total of 1.8 positions.

That analysis shows that district practices with respect to tutors is not aligned with the Legislative funding model, i.e., districts use fewer tutors or Tier 2 interventionists than the model provides. Since extra help for struggling students is critical to educate all students to proficient

or higher performance levels, the resources for such extra help should be fully utilized. During the 2015 recalibration, the Legislature should consider incentives for districts to provide struggling students extra help. Holding performance standards constant and varying instructional time is a key strategy for ensuring all students are able to meet higher standards.

9. Substitute Teachers

Schools need some level of support for substitute teachers to cover classrooms when teachers are sick for short periods of time, absent for other reasons, or on long term leave. In many other states, substitute funds are budgeted at a rate of about 10 days per teacher. The cost-based model approach of providing funding equal to five percent of the cost of teacher salaries approximates that 10-day figure.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
5 % of core and elective teachers, instructional coaches, tutors (and teacher positions in extended day, summer school and ELL).	5 % of core and elective teachers, instructional coaches, tutors (and teacher positions in extended day, summer school and ELL).	$0	No change from 2010 recommendation. No need for a formal recalibration.

Analysis and Evidence

Five percent of a teacher work year equals approximately 10 days, so this provisions provides up to ten days of substitute teacher resources for each teacher. This approach does not mean that each teacher is provided ten substitute days a year; it means the district receives a "pot" of money approximately equal to 10 substitute days per year for all teachers, in order to cover classrooms when teachers are absent for reasons other than professional development. Professional development recommendations are fully developed in a separate section below (Element 13).

Resource Use Analysis

The Wyoming Funding Model allocated $6.7 million to school districts for substitutes in school year 2012-13. Data on actual district expenditures for substitute teachers are not collected by the WDE.

10. Core Guidance Counselors and Nurses

The EB approach has been modified to provide guidance counselor and nurse positions in the core program, and to provide additional pupil support positions (e.g., social workers and family liaison persons) on the basis of at-risk student counts as described in Element 27 below.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1 guidance counselor position for every 250 middle and high school students	1 guidance counselor position for every 250 middle and high school students	$0	1 guidance counselor for every 288 grade K-5 students 1 guidance counselor for every 250 grade 6-12 students* 1 nurse for every 750 K-12 students Recalibrate This is a new EB recommendation.

* Additional student support resources are provided on the basis of student at-risk student in Element 27.

Analysis and Evidence

Schools need guidance counselors and nurses. For guidance counselors, the EB model uses the standards from the American School Counselor Association (ASCA). Those standards recommend one counselor for every 250 secondary (middle and high school) students. This produces 1.26 pupil support positions for a 315-student prototypical middle school and 2.52 pupil support positions for a 630-student prototypical high school.

Today many states require guidance counselors in elementary schools as well. Moreover, even in states that do not require counselors at the elementary level, a growing number of elementary schools have begun to employ these personnel. Consequently, the EB model has been modified in recent years to include a minimum of one guidance counselor for a prototypical elementary school. As a result, we recommend recalibration of the Wyoming Funding Model to include a minimum of one guidance counselor position for each prototypical elementary school. The EB model provides additional pupil support personnel to schools on the basis of at-risk student counts as described in Element 27 below.

The physical and medical needs of students also have changed dramatically over the past several years. Many students need medications during the school day. School staff are often required to administer these medications. Many students have additional medical or physical needs and our experience in several states suggests that these needs have been growing over the past decade. Consequently, the EB model has been enhanced to provide nurses as core positions. Drawing

from the staffing standard of the National Association of School Nurses, the EB model now provides core school nurses at the rate of 1 FTE nurse position for every 750 students, prorated up and down without any minimum.

Resource Use Analysis

The CRERW report combines guidance counselors, nurses and other support personnel into one pupil support category to compare model staffing to actual staff allocations in the districts. In addition, because in some districts some of these personnel are reported at the district, rather than the school level, two comparisons are provided – one for school and district level differences and one for school level differences.

The dual reporting is a result of many school districts assigning pupil support personnel to multiple schools and then accounting for them as district level, rather than school level staff positions. In recent years, the WDE has worked with districts to assign the FTE of these personnel to their respective schools, and for the most part, the districts have made such assignments. However, a few districts continue to report some positions at the district level. Consequently, both school level and district and school level staff allocations are reported here.

In 2012-13, the Wyoming Funding Model allocated a total of 538.1 pupil support positions across the state. Districts reported a total of 494.9 school and district level pupil support positions filled, 43.2 fewer then generated by the model. Across the state, a total of 487.0 pupil support positions were reported at the school level, a difference of 51.1 from the 538.1 positions funded through the model. This shows that today, only 7.9 pupil support positions across the state are reported as district level staff.

An analysis of individual district pupil support staffing shows that 19 districts employ fewer pupil support staff than are funded through the model while 29 have more pupil support staff than are funded through the model.

11. Supervisory and Instructional Aides

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Provide funding at an amount equal to 2.0 FTE positions for 288 ADM prototypical elementary school; 2.0 FTE for 315 ADM prototypical middle school; 5.0 FTE for 630 ADM prototypical high school; resourced at the highest-grade prototype using total school ADM.	Provide funding at an amount equal to 2.0 FTE positions for 288 ADM prototypical elementary school; 2.0 FTE for 315 ADM prototypical middle school; 5.0 FTE for 630 ADM prototypical high school; resourced at the highest-grade prototype using total school ADM.	$0	2 for prototypical elementary school 2.0 for prototypical middle school of 315 3 for prototypical high school of 630 Resourced at the highest-grade prototype using total school ADM. Recalibrate

Analysis and Evidence

Elementary, middle and high schools need staff for responsibilities that include lunch duty, hallway monitoring, before and after school playground supervision, and others. Covering these duties generally requires an allocation of supervisory aides at about the rate of 2.0 FTE aide positions for a school of 400-500 students.

However, research does not support the use of instructional aides for improving student performance. As noted above (Element 2), the Tennessee STAR study, which produced solid evidence through field-based *randomized controlled trials* that small classes work in elementary schools, also produced evidence that instructional aides in a regular-sized classroom do not add instructional value, i.e., do not positively impact student achievement (Gerber, Finn, Achilles & Boyd-Zaharias, 2001).

At the same time, districts may want to consider a possible use of instructional aides that is supported by research. Two studies that show how instructional aides could be used to tutor students. Farkas (1998) has shown that if aides are selected according to clear and rigorous literacy criteria, are trained in a specific reading tutoring program, provide individual tutoring to students in reading, and are supervised, then they can have a significant impact on student reading attainment. Some districts have used Farkas-type tutors for students still struggling in reading in the upper elementary grades. Another study by Miller (2003) showed that such aides could also have an impact on reading achievement if used to provide individual tutoring to struggling students in the first grade.

We note that neither of these studies supports the typical use of instructional aides as general teacher helpers. Evidence shows that instructional aides can have an impact but only if they are selected according to educational criteria, trained in a specific tutoring program, deployed to provide tutoring to struggling students, and closely supervised.

Resource Use Analysis

The Wyoming Funding Model includes resources for 624.8 supervisorial aides across the state, while school districts actually employed 831.9 aides, a total of 207.1 more than funded through the model. Half of the districts have more aides than allocated through the model, half have fewer.

The CRERW shows that the average salary paid to aides by school districts in 2012-13 was $22,326, some $3,880 more than the model funded level of $18,446.

It is not clear from the CRERW report to what extent, if any, these aid positions are used as instructional aides in classrooms. In our School Use of Resources studies following the 2005 recalibration, we found a number of schools where instructional aides were employed, but we do not have evidence of how aides are used in schools today, nor whether aides employed as instructional aides have the training and experience that Farkas found can help improve student reading attainment.

12. Librarians and Librarian Media Technicians

Most schools have a library, and the staff resources must be sufficient to operate the library and to incorporate appropriate technologies into the library system.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Fund at the district level rather than school level. For districts with 0-300 ADM, provide funding for 1 librarian and 1 library clerk. For districts with 301-630 ADM, prorate from the 300 ADM level up to 2 librarians, but retain the 1 librarian clerk for the 630 ADM. Above 630 ADM, 1 librarian for every 288 elementary ADM and 1 librarian and 2 library clerks for every 630 secondary ADM, with a minimum of 2 librarians and 1 library clerk. No library media technicians funded, but rather a separate computer technician position in central office.	For non-alternative schools and small schools, provide 1 librarian for the prototypical elementary schools (288 ADM) prorate up and down, below and above 288 ADM. For middle or high schools with ADM between 105 and 630 ADM, 1 librarian. Below 105 prorate down and above 630 prorate. For non-alternative schools and small schools, provide 1 library media technician for every 315 middle and high school ADM, prorated up and down.	$3,474,482 $3,034,238 Total Cost Difference $6,508,720	Fund at the district level, 1 librarian for every 315 K-8 students and 1 librarian for every 630 9-12 students No library media technicians funded under this area – see computer technician section – Element 23 Recalibrate This is a new EB recommendation.

Analysis and Evidence

There is scant research on the impact of school librarians on student achievement. In 2003, however, six states conducted studies of the impacts of librarians on student achievement: Florida, Minnesota, Michigan, Missouri, New Mexico, and North Carolina. And, in 2012 Colorado conducted a statewide study using data from 2005-2011. The general finding is that, regardless of family income, children with access to endorsed librarians working full time perform better on state reading assessments (Rodney, M.J., Lance, K.C. & Hamilton-Rennell, C, 2003; Lance, K.C. & Hofschire, L, 2012). The Michigan study found that regardless of whether the librarian was endorsed, student achievement was better for low-income children, but having an endorsed librarian was associated with higher achievement than having an unendorsed

librarian (Rodney, M.J., Lance, K.C. & Hamilton-Rennell, C, 2003). Each state examined the issue differently, but library staffing and the number of operating hours were generally associated with higher academic outcomes. The EB Model recommendation for library staff is derived from best practices in other states, state statutes where they exist and the above research.

Resource Use Analysis

The Wyoming Funding Model allocates 279.9 librarian positions across the state. Districts employed 121.1 librarians (a difference of 158.7) at the school and district level, and 116.0 (a difference of 163.9) at the school only level. See Element 10 (guidance counselors and nurses) for discussion of the difference between school level and district and school level staffing.

The model allocates 134.1 library media tech staff. Districts employ 360.3 of these positions at the district and school level of which only 116.0 are allocated directly to schools by the districts. It is likely that the district level reported staff provides technical support to multiple schools in many districts.

Across the state's 48 districts, 44 employ fewer librarians than allocated by the model while only six employ fewer library media technicians than allocated through the model.

Librarian salaries are funded at the same level as teacher salaries in the model. Library media tech staff are paid an average of $49,284, some $5,784 more than the $43,501 funded in the model.

13. Principals and Assistant Principals

Every school unit needs a principal. There is no research evidence on the performance of schools with or without a principal. All comprehensive school designs, and all prototypical school designs from all professional judgment studies around the country, include a principal for every school unit.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1.0 principal for all schools down to 96 ADM for elementary schools and 105 ADM for middle and high schools, prorated by ADM below these ADM levels. 1.0 assistant principal for every 288 elementary ADM beginning at 289 ADM; 1.0 assistant principal for every 315 middle and high school ADM beginning at 316 ADM.	1.0 principal for all schools down to 96 ADM for elementary schools and 105 ADM for middle and high schools, prorated by ADM below these ADM levels. 1.0 assistant principal for every 288 elementary ADM beginning at 289 ADM;1.0 assistant principal for every 315 middle and high school ADM beginning at 316 ADM.	$0	No change from 2010 recommendation. No need for a formal recalibration.

Analysis and Evidence

There is no research evidence on the performance of schools with or without a principal. Few if any comprehensive school designs for 500 students include assistant principal positions. And very few school systems around the country provide assistant principals to schools with 500 or fewer students. The EB model also recommends that instead of one school with a large number of students, school buildings with large numbers of students be sub-divided into multiple school units within the building, we recommend that each unit have a principal. This implies that one principal would be required for each school unit. The cost-based model provides one assistant principal for the high school largely for discipline and athletics.

Resource Use Analysis

The Legislature's funding model provides resources to employ 417.2 school site administrators (principals and assistant principals). Districts employed a total of 366.8 or 50.4 fewer school administrators than the model resources. Nine districts employ more site administrators than the model funds, 37 employ fewer site administrators than the model funds and two employ the same number of site administrators as resourced through the model.

On average, districts paid principals $7,728 more than the model funds. The average principal salary in 2012-13 was $92,801, some 11.7% more than funded through the model. For assistant principals, the difference was even larger, with the model funding $69,702 for each generated assistant principal position and districts paying 24.1% more, or $86,527. This difference likely occurs because most of the assistant principals are in the larger school districts where salaries are generally higher.

A district-by-district analysis shows that 42 districts paid principals more than the model provided in 2012-13 and six paid less. One district paid principals 142% of the model funding level (the highest percentage difference identified), while the lowest district paid principals 83% of model funding. On a dollar basis, average principal salary exceeded model funding by $31,067 in the district with the largest positive difference, and was $13,621 below the model principal salary in the district with salaries furthest below the model level for principal salaries.

In districts that employed assistant principals, all of them paid higher salaries than the model provided. This ranged from 102% of model funding to 131% of model funding or a difference of between $1,397 and $21,365.

14. School Site Secretarial Staff

Every school site needs secretarial support to provide clerical and administrative support to administrators and teachers, to answer the telephone, greet parents when they visit the school, help with paper work, etc. In the current Wyoming Funding Model secretary positions are distinguished from clerical positions, the fundamental difference being secretaries have a 12-month appointment and clerical staff school year appointments.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Provide 1.0 secretary for all schools down to 96 ADM for elementary and 105 ADM for middle and high schools, prorated by ADM below these ADM levels.	Provide 1.0 secretary for all schools down to 96 ADM for elementary and 105 ADM for middle and high schools, prorated by ADM below these ADM levels.	$0	Simplify the formula to provide just secretary staff. Provide 2.0 secretary positions for every prototypical elementary school, prorated down to 1.5

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Provide 1.0 secretary for 105 to 315 middle school ADM, prorated down below 105 ADM and prorated up for 316 ADM and above. Provide 1.0 FTE secretary for 105 to 630 high school ADM, prorated down below 105 ADM and prorated up for 631 ADM and above. Resourced at the highest-grade prototype using total school ADM. Provide1.0 clerical for 288 ADM prototypical elementary school. Provide 1.0 clerical for ADM prototypical middle school. Provide 2.0 clerical for 315 ADM prototypical high school (total of 4.0 secretaries for 630 students). All FTE positions prorated up or down from prototypical level and resourced at the highest-grade prototype using total school ADM.	Provide 1.0 secretary for 105 to 315 middle school ADM, prorated down below 105 ADM and prorated up for 316 ADM and above. Provide 1.0 FTE secretary for 105 to 630 high school ADM, prorated down below 105 ADM and prorated up for 631 ADM and above. Resourced at the highest-grade prototype using total school ADM. Provide1.0 clerical for 288 ADM prototypical elementary school. Provide 1.0 clerical for ADM prototypical middle school. Provide 2.0 clerical for 315 ADM prototypical high school (total of 4.0 secretaries for 630 students). All FTE positions prorated up or down from prototypical level and resourced at the highest-grade prototype using total school ADM.		at 192 ADM, then prorated down to 1.0 at 96ADM and prorated by ADM below this level. Prorated up above 288 ADM at rate of 1.0 for every 144 elementary students. Provide 2.0 secretary positions for every prototypical middle school, prorated down to 1.5 at 210 ADM, then prorated down to 1.0 at 105 ADM and prorated by ADM below this level. Prorated up above 315 ADM at rate of 1 for every and 157.5 middle school students. Provide 3.0 secretary positions for all high schools reduced to two for 315 ADM prorated down to 1.5 at 210 ADM, then prorated down to 1.0 at 105 ADM and prorated by ADM below this level. Prorated up above 630 at rate of 1 for every 210 high school ADM. All FTE positions prorated up or down from prototypical level and resourced at

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
			the highest-grade prototype using total school ADM. Recalibrate This is a new EB recommendation.

Analysis and Evidence

The secretarial ratios included in the EB model generally are derived from common practices across the country. There is no research on the impact that clerical staff have on student outcomes, yet it is impossible to have a school operate without adequate clerical staff support.

Resource Use Analysis

Across Wyoming, in 2012-13 the funding model resourced a total of 693.5 secretarial and clerical positions while the districts employed 621.9 or 71.6 fewer school level secretarial and clerical staff. That year, 25 districts paid average salaries for these positions that exceeded the model while 23 paid lower average salaries. In one district, average salaries exceeded the model level of funding by $13,368 and in the district with the salaries furthest below the model level, salaries were $9,109 below the model. On a percentage basis, this ranged from a high of 143% of model salaries for clerical and secretarial staff to a low of 72% of model salaries for those positions.

DOLLAR PER STUDENT RESOURCES

This section addresses areas that are funded by dollar per student amounts, including gifted and talented, professional development, computers and other technology, instructional materials and supplies, extra duty/student activities.

15. Gifted and Talented Students[4]

A complete analysis of educational adequacy should include the gifted, talented, and able and ambitious students, most of who perform above state proficiency standards. This is important for all states whose citizens desire improved performance for students at all levels of achievement.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
$25 per ADM in 2010 inflated annually	Provide an amount equal to$29.41 per ADM	Modest difference	Precise the dollar figure during 2015 recalibration.

Analysis and Evidence

Research shows that developing the potential of gifted and talented students requires:

- Effort to discover the hidden talent of low income and/or culturally diverse students
- Curriculum materials designed specifically to meet the needs of talented learners
- Acceleration of the curriculum
- Special training in how teachers can work effectively with talented learners.

Discovering hidden talents in low-income and/or culturally diverse high ability learners. Research studies on the use of performance assessments, nonverbal measures, open-ended tasks, extended try-out and transitional periods, and inclusive definitions and policies produce increased and more equitable identification practices for high ability culturally diverse and/or low-income learners. Access to specialized services for talented learners in the elementary years is especially important for increased achievement among vulnerable students. For example, high-ability, culturally-diverse learners who participated in three or more years of specialized elementary and/or middle school programming had higher achievement at high school graduation, as well as other measures of school achievement, than a comparable group of high ability students who did not participate (Struck, 2003).

Access to curriculum. Overall, research shows that curriculum programs specifically designed for talented learners produce greater learning than regular academic programs. Increased complexity of the curricular material is a key factor (Robinson & Clinkenbeard, 1998). Large-scale curriculum projects in science and mathematics in the 1960s, such as the Biological Sciences Curriculum Study (BCSC), the Physical Science Study Committee (PSSC), and the Chemical Bond Approach (CBA), benefited academically talented learners (Gallagher, 2002).

[4] This section is based on an unpublished literature review written by Dr. Ann Robinson, Professor, University of Arkansas at Little Rock.

Further, curriculum projects in the 1990s designed to increase the achievement of talented learners in core content areas such as language arts, science, and social studies produced academic gains in persuasive writing and literary analysis (VanTassel-Baska, Johnson, Hughes & Boyce, 1996; VanTassell-Baska, Zuo, Avery & Little, 2002), scientific understanding of variables (VanTassel-Baska, Bass, Ries, Poland & Avery, 1998), and problem generation and social studies content acquisition (Gallagher & Stepien, 1996; Gallagher, Stepien & Rosenthal, 1992).

Access to acceleration. Because academically talented students learn quickly, one effective option for serving them is acceleration of the curriculum. Many educators and members of the general public believe acceleration always means skipping a grade. However, there are at least 17 different types of acceleration ranging from curriculum compacting (which reduces the amount of time students spend on material) to subject matter acceleration (going to a higher grade level for one class) to high school course options like Advanced Placement or concurrent credit (Southern, Jones & Stanley, 1993). In some cases, acceleration means *content* acceleration, which brings more complex material to the student at his or her current grade level. In other cases, acceleration means *student* acceleration, which brings the student to the material by shifting placement. Reviews of the research on different forms of acceleration have been conducted across several decades and consistently report the positive effects of acceleration on student achievement (Gallagher, 1996; Kulik & Kulik, 1984; Southern, Jones & Stanley, 1993), including Advanced Placement classes (Bleske-Rechek, Lubinski & Benbow, 2004). Multiple studies also report participant satisfaction with acceleration and benign effects on social and psychological development.

Access to trained teachers. Research and teacher reports indicate that general classroom teachers make very few, if any, modifications for academically talented learners (Archambault, et al, 1993), even though talented students have mastered 40 to 50 percent of the elementary curriculum before the school year begins. In contrast, teachers who receive appropriate training are more likely to provide classroom instruction that meets the needs of talented learners. Students report differences among teachers who have had such training, and independent observers in the classroom document the benefit of this training as well (Hansen & Feldhusen, 1994). Curriculum and instructional adaptation requires the support of a specially trained coach at the building level, which could be embedded in the instructional coaches recommended above (Reis & Purcell, 1993). Overall, learning outcomes for high ability learners are increased when they have access to programs whose staff have specialized training in working with high ability learners, which could be accomplished with the professional development resources recommended below.

Overall, research on gifted programs indicates that the effects on student achievement vary by the strategy of the intervention. Enriched classes for gifted and talented students produce effect sizes of about +0.40 and accelerated classes for gifted and talented students produce somewhat larger effectives sizes of +0.90 (Gallagher, 1996; Kulik & Kulik, 1984; Kulik & Kulik, 1992).

Practice implications. At the elementary and middle school level, our understanding of the research on best practices is to place gifted students in special classes comprised of all gifted students and accelerate their instruction because such students can learn much more in a given

time period than other students. When the pull out and acceleration approach is not possible, an alternative is to have these students skip grades in order to be exposed to accelerated instruction. Research shows that neither of these practices systemically produces social adjustment problems. Many gifted students get bored and sometimes restless in classrooms that do not have accelerated instruction. Both of these strategies have little or no cost, except for scheduling and training of teachers, resources for which are provided by Professional Development (Element 19).

The primary approach to serve gifted students in high schools is to enroll them in advanced courses, such as advanced placement (AP) and International Baccalaureate (IB), to participate in dual enrollment in postsecondary institutions, or to have them take courses through distance learning mechanisms.

We confirmed our understanding of best practices for the gifted and talented with the directors of three of the Gifted and Talented research centers in the United States: Dr. Elissa Brown, Director of the Center for Gifted Education, College of William & Mary; Dr. Joseph Renzulli, The National Research Center on the Gifted and Talented at the University of Connecticut; and Dr. Ann Robinson, Director of the Center for Gifted Education at the University of Arkansas at Little Rock.

The University of Connecticut center also agreed with these conclusions and has developed a very powerful Internet-based platform, Renzulli Learning, which could provide for a wide range of programs and services for gifted and talented students. This system takes students through about a 25-30 minute detailed assessment of their interests and abilities, which produces an individual profile for the student. The student is then directed, via a search engine, to 14 different Internet data systems, including interactive web-sites and simulations that provide a wide range of opportunities to engage the student's interests. Renzulli stated that such an approach was undoubtedly the future for the very bright student and could be supported by a grant of $25 per student in a district. Field (2007) found that after 16 weeks, students given access to an internet based program, such as Renzulli Learning to read, research, investigate, and produce materials, significantly improved their overall achievement in reading comprehension, reading fluency and social studies.

Resource Use Analysis

Gifted and Talented was excluded from the CRERW analysis. WDE data show that in 2012-13, 24 districts reported a total of $7,684,766 in expenditures for Gifted and Talented Education. It is likely that other districts report Gifted and Talented Expenditures in different accounting functions and objects. It is even possible that the districts reporting Gifted and Talented expenditures in this category may have other expenditures in other functions or objects that could be coded as Gifted and Talented. School districts and Wyoming community colleges provide for students in high school to partake in dual and concurrent enrollment courses free of charge to the student.

16. Intensive Professional Development

Professional development (PD) includes a number of important components. This section describes the specific dollar resource recommendations the EB model provides for PD. In addition to the resources listed here, PD includes the instructional coaches described in Element 7 and the collaborative planning time provided by the provisions for elective or specialist teachers. Those staff positions are critical to an adequate PD program along with the resources identified in this section.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
10 days of student free time for training $100 per ADM for trainers inflated annually, to $124.46	10 days of student free time for training $100 per ADM for trainers inflated to $117.64.	Very minor difference part of LSO estimate that combines a number of areas	Precise the dollar figure during 2015 recalibration.

Analysis and Evidence

Effective teachers are the most influential factor in student learning (Rowan, Correnti & Miller, 2002; Wright, Horn & Sanders, 1997) and more systemic deployment of effective instruction is key to improving student learning and reducing achievement gaps (Odden, 2011a; Raudenbusch, 2009). All school faculties need ongoing professional development. Improving teacher effectiveness through high quality professional development is arguably one of the most important resource strategies identified.

An ongoing, comprehensive and systemic professional development strategy is the way in which all the resources recommended in this report are transformed into high quality, Tier 1 instruction that increases student learning. Further, though the key focus of professional development is for better instruction in the core subjects of mathematics, reading/language arts, writing, history and science, the professional development resources in the EB model are adequate to address the instructional needs for gifted and talented, special education, English language learning students, for embedding technology in the curriculum, and for elective teachers as well. Finally, all beginning teachers need intensive professional development, first in classroom management, organization and student discipline, and then in instruction. And the most effective way to "induct" and "mentor" new teachers is to have them working in functional collaborative teacher teams, discussed above for Element 4.

Fortunately, there is recent and substantial research on effective professional development and its costs (e.g., Crow, 2011; Odden, 2011b). Effective professional development is defined as professional development that produces change in teachers' classroom-based instructional practice that can be linked to improvements in student learning. The practices and principles that researchers and professional development organizations use to characterize "high quality" or "effective" professional development draw upon a series of empirical research studies that linked program strategies to changes in teachers' instructional practice and subsequent increases in

student achievement. Combined, these studies and recent reports from Learning Forward, the national organization focused on professional development (see Crow, 2011), identified six structural features of effective professional development:

- The *form* of the activity – that is, whether the activity is organized as a study group, teacher network, mentoring collaborative, committee or curriculum development group. The above research suggests that effective professional development should be school-based, job-embedded and focused on the curriculum taught rather than a one-day workshop.
- The *duration* of the activity, including the total number of contact hours that participants are expected to spend in the activity, as well as the span of time over which the activity takes place. The above research has shown the importance of continuous, ongoing, long-term professional development that totals a substantial number of hours each year, at least 100 hours and closer to 200 hours.
- The degree to which the activity emphasizes the *collective participation* of teachers from the same school, department, or grade level. The above research suggests that effective professional development should be organized around groups of teachers from a school that over time includes the entire faculty
- The degree to which the activity has a *content focus* – that is, the degree to which the activity is focused on improving and deepening teachers' content knowledge as well as how students learn that content. The above research concludes that teachers need to know well the content they teach, need to know common student miscues or problems students typically have learning that content, and effective instructional strategies linking the two. The content focus today should emphasize content for college and career ready curriculum standards.
- The extent to which the activity offers opportunities for *active learning*, such as opportunities for teachers to become engaged in the meaningful analysis of teaching and learning for example, by scoring student work or developing, refining and implementing a standards-based curriculum unit. The above research has shown that professional development is most effective when it includes opportunities for teachers to work directly on incorporating the new techniques into their instructional practice with the help of instructional coaches (see also Joyce & Showers, 2002).
- The degree to which the activity promotes *coherence* in teachers' professional development, by aligning professional development to other key parts of the education system such as student content and performance standards, teacher evaluation, school and district goals, and the development of a professional community. The above research supports tying professional development to a comprehensive, inter-related change process focused on improving student learning.

Form, duration, and active learning together imply that effective professional development includes some initial learning (*e.g*. a two-week – 10 day – summer training institute) as well as considerable longer-term work in which teachers incorporate the new methodologies into their actual classroom practice, with guidance provided by instructional coaches. Active learning implies some degree of collaborative work and coaching during regular school hours to help the teacher incorporate new strategies in his/her normal instructional practices. It should be clear that the longer the duration, and the more the coaching, the more time is required of teachers as well as professional development trainers and coaches.

Content focus means that effective professional development focuses largely on subject matter knowledge, what is known about how students learn that subject, and the actual curriculum that is used to teach the content. Today this means a curriculum program to ensure students are college and career ready when they graduate from high school. Collective participation implies that professional development includes groups of and at some point all teachers in a school, who then work together to implement the new strategies, engage in data-based decision making (Carlson, Borman & Robinson, 2011) and build a professional community.

Coherence suggests that the professional development is more effective when the signals from the policy environment (federal, state, district, and school) reinforce rather than contradict one another or send multiple, confusing messages. Coherence also implies that professional development opportunities should be given as part of implementation of new curriculum and instructional approaches, today focusing on the Common Core curriculum or curriculum linked to college and career ready standards. Note that there is little support in this research for the development of individually oriented professional development plans; the research implies a much more systemic approach.

Each of these six structural features has cost implications. Form, duration, collective participation, and active learning require various amounts of both teacher and trainer/coach/mentor time, during the regular school day and year and, depending on the specific strategies, outside of the regular day and year as well. This time costs money. Further, all professional development strategies require some amount of administration, materials and supplies, and miscellaneous financial support for travel and fees. Both the above programmatic features and the specifics of their cost implications are helpful to comprehensively describe specific professional development programs and their related resource needs.

From this research on the features of effective professional development, the EB model includes the following for a systemic, ongoing, comprehensive professional development program:

- 10 days of student free time for training
- Funds for training at the rate of $117.64 per student

These resources are in addition to:

- Instructional coaches (Element 7)
- Collaborative work with teachers in their schools during planning and collaborative time periods (Element 4)

Resource Use Analysis

The Wyoming Funding Model allocated $10,511,704 for professional development training in 2012-13. The districts reported expenditures of $7,995,295 that year, or 76.1% of the funds they received for that purpose. Nine districts spent more than their professional development allocation, while 39 spent less, and one district did not report spending any money for professional development. During the 2015 recalibration, the legislature should consider establishing incentives for districts to sponsor more professional development, as it is key to improving instructional practice in ways that boost student achievement.

17. Instructional Materials

The need for up-to-date instructional materials is paramount. Newer materials contain more accurate information and incorporate the most contemporary pedagogical approaches. New curriculum materials are critical today as the school systems shifts to more rigorous college and career ready standards. To ensure that materials are current, twenty states have instituted adoption cycles in which they specify or recommend texts that are aligned to state learning standards (Ravitch, 2004). Up-to-date instructional materials are expensive, but vital to the learning process. Researchers estimate that up to 90 percent of classroom activities is driven by textbooks and textbook content (Ravitch, 2004). Adoption cycles with state funding attached allow districts to upgrade their texts on an ongoing basis instead of allowing these expenditures to be postponed indefinitely.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Instructional materials: $149.23 per ADM for elementary and middle schools and $186.54 per ADM for high schools.	$335.93 per ADM for elementary and middle schools and $411.33 per ADM for high schools.	$18,104,526	Recalibrate

Analysis and Evidence

Given the emergence of college and career ready standards, and the availability of instructional materials in digital form, this Model Component should be more formally recalibrated in 2015.

Resource Use Analysis

The WDE CRERW report combined expenditures for instructional materials and technology into one category for reporting purposes. The Wyoming Funding Model generates a total of $46,868,777 in funds for the districts, which in turn spent $35,591,703.00 or $11,277,074 less than allocated. This represents 80.6% of the funds generated by the model for technology and instructional supplies. It is not possible to determine what proportion of this went for technology specific equipment and supplies and what for textbooks and other supplies. Costs for assessment are detailed in Element 18 immediately below.

18. Short Cycle/Formative Assessments

The need to progress monitor students with Individual Education Programs and for teachers to engage in collaborative work using student data requires that faculties have access to short cycle, interim assessment data.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
$37.70 per ADM and not subject to an ECA.	$37.70 per ADM and not subject to an ECA.	$0	Precise the dollar figure during 2015 recalibration.

Analysis and Evidence

Data-based decision making has become an important element in school reform over the past decade. It began with the seminal work of Black and William (1998) on how ongoing data on student performance could be used by teachers to frame and reform instructional practice, and continued with current best practice on how professional learning communities use student data to improve teaching and learning (DuFour, et al., 2010; Steiny, 2009). The goal is to have teachers use data to inform their instructional practice, identify students who need interventions and improve student performance (Boudett, City & Murnane, 2007). As a result, data based decision making has become a central element of schools that are moving the student achievement needle (Odden, 2009, 2012).

Recent research on data-based decision making has documented significant, positive impacts on student learning. For example, Marsh, McCombs and Martorell (2010) showed how data-driven decision-making in combination with instructional coaches produced improvements in teaching practice as well as student achievement. Further, a recent study of such efforts using the gold standard of research – a *randomized controlled trial* – showed that engaging in data-based decision making using interim assessment data improved student achievement in both mathematics and reading (Carlson, Borman & Robinson, 2011).

There is some confusion in terminology when referring to these new assessment data. Generally, these student performance data are different from those provided by state accountability or summative testing, such as Wyoming's end of year tests. The most generic term is "interim data," meaning assessment data collected in the interim between the annual administrations of state accountability tests, though some practitioners and writers refer to such data as "formative assessments." There are at least two kinds of such "interim" assessment data. Benchmark assessments, such as those provided by the Northwest Evaluation System called MAP (www.nwea.org), which are given 2-3 times a year, often at the beginning, middle and end of the year. They are meant to provide "benchmark" information so teachers can see at the end of the semester how students are progressing in their learning. Sometimes these benchmark assessments are given just twice, once in the fall and again in late spring, and function just as a pre- and post-test for the school year, even though some practitioners erroneously refer to tests used this way as "formative assessments." These test data cannot be used for progress monitoring in a Response to Intervention program of extra help for struggling students.

A second type of assessment data is collected during shorter time cycles within every quarter, such as monthly, and often referred to as "short cycle" or "formative" assessments. These more "micro" student outcome data are meant to be used by teachers to plan instructional strategies before a curriculum unit is taught, to track student performance for the two-to-three curriculum

concepts that would normally be taught during a nine week or so instructional period, and to progress monitor students with IEPs.

Examples of "short cycle" assessments include STAR Enterprise from Renaissance Learning (www.renaissance.com), which is in an online, adaptive system that provides data in reading/literacy and mathematics for grades PreK-12. The basic package costs less than $10 a student per subject, takes students about 20-30 minutes to take the test, are now aligned to the Common Core, can be augmented with professional development activities and programs and can be given as often as the teacher wishes. Many Reading First schools as well as many schools we have studied (Odden & Archibald, 2009; Odden, 2009) use the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments (http://dibels.uoregon.edu).

The Wireless Generation, now one of three parts of Amplify which was launched in July 2012 as an education division of News Corp, has created an assessment, similar to DIBELS, that can be used with a handheld, mobile, electronic device. The company also offers a web service that provides professional development for teachers on how to turn the results into specific instructional strategies, including video clips of how to teach certain reading skills. The cost is approximately $15 per student per year, plus approximately $200 per teacher for the device, and somewhat more for training, though the company usually uses a trainer-of-trainers approach.

Many districts have also developed their own benchmark tests in mainly core subject areas. Others use common unit or chapter tests to gauge interim student progress toward achieving standards. While these tests cannot be normed because of their localized origin, they can provide valuable information to site and district teachers and administrators to ensure students are learning and that teachers have covered the subject standards required in district pacing guides.

Though some "interim" assessments are teacher created, it often is more efficient to start with commercially available packages, most of which are administered online and provide immediate results. Short cycle assessments provide the information a teacher needs to create a micro-map for how to teach specific curriculum units. Analyses of the state tests provide a good beginning for schools to redesign their overall educational program. Benchmark assessments give feedback on each semester of instruction and are often used to determine which students need interventions or extra help. Teachers also need additional short cycle assessment and other screening data to design the details of, and daily lesson plans for, each specific curriculum unit in order to become more effective in getting all students to learn the main objectives in each curriculum unit to the level of proficiency.

When teachers have the detailed data from these interim assessments, they are able to design instructional activities that are more precisely matched to the exact learning status of the students in their own classrooms and school. In this way, their instruction can be much more efficient because they know the goals and objectives they want students to learn, and they know exactly what their students do and do not know with respect to those goals and objectives. With these data they can design instructional activities specifically to help the students in their classrooms learn the goals and objectives for the particular curriculum unit.

The costs of these powerful assessments are modest. The EB model provides $30 to $35 per student, which is more than sufficient for a school to purchase access to the system, as well as some specific technological equipment and related professional development. The Renaissance Learning STAR assessments can function as both interim and benchmark assessments, can be used to progress monitor students with IEPs, include both math and reading PreK-12, and cost less than this figure. Some districts have dropped Scantron, NWEA MAP, and Aims Web assessments and replaced them with just the single STAR enterprise system that provides all the information of the previous three, and at a lower overall cost.

Resource Use Analysis

The Wyoming Funding Model provides each district with $37.70 per ADM for assessment costs. Only 33 of the 48 districts reported expenditures in this category; it is not clear how assessment expenditures are recorded in the remaining 15 districts. Of the 33 districts reporting expenditures, only four spent more than the model allocation, while the remaining 29 spent less than the model allocates. Among the 33 districts reporting expenditures, total assessment expenditures amounted to $1,648,832, some $1,744,848 less than the $3,393,680 funded through the model.

19. Technology and Equipment

Over time, schools need to embed technology in instructional programs and school management strategies. Today, more and more states require students not only to be technologically proficient but also to take some courses online in order to graduate from high school. Further, there are many online education options, from state-run virtual schools such as those in Florida and Wisconsin, to those created by private sector companies who run many virtual charter schools, such as K12 Inc. and Connections Academy. "Blended instructional" or "the flipped classroom" models, such as Rocketship, have also emerged (Whitmire, 2014). These programs infuse technology and online teaching into regular schools, provide more 1-1-student assistance, and put the teacher into more of a coaching role (see Odden, 2012). Research also shows that these technology systems work very well for many students, and can work very effectively in schools with high concentrations of lower income and minority students (Whitmire, 2014). Moreover, they can be less costly than traditional public schools (Battaglino, Haldeman & Laurans, 2012; Odden, 2012).

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
$250 per pupil inflated annually to $266.49	Provide an amount equal to $294 per ADM.	$3,281,514	Recalibrate

Analysis and Evidence

Given the evolution of the Internet, potential of online and digital learning, the emergence of tablets, low cost computers such as Chromebooks, and other less costly computers, this Model Component should be formally recalibrated in 2015.

Resource Use Analysis

The WDE CRERW report combined expenditures for instructional materials and technology into one category for reporting purposes. The Wyoming Funding Model generates a total of $46,868,777 in funds for the districts who in turn spent $35,591,703.00 or $11,277,074 less than allocated. This represents 80.6% of the funds generated by the model for technology and instructional supplies. It is not possible to determine what proportion of this went for technology specific equipment and supplies and what for textbooks and other supplies. Costs for assessment are detailed in Element 18 immediately above. (Note that what is reported here is exactly the same as reported in the resource use analysis section of Element 17 – instructional materials.)

20. Career Technical Education Equipment/Materials

Vocational education, or its modern term, Career and Technical Education (CTE), has experienced a shift in focus in the past decade. Traditional vocational education focused on practical, applied skills needed for wood and metalworking, welding, automobile mechanics, typing and other office assistance careers, as well as courses in home economics. Today, many argue that vo-tech is more appropriately info-tech, nano-tech, biotech, and health-tech. The argument is that Career and Technical education should begin to incorporate courses that provide students with applied skills for new work positions in the growing and higher wage economy including information technologies (such as computer network management), engineering (such as computer-assisted design), a wide range of jobs in the expanding health portions of the economy and bio-technical positions – all of which can be entered directly from high school. The American College Testing Company and many policymakers have concluded that the knowledge, skills and competencies needed for college are quite similar to those needed for work in the higher-wage, growing jobs of the evolving economy, so all students need a solid academic high school program to be college and career ready when they graduate from high school.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
$9,622.70 per vocational education teacher FTE. $1,854.45 for equipment allowance; $6,841.74 for supply allowance, and $926.51 for equipment replacement.	Inflated amounts of $9,094.97 per vocational education teacher FTE. $1,752.75 for equipment allowance; $6,466.52 for supply	Marginal difference in equipment costs Wyoming also provides an extra weight of 0.29 for all	Precise the dollar figure during 2015 recalibration.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
	allowance, and $875.70 for equipment replacement.	students in career technical programs to lower those class sizes (see Element 5 above).	

Analysis and Evidence

A key issue is the cost of career and technical education programs. Many districts and states believe that new career-technical programs cost more than the regular program and even more than traditional vocational classes. However, in a review conducted for a Wisconsin school finance adequacy task force, a national expert on career-technical education (Phelps, 2006) concluded that the best of the new career-technical programs did not cost more, especially if the district and state made adequate provisions for professional development (as teachers in these new programs needed training) and computer technologies (as computer technologies were heavily used). These conclusions generally were confirmed by the cost analysis we conducted of Project Lead the Way (PLTW), one of the most highly rated and allegedly "expensive" career technical programs in the country. We presented our findings to Wyoming as part of the 2010 recalibration (Odden & Picus, 2010).

PLTW (**www.pltw.org**) is a nationally recognized exemplar for secondary CTE education. Often implemented jointly with local postsecondary education institutions and employer advisory groups, these programs usually feature project- or problem-based learning experiences, career planning and guidance services, and technical and/or academic skills assessments. Through hands-on learning, the programs are designed to develop the science, technology, engineering and mathematics (STEM) skills essential for achievement in the classroom and success in college or jobs not requiring a four-year college education. Today, PLTW is offered in more than 5,000 elementary, middle and high schools in all 50 states and enrolled over 500,000 students.

The curriculum features rigorous, in-depth learning experiences delivered by certified teachers and end-of-course assessments. High-scoring students earn college credit recognized in more than 100 affiliated postsecondary institutions. Courses focus on engineering foundations (design, principles, and digital electronics) and specializations (e.g., architectural and civil engineering, bio-technical engineering) that provide students with career and college readiness competencies in engineering and science. Students need to take math through Algebra 2 in order to handle the courses in the program, which also meets many states' requirements for science and other mathematics classes.

The major cost areas for the program are in class size, professional development and computer technologies. Most programs recommend class sizes of 25, a figure larger than provided for high school students by the Wyoming Funding Model. The professional development and most of the

computer technology costs are covered through the professional development and technology components of the model. In most other states, these would be new costs but they are already embedded in the Wyoming school funding system. However, a few of the PLTW concentration areas require a one-time purchase of expensive equipment, which can be covered by the $9,623 per career-technical education teacher in the Wyoming Funding Model.

Resource Use Analysis

Analysis of vocational education teaching positions is discussed in Element 5 above. The funding model allocates a total of $2,801,658 to the districts for vocational education supplies and equipment. The districts spent 55.9% of that amount, or $1,236,738 in 2012-13. Four districts spent more than was allocated, 43 less, and one had no allocation and did not report any expenditures.

21. Extra Duty Funds/Student Activities

Elementary, middle and high schools typically provide an array of non-credit producing after-school programs, such as clubs, bands, sports, and other activities. Teachers supervising or coaching in these activities usually receive small stipends for these extra duties.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
$308.04 per ADM.	Funded at grade-band level, by school. For grades K-5, provide an amount equal to $24.23 per student. For grades 6-12, use inverse sliding scales based on student enrollment for middle (grades 6-8) and high (grades 9-12) school grades levels. Middle school funding levels range from $796.95 for 1 ADM and $205.90 per ADM for a school of 1,260 ADM. High school funding levels range from $2,054.39 for 1 ADM and $605.59 per ADM for a school of 1,260 ADM. Alternative schools receive an amount equal to $291.15 per ADM.	$5,535,663	Recalibrate

Analysis and Evidence

Research shows, particularly at the secondary level, that students engaged in student activities tend to perform better academically than students not so engaged (Feldman & Matjasko, 2005),

although too much extra-curricular activity can be a detriment to academic learning (Committee on Increasing High School Students' Engagement and Motivation to Learn, 2004; Steinberg, 1996, 1997). Feldman and Matjasko (2005) found that participation in interscholastic (as compared to intramural) sports had a positive impact for both boys and girls on: grades, post secondary education aspirations, reducing drop out rates, lowering alcohol and substance abuse, and led to more years of schooling. The effect was particularly strong for boys participating in interscholastic football and basketball. One reason for these impacts is that participation in interscholastic athletics placed students in new social groups that that tended to have higher scholastic aspirations and those aspirations "rubbed off" on everyone. But the effects differed by race and gender, and were not as strong for African Americans.

During the past several years, the EB model has allocated between $200 and $300 per pupil for student activities, including inter-mural sports. These figures are in line with average amounts spent on such activities in many states. However, Wyoming presents a special case because of its many small districts and schools, which face much higher costs in mounting interscholastic sports. Further, as the resource use analysis below shows, districts spend more on student activities than is currently provided in the Legislature's funding model. Therefore, this model component should be subject to a more formal recalibration in 2015.

Resource Use Analysis

In 2012-13 the funding model allocated a total of $37,730,1331 to districts for student activities. Ten districts spent less than their model funding level and the other 38 spent more than the model provided. Overall, districts spent 121.0% of the model allocation or a total of $6,549,687 more. The CRERW report shows that over time the allocation for student activities has declined somewhat since 2009-10 (likely a function of school enrollments as overall ADM increases), but that expenditures for student activities have continued to grow over that time frame.

CENTRAL OFFICE FUNCTIONS

In addition to school-based resources, education systems also need resources for district level expenditures including operations and maintenance, the central office and transportation. These are outlined below.

22. Operations and Maintenance

Computation of operations and maintenance costs is complicated by the lack of a strong or consistent research base. Some models allocate a percentage of current expenditures to operations and maintenance. The EB model uses formulas to compute the number of personnel needed *at the school level* for custodial, maintenance and grounds work and Wyoming uses those formulas to estimate staffing for operations and maintenance costs

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Separate computations for custodians, maintenance workers and groundskeepers as outlined in the analysis and evidence section below	Same as EB recommendation	$0	Recalibrate

Analysis and Evidence

Drawing on professional standards in the field as well as research, we have recently conducted analyses of the cost basis for maintenance and operations (e.g., Picus & Odden, 2010; Picus & Seder, 2010). The discussion below summarizes our research on operations and maintenance, identifying the needs for custodians (school level), maintenance staff (district level) and groundskeepers (school and district level), as well as the costs of materials and supplies to support these activities.

Custodians: Custodians are responsible for the daily cleaning of classrooms and hallways as well as for routine furniture set ups and takedowns. In addition, custodians often manage routine and simple repairs like minor faucet leaks, and are expected to clean cafeterias/multipurpose rooms, lockers and showers. Custodial workers' duties are time-sensitive, are structured and varied. Zureich (1998) estimates the time devoted to various custodial duties:

- Daily duties (sweep or vacuum classroom floors; empty trash cans and pencil sharpeners in each classroom; clean one sink with faucet; and, security of room), which take approximately 12 minutes per classroom.
- Weekly duties (dust reachable surfaces; dust chalk trays and clean doors; clean student desk tops; clean sink counters and spots on floors; and, dust chalk/white boards and trays), each of which adds 5 minutes a day per classroom.

- In addition to these services, non-cleaning services (approximately 145 minutes per day) provided by custodians include: opening school (checking for vandalism, safety and maintenance concerns), playground and field inspection, miscellaneous duties (teacher/site-manager requests, activity set-ups, repairing furniture and equipment, ordering and delivering supplies), and putting up the flag and PE equipment.

A formula that takes into consideration these cleaning and non-cleaning duties has been developed and updated by Nelli (2006). The formula takes into account teachers, students, classrooms and Gross Square Feet (GSF) in the school. The formula is:

- 1 Custodian for every 13 teachers, plus
- 1 Custodian for every 325 students, plus
- 1 Custodian for every 13 classrooms, plus
- 1 Custodian for every 18,000 Gross Square Feet (GSF), and
- The total divided by 4.

The formula calculates the number of custodians needed at prototypical schools. The advantage of using all four factors is that it accommodates growth or decline in enrollment and continues to provide the school with adequate coverage for custodial services over time.

Maintenance Workers: Maintenance workers function at the district level, rather than at individual schools. Core tasks provided by maintenance workers include preventative maintenance, routine maintenance and emergency response activities. Individual maintenance worker accomplishment associated with core tasks are: (a) HVAC systems, HVAC equipment, and kitchen equipment; (b) Electrical systems, electrical equipment; (c) Plumbing systems, plumbing equipment; and, (d) Structural work, carpentry and general maintenance/repairs of buildings and equipment (Zureich, 1998).

Zureich (1998) recommends a formula for maintenance worker FTEs incorporated into the funding model for instructional facilities as follows:

[(# of Buildings in District) x 1.1 + (GSF/60,000 SqFt) x
1.2 + (enrollment/1,000) x 1.3
+ General Fund Revenue/5,000,000) x 1.2] / 4
= Total number of Maintenance Workers needed.

Maintenance and Custodial supplies are estimated at $0.70 per gross square foot. The school gross square feet are 606,381 plus an estimated 10 percent more for the central office, bringing total district gross square footage to 667,019 and the cost of materials and supplies to $466,913 or $116.73 per student.

The Florida Department of Education has released a new set of facilities guidelines that discuss custodial and maintenance personnel and are based largely on the Zureich materials that guided development of the Wyoming model in 2005. The guidelines are similar to, but not exactly the same as those developed for Wyoming. A recalibration of the maintenance standards would lead to consideration of these (and potentially other standards identified through sources such as

ASBO) standards. In addition recalibration should consider the portion of the formula that relies on district general fund revenues divided by $5,000,000 to see if either of those numbers need to be revised, or if that part of the computation is required any more.

Grounds Maintenance: The typical goals of a school grounds maintenance program are generally to provide safe, attractive, and economical grounds maintenance (Mutter & Randolph, 1987). This, too, is a district level function. We have estimated that an elementary school needs 62 days per years of groundskeeper support, a middle school 140 days and a high school 388 days per year. One of the issues that should be addressed in the recalibration is how to address the large open acreage owned by a small number of districts that has a tendency in the current model to generate a large number of groundskeeper positions. This acreage typically does not require a great deal of maintenance suggesting recalibration could more accurately estimate the number of groundskeepers needed if this were taken into consideration.

Utilities: It is necessary to add the per student costs of utilities to these totals. It is unlikely that a district has much control over these costs in the short run and thus each district can best estimate future costs using their current expenditures for utilities and insurance as a base. The Legislature's funding model provides resources for utilities based on actual expenditures in 2009 adjusted by an ECA and increased for new square footage as it is built up in school districts.

Resource Use Analysis

This section first considers operations and maintenance expenditures and then provides an analysis of utility expenditures by the state's school districts. The discussion of operations and maintenance includes both expenditures for salaries and for non-staff resources.

The CRERW combines district expenditures for operations and maintenance and operations staff with expenditures for operations and maintenance supplies and equipment because it was hard to separate the two in district reports, and because in many cases districts contract for some of these services so staff and spending comparisons across districts are impossible.

For 2012-13, the Wyoming Funding Model allocated $94,298,030 to the state's school districts for maintenance and operations. Districts overall spent 97.6% of that amount or $92,046,498. Fourteen districts spent more than the model allocation, with the largest overspending amounting to 130.4% of the model allocation. The remaining 34 districts spent less than the model allocation, with the lowest ratio of spending to model allocation being 57.5%.

The model assumes an average salary of $32,810 for maintenance and operations personnel, while districts paid operations and maintenance personnel an average salary of $35,211 in 2012-13, some 7.3% or $2,402 above the model funded average. That year, districts employed 1,298.8 operations and maintenance personnel, 208.8 fewer than the 1,597.6 funded through the model.

Utilities are funded on the basis of actual utility expenditures in a base year adjusted by an inflation factor, recently one focused specifically on the cost of utilities. For 2012-13, total allocations for utilities were $35,11,860. Districts spent $1,024,282 more than that allocation or 103.0% of the model resources. Thirty districts spent more than the model, with one district

spending 128.5% of its utility allocation, while 18 districts spent less then the model, with one spending 76.5% of its allocation.

23. Central Office Staffing/Non-Personnel Resources

All districts require central office staff to meet the overall management needs of the educational programs. Determining an adequate staffing level for very small districts is challenging, and in the past, the Wyoming Model has been relatively generous in the number of staff it provides. In other states, we have developed evidence based staffing models using a prototypical district of approximately 3,900 students. In most instances, when prorated down for smaller districts fewer staff result than are currently allocated through the Wyoming Funding Model.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Less than 500 ADM – 3 administrative and 3 classified position Between 501 and 1,000 ADM – 4 administrative and 4 classified positions Beyond 1,000 ADM, provide 1 additional administrator position for every 833 ADM and provide 1 additional classified position for every 500 ADM.	Less than 500 ADM – 3 administrative and 3 classified position Between 501 and 1,000 ADM – 4 administrative and 4 classified positions Beyond 1,000 ADM, provide 1 additional administrator position for every 625 ADM and provide 1 additional classified position for every 417 ADM.	$3,834,851	A per pupil amount calculated from a 3,900-student prototypical school district. This is prorated to districts with 1,000 students. From 1000 to 400 students funding should remain at the level of funding for the central office of a 1,000 student district. This would generate approximately 2 administrative and 2.5 secretarial positions. From 400 to 200 students, the positions should be prorated down to1 professional and 1 secretarial position, and remain at that level for smaller districts. Recalibrate
Provide an amount equal to $373.38 per ADM for non-personnel resources	Provide an amount equal to $352.91 per ADM for non-personnel resources	Small difference combined with other estimates in LSO analysis	Precise dollar figures during 2015 recalibration

Analysis and Evidence

We have identified resources for central office staff in our EB reports for other states. The most recent states in which we have comparable data are Texas, North Dakota, Kentucky and Maine. Our approach has remained relatively stable, estimating the number of central office staff required to lead and manage a prototypical district of 3,900 students. Wyoming's model would generate slightly more central office staff in a 3,900-student district than are generated through the current EB model. This is shown in the table below comparing our current model to a Wyoming school district with 3,900 students. However, as we prorate our staffing positions down to smaller school districts using a dollars per pupil figure, it is unlikely that the allocations of funds we estimate as adequate would be enough to hire the number of central office staff in the Wyoming Funding Model. This is particularly true in the smallest Wyoming districts and in Wyoming districts with just over 500 ADM. Even though current spending exceeds the Wyoming Funding Model allocations, which in smaller districts is much higher than the EB model, we recommend review if not recalibration of this element of the model, for both personnel and non-personnel resources.

Comparison of EB Central Office Staffing with Current Wyoming Policy for a District with 3,900 students

Office and Position	FTE			
	EB Model		Wyoming Funding Model	
	Admin.	Classified	Admin.	Classified
Superintendent's Office				
Superintendent	1			
Secretary		1		
Business Office				
Business Manager	1			
Director of Human Resources	1			
Accounting Clerk		1		
Accounts Payable		1		
Secretary		1		
Curriculum and Support				
Assistant Supt. for Instruction	1			
Director of Pupil Services	1			
Dir. of Assessment and Evaluation	1			
Secretary		3		
Technology				
Director of Technology	1			
Computer Technician		1		
Secretary		1		
Operations and Maintenance				
Director of O&M	1			
Secretary		1		
Wyoming Staffing (3,900 Students)	***8***	***10***	***8.64***	***10.95***

Resource Use Analysis

In 2012-13, the Wyoming Funding Model generated 277.2 central office administrative positions, while districts employed 40.8 more central office administrators for a total of 317.9. Twenty-nine districts employed more central office administrators than funded through the model, while the remaining 17 employed fewer central office administrators.

In addition, the districts employed 353.8 district level secretarial/clerical staff, some 43.6 more than the 314.8 generated through the model. There were two districts that hired the number of such staff generated through the model, while 22 employed more and 24 fewer secretarial/clerical positions at the district level.

The table below shows the difference between the model salary and the average actual salary for central office staff in 2012-13.

Comparison of District Average Salaries with Funding Model Average Salaries

Position	District Average Salary ($)	Funding Model Average Salary ($)	Difference ($)	Percent Difference (%)
Superintendent	132,989	106,893	26,097	24.4
Asst. Supt.	123,724	85,514	38,210	44.7
Business Manager	89,304	72,079	17,225	23.9
Secretary/Clerical	32,623	30,742	1,881	6.1

Source: CRERW

24. Transportation

Wyoming provides 100% reimbursement of approved (to and from school and approved activities) transportation costs and we do not have any recommendation to change that.

25. Food Services

Both the EB model and the Wyoming legislature assume this is a self-supporting function and thus no additional resources are provided.

RESOURCES FOR STRUGGLING STUDENTS

The core staffing section of this document contains positions for supporting teachers and students beyond the regular classroom core teacher. Those positions include elective or specialist teachers, tutors and pupil support personnel. However in many instances, *additional* support for struggling students are needed. The programs described in this section extend the learning time for struggling students in focused ways. The key concept is to implement the maxim of standards-based education reform: keep standards high for all students but vary the instructional time so all students can achieve to proficiency levels. The EB elements for extra help are also embedded in the "response to intervention" schema described at the beginning of this chapter.

It is important to note that we use two specific counts of pupils. This is currently the practice in Wyoming as well.

1. For programs that use an "at risk" count, the EB model includes the unduplicated count of students eligible for free and reduced price lunch as well as all ELL students who are not free and reduced price lunch eligible. Wyoming's at-risk pupil count also includes mobile students in grades 6-12 who are neither ELL or free and reduced price lunch. We have followed the Wyoming practice of using an unduplicated at-risk student count to ensure that all ELL students and in Wyoming all mobile students, regardless of poverty status, are eligible for the extra help strategies that most if not all ELL and mobile students need as they work to learn both content and a new language – English.

2. For the ELL program, we use the count of all ELL students regardless of free and reduced price lunch or mobility status.

The EB model provides substantial additional resources for students based on the at-risk student counts – tutoring, extended day, summer school, and pupil support. These resources for students struggling to achieve to academic standards should be viewed in concert with resources for students with identified disabilities. Districts sometimes over identify students for special education services as the "only" way to trigger more resources for some struggling students. The EB goal in expanding resources for struggling students triggered by at-risk counts is to provide adequate resources for all struggling students, with or without a diagnosed disability, and to reduce over identification in special education.

This section includes discussion of seven categories of services: tutoring, additional pupil support, extended day, summer school, programs for ELL students, Alternative Schools, and special education.

26. Tutors

The first strategy to help struggling students is to provide additional support for struggling students as described in Element 8 above. In addition to the one core tutor position provided to every prototypical school discussed above for Element 8, the EB Model provides additional tutor position at the rate of one for every 125 at-risk students.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1 tutor position for every 100 at-risk students, with a minimum of one tutor position in each prototypical school	1 tutor position for every 100 at-risk students, with a minimum of one tutor position in each prototypical school	$0	One tutor position for every 125 at risk students (in addition to the one tutor position in each prototypical school) These positions are provided additional days for professional development (Element 16) and substitute days (Element 9) discussed above. Recalibrate This is a revised EB recommendation

Analysis and Evidence

Refer to Element 8 for an explanation of analysis and evidence surrounding the use of tutors.

Resource Use Analysis

Wyoming school districts do not employ tutors in nearly the numbers generated through the model. There are 235.7 tutors across the state. This is only 76.6% of the 369.1 tutors allocated to districts through the funding model.

Two of the districts employ more tutors than allocated in the model, while 45 employ fewer tutors and one district is allocated zero tutors and does not employ any.

The count of tutors is confounded somewhat by the fact that districts also report a position called "teachers not of record" and some districts may be reporting some tutors in that category. A total of 76.6 teachers are reported in this category state-wide, and if it were assumed that all of them were serving in the role of tutor (an unlikely occurrence), then six more districts (for a total of 8)

would employ more tutors than allocated under the model, and 39 would employ fewer tutors. Even then, the model would generate 56.8 more tutors statewide than are employed by the districts.

This analysis shows that district practices with respect to tutors is not aligned with the Legislatures funding model, i.e., districts use fewer tutors or Tier 2 interventionists than the model provides. Since extra help for struggling students, is critical to educate all students to proficient or higher performance levels, the resources for such extra help should be fully utilized. During the 2015 recalibration, the legislature should consider incentives for districts to provide struggling students extra help. Holding performance standards constant and varying instructional time is a key strategy for ensuring all students are able to meet higher standards.

27. Pupil Support

Core pupil support positions for guidance counselors and nurses are discussed above in core resources as Element 10. At-risk students, however, generally have more non-academic needs that should be addressed by additional pupil support staff, which include additional guidance counselors, as well as social workers, family liaison staff, and psychologists. Thus, in addition to the core guidance counselor and nurse positions provided to every prototypical school discussed above for Element 10, the EB Model provides additional pupil support positions at the rate of one for every 125 at-risk students.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1 pupil support position for every 100 at-risk students, with a minimum of 1 position for each prototypical elementary, middle and high school, resourced at the highest-grade prototype using the total school ADM.	1 pupil support position for every 100 at-risk students, with a minimum of 1 position for each prototypical elementary, middle and high school, resourced at the highest-grade prototype using the total school ADM.	$0	One pupil support position for every 125 at-risk students These positions are provided additional days for professional development (Element 16) discussed above. Recalibrate This is a revised EB recommendation

Analysis and Evidence

At-risk students tend to have more non-academic issues for schools to address. This usually requires interactions with families and parents as well as perhaps more guidance counseling in school. The EB model addresses this by providing more staffing resources to meet these needs. Although there are many ways schools can provide outreach to parents, or involve parents in school activities – from fund raisers to governance – research shows that school sponsored

programs that have an impact on achievement address what parents can do at home to help their children learn. For example, if the education system has clear content and performance standards, such as the new college and career ready standards, programs that help parents and students understand both what needs to be learned and what constitutes acceptable standards for academic performance have been found to improve student outcomes. Parent outreach that explicitly and directly addresses what parents can do to help their children be successful in school, and to understand the standards of performance that the school expects, are the types of school-sponsored parent activities that produce discernible impacts on students academic learning (Steinberg, 1997).

At the secondary level, the goal of parent outreach programs is to have parents learn about what they should expect of their children in terms of academic performance. If a district or a state requires a minimum number of courses for graduation, such as Wyoming's high school graduation and Hathaway scholarship requirements, those requirements should be made clear. Any differences between the two also should be addressed. If either average scores on end-of-course examinations or a cut-score on a comprehensive high school test are required for graduation, they too should be discussed. Secondary schools need to help parents understand how to more effectively assist their children in identifying an academic pathway through middle and high school, understand standards for acceptable performance, and be aware of the course work necessary for college entrance. This is particularly important for parents of students in the middle or lower end of the achievement range, as often these students know very little of the requirements for transition from high school to post-secondary education (Kirst & Venezia, 2004).

At the elementary level, the focus for parent outreach and involvement programs should concentrate on what parents can do at home to help their children learn academic work for school. Too often parent programs focus on fund raising through parent-teacher organizations, involvement in decision making through school site councils, or other non-academically focused activities at the school site. Although these school-sponsored parent activities might impact other goals – such as making parents feel more comfortable being at school or involving parents more in some school policies – they have little effect on student academic achievement. Parent actions that impact learning would include: 1) reading to them at young ages, 2) discussing stories and their meanings, 3) engaging in open ended conversations, 4) setting aside a place where homework can be done, and 5) ensuring that their child completes homework assignments.

The resources in the EB and current Wyoming Funding Model are adequate to create and deploy the ambitious and comprehensive parent involvement and outreach programs that are part of two comprehensive school designs: Success for All and the Comer School Development Program. The Success for All Program includes a family outreach coordinator, a nurse, social worker, guidance counselor and education diagnostician for a school of about 500 students. This group functions as a parent outreach team for the school, serves as case managers for students who need non-academic and social services, and usually includes a clothing strategy to ensure that all students, especially in cold climates, have sufficient and adequate clothes, and coats, to attend school.

The Comer School Development Program was created on the premise of connecting schools more to their communities. Its Parent-School team has a somewhat different composition and is focused on training parents to raise expectations for their children's learning, to work with social service agencies and to work with the school's faculty to raise their expectations for what students can learn. Sometimes the team co-locates on school site premises to provide a host of social services

A program called Communities in Schools, which now operates in 26 states and the District of Columbia and can be resourced by the resources provided by this Model Component, has been successful in raising school attendance rates as students need to attend school in order to learn. The program adds a caseworker, often trained in social work, to a school's pupil support team to help match social services provided by non-educational agencies to students who need them.

Resource Use Analysis

Allocation of pupil support personnel in relation to model allocations is described above in Element 10.

28. Extended-day programs

At both elementary and secondary school levels, some struggling students are likely to benefit from after-school or extended-day programs, even if they receive Tutoring/Tier 2 interventions during the regular school day. Extended day programs are an environment for children and adolescents to spend time after the school day ends during the regular school year.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1.0 teacher position for every 30 at-risk students or 3.33 FTE per 100 such students. Position paid at the rate of 25 percent of annual salary—enough to pay a teacher for a 2-hour extended-day program, 5 days per week. This formula equates to 1 teacher position for every 120 at-risk students.	For both extended day and summer, funding provided outside of block grant and in form of a categorical grant at an amount equal to a 0.15 teacher FTE for every 30 at-risk students for both summer school and extended day programs. A minimum 0.50 FTE is provided for school districts that do not generate that amount based upon the district's at-risk count.	-$8,979,455 including both extended day and summer school	No change from 2010 recommendation. Recalibrate

Analysis and Evidence

In a review of research, Vandell, Pierce and Dadisman (2005) found that well designed and administered after-school programs yield numerous improvements in academic and behavioral outcomes (see also Fashola, 1998; Posner & Vandell, 1994). On the other hand, the evaluation of the 21st Century Community Learning Centers (CCLC) Program (James-Burdumy et al., 2005), though hotly debated, indicated that for elementary students, extended day programs did not appear to produce measurable academic improvement. Critics of this study (Vandell, Pierce & Dadisman, 2005) argued that the control groups had higher pre-existing achievement, which reduced the potential for finding program impact. They also argued that the small impacts that were identified had more to do with lack of full program implementation during the initial years than with the strength of the program.

Overall, studies have documented positive effects of extended day programs on the academic performance of students in select after-school programs (e.g., Takoata & Vandell, 2013: Vandell, 2014). However, the evidence is mixed both because of research methods (few randomized trials), poor program quality and imperfect implementation of the programs studied. Researchers have identified several structural and institutional supports necessary to make after-school programs effective:

- Staff qualifications and support (staff training in child or adolescent development, after-school programming, elementary or secondary education, and content areas offered in the program, staff expertise; staff stability/turnover; compensation; institutional supports)
- Program/group size and configuration (enrollment size, ages served, group size, age groupings and child staff ratio) and a program culture of mastery
- Consistent participation in a structured program
- Financial resources and budget (dedicated space and facilities that support skill development and mastery, equipment and materials to promote skill development and mastery; curricular resources in relevant content areas; location that is accessible to youth and families
- Program partnerships and connections (with schools to connect administrators, teachers and programs; with larger networks of programs, with parents and community)
- Program sustainability strategies (institutional partners, networks, linkages; community linkages that support enhanced services; long term alliances to ensure long term funding).

The resources recommended in the EB model could be used to provide struggling students in all elementary grades and in secondary schools with additional help during the school year but before or after the normal school day. Because not all at-risk students need or will attend an after school program, the EB model assumes 50 percent of the eligible at-risk students will attend the program – a need and participation figure identified by Kleiner, Nolin and Chapman (2004). As a result providing resources at a rate of 1 FTE teacher to 30 at-risk students will result in class sizes of approximately 15 in extended day programs.

The state should monitor over time the degree to which the estimated 50 percent figure accurately estimates the numbers of students needing extended-day programs. We also encourage Wyoming to require districts to track the students participating in the programs, their

pre- and post-program test scores, and the specific nature of the after school program provided, to develop a knowledge base about which after-school program structures have the most impact on student learning. We recognize that how these extended day services are provided will vary across Wyoming's school districts, and that any monitoring of the impacts of these resources should focus more on impacts on student performance than the strategy for providing the services. We also found that most of the schools we studied in other states that improved student performance had various combinations of before and after school extra help programs.

Resource Use Analysis

The CRERW does not report expenditures or position counts for extended day programs, so it is not known how district expenditures compare to current funding

29. Summer School

Many students need extra instructional time to achieve the state's high proficiency standards. Thus, summer school programs should be part of the set of programs available to provide struggling students the additional time and help they need to achieve to standards and earn academic promotion from grade to grade (Borman, 2001). Providing additional time to help all students master the same content is an initiative that is grounded in research (National Education Commission on Time and Learning, 1994). It should be noted that summer school services are provided outside of the regular school year.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1.0 teacher position for every 30 at-risk students or 3.33 FTE per 100 such students. Position paid at the rate of 25 percent of annual salary—enough to pay a teacher for a six to eight week 4 hour per day summer school program and include adequate time for planning and grading This formula equates to 1 teacher position for every 120 at-risk students.	For both extended day and summer, funding provided outside of block grant and in form of a categorical grant at an amount equal to a 0.15 teacher FTE for every 30 at-risk students for both summer school and extended day programs. A minimum 0.50 FTE provided for school districts that do not generate that amount based upon the district's at-risk count.	-$8,979,455 included both extended day and summer school	No change from 2010 recommendation. Recalibrate

Analysis and Evidence

Research dating back to 1906 shows that students, *on average*, lose a little more than a month's worth of skill or knowledge over the summer break (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). Summer breaks have a larger deleterious impact on poor children's reading and mathematics achievement. This loss can reach as much as one-third of the learning during a regular nine-month school year (Cooper et al., 1996). A longitudinal study by Alexander and Entwisle (1996) showed that these income-based summer learning differences *accumulate* over the elementary school years, such that poor children's achievement scores – without summer school – fall further and further behind the scores of middle class students as they progress through school grade by grade. As a result of this research, there is emerging consensus that what happens (or does not happen) during the summer can significantly impact the achievement of students from low-income and at-risk backgrounds, and help reduce (or increase) the poor and minority achievement gaps in the United States.

However, evidence on the effectiveness of summer programs in attaining either of these goals is mixed. Although past research linking student achievement to summer programs shows some promise, several studies suffer from methodological shortcomings and the low quality of the summer school programs themselves (Borman & Boulay, 2004).

A meta-analysis of 93 summer school programs (Cooper, Charlton, Valentine, & Muhlenbruck, 2000) found that the average student in summer programs outperformed about 56% to 60% of similar students not receiving the programs. However, the certainty of these conclusions is compromised because only a small number of studies (e.g., Borman, Rachuba, Hewes, Boulay & Kaplan, 2001) used random assignment, and program quality varied substantially. More recent *randomized controlled trial* research of summer school reached more positive conclusions about how such programs can positively impact student learning (Borman & Dowling, 2006; Borman, Goetz & Dowling, 2009). Indeed, Roberts (2000) found an effect size of 0.42 in reading achievement for a *randomized sample* of 325 students who participated in the Voyager summer school program.

Researchers (see also McCombs, et al., 2011) note several program components related to improved achievement effects for summer program attendees, including:

- Early intervention during elementary school
- A full 6-8 week summer program
- A clear focus on mathematics and reading achievement, or failed courses for high school students
- Small-group or individualized instruction
- Parent involvement and participation
- Careful scrutiny for treatment fidelity, including monitoring to ensure good instruction in reading and mathematics is being delivered, and
- Monitoring student attendance.

Summer programs that include these elements hold promise for improving the achievement of at-risk students and closing the achievement gap. Indeed, the most recent review of the effects of summer school programs reached this same conclusion (Kim & Quinn, 2013). Their meta-analysis of 41 school- and home-based summer school programs found that K-8 students who

attended summer school programs with teacher directed literacy lessons showed significant improvements in multiple areas including reading comprehension. Moreover, the effects were much larger for students from low-income backgrounds.

In sum, research generally suggests that summer school is needed and can be effective for at-risk students. Studies suggest that the effects of summer school are largest for elementary students when the programs emphasize reading and mathematics, and for high school students when programs focus on courses students failed during the school year. The more modest effects frequently found in middle school programs can be partially explained by the emphasis in many middle school summer school programs on adolescent development and self-efficacy, rather than academics.

Because summer school can produce powerful impacts, the EB model provides resources for summer school for classes of 15 students, for 50 percent of all at-risk students in all grades K-12, an estimate of the number of students still struggling to meet academic requirements (Capizzano, Adelman & Stagner, 2002). The model provides resources for a program of eight weeks in length, class sizes of 15 students, and a six-hour day, which allows for four hours of instruction in core subjects. A six-hour day would also allow for two hours of non-academic activities. The formula would be one FTE position for every 30 at-risk students or 3.33 per 100 such students. Because not all at-risk students will need or will attend a summer school program, the EB model assumes 50 percent of the eligible at-risk students will attend the program – a need and participation figure identified by Kleiner, Nolin and Chapman (2004). As a result, providing resources at a rate of 1 FTE teacher to 30 at-risk students produces class sizes of approximately 15 in summer school programs. Although a summer school term of 6-8 weeks will have fewer hours than five day a week extended day programs, the EB resources summer school programs at the same rate as extended day programs to allow for teacher planning time for the summer school program – something that is less needed in extended day programs. Simplified, the EB summer school formula equates to 1 teacher position for every 120 at-risk students.

Resource Use Analysis

The CRERW does not report expenditures or position counts for summer school programs. The WDE reports that in 2012-13, 47 of the 48 districts received and spent funds for summer school. Overall revenues amounted to $12,532,594, and expenditures were $3,787 less at $12,536,381. There was more variation among the individual districts: 21 reported spending less than they received in revenue, while 24 reported spending more than their summer school revenue and two reported spending exactly what they received for summer school. One district spent $190,633 less than it received and another spent $200,062 more than it received for summer school.

30. English Language Learner (ELL) Students

Research, best practices and experience show that English language learners (ELL) need assistance to learn English, in addition to instruction in the regular content classes. This can include some combination of small classes, English as a second language classes, professional development for teachers to help them teach "sheltered English classes, and "reception" centers

for districts with large numbers of ELL students who arrive as new immigrants to the country and the school throughout the year.

ELL is a separate program from the at-risk programs described above in the sections on tutors, extra pupil support, extended day and summer school. Funding is provided for *all* ELL students for these additional services regardless of free and reduced price lunch status.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
1.0 teacher position for every 100 identified ELL students.	1.0 teacher position for every 100 identified ELL students.	$0	No change from 2010 recommendation. No need for a formal recalibration.

Analysis and Evidence

Good ELL programs work, whether the approach is structured English immersion (Clark, 2009) or initial instruction in the native language, often called bilingual education. However, bilingual education is difficult to provide in most schools because students come from so many different language backgrounds. Nevertheless, bilingual programs have been studied intensively. A best-evidence synthesis of 17 studies of bilingual education (Slavin & Cheung, 2005) found that ELL students in bilingual programs outperformed their non-bilingual program peers. Using studies focused primarily on reading achievement, the authors found an effect size of +0.45 for ELL students. A more recent *randomized controlled trial* also produced strong positive effects for bilingual education programs (Slavin, et al., 2011), *but* concluded that the language of instruction is less important than *the approaches taken to teach reading*.

Addressing that important issue in *The Elementary School Journal*, Gerstein (2006) concludes that ELL students can be taught to read in English if, as shown for monolingual students, the instruction covers phonemic awareness, decoding, fluency, vocabulary and reading comprehension. Gersten's studies also showed that ELL students benefit from instructional interventions initially designed for monolingual English speaking students, the resources for which are included above in the four at-risk student triggered programs: tutoring, extended day, summer school and additional pupil support.

Beyond the provision of additional teachers to provide English as a second language instruction to students, however, research shows that ELL students need a solid and rigorous core curriculum as the basis from which to provide any extra services (Gandara & Rumberger, 2008; Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003). This research suggests that ELL students need:

- Effective teachers – a core goal of all the staffing in this report
- Adequate instructional materials (Element 17) and good school conditions
- Good assessments of ELL students so teachers know in detail their English language reading and other academic skills (Element 18)

- Less segregation of ELL students
- Rigorous and effective curriculum and courses for all ELL students, including college and career ready, and affirmative counseling of such students to take those courses
- Professional development for all teachers, focusing on sheltered English teaching skills, (Element 16)

Hakuta (2011) supports these conclusions and also notes that English language learning takes time (one reason the EB model includes the above resources for every grade level) and that "academic language" is critical to learning the new Common Core Standards. The new standards require more explicit and coherent ELL instructional strategies and extra help services if these are to be effective at ensuring that ELL students learn the subject matter, English generally, and academic English specifically – learn how to read content texts in English. Most also would agree that if this instruction requires smaller regular classes, those are already provided by the Wyoming Funding Model.

However, additional teaching staff are needed to provide English as a Second Language (ESL) instruction during the regular school day, such as having ELL students take ESL in lieu of an elective course. Although the potential to eliminate some elective classes exists if there are large numbers of ELL students who need to be pulled out of individual classrooms, it is generally agreed that to fully staff a strong ESL program each 100 ELL students should trigger one additional FTE teaching position. This makes it possible to provide additional instructional opportunities for ELL students to provide an additional dose of English instruction. The goal of this programming is to reinforce ELL student learning of academic content *and* English so at some point the students can continue their schooling in English only.

Research shows that it is the Limited English proficient, or English language learners (ELL), from lower income and generally less educated backgrounds who struggle most in school and need extra help to learn both academics and English. The EB and the Wyoming Funding Model address this need by making sure that the ESL resources triggered by just ELL pupil counts are *in addition* to other Tier 2 intervention resources including tutoring, additional pupil support, extended day and summer school resources as well as the pupil support staff (Elements 26-29),

For example, a prototypical school with 125 at-risk students and no ELL students would receive 1.0 core teacher and pupil support staff, and in addition, approximately 1.0 tutor position, 1.0 extended day, 1.0 summer school and 1.0 additional pupil support resources. But if the 125 at-risk children were all ELL students, the school would receive an *additional* 1.25 teacher positions primarily to provide ESL instruction.

Given these realities, it is more appropriate to view the EB and Wyoming approach to extra resources for ELL students as including both resources for students from at-risk backgrounds (unduplicated free and reduced price lunch, ELL and in Wyoming, mobile student counts) and ESL specific resources (Jimenez-Castellanos & Topper, 2012). That is why the EB model today uses the Wyoming approach and augments the at-risk student count to include the "unduplicated" count of students who are either free and reduced price lunch eligible or ELL (which has long been the Wyoming practice). Wyoming also includes mobile students in its

count of at risk students. This ensures that all ELL students trigger the extra resources for the Tier 2 interventions as well as the resources for ESL instruction.

Resource Use Analysis

The CRERW report does not indicate how districts use ELL funds, but does note that the ELL population in Wyoming has grown to three percent of student enrollment.

31. Alternative Schools

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
No separate formula; assumes all alternative schools have 49 or fewer students and thus qualify for the small school formula of 1 AP plus 1 teacher position for every 7 students.	Provide funding for all staff at a ratio of 1 assistant principal and 1 teacher position for every 7 students.	-$88,082	No change from 2010 recommendation. Recalibrate

Analysis and Evidence

A small number of students have difficulty learning in the traditional school environment. The ALE students this report addresses are those that also have some combination of significant behavioral, social and emotional issues, often also including alcohol or drug abuse. Such students often do much better in *small* "alternative learning environments." However, we note that this rationale for ALE does not consider alternative schools for students who simply prefer a different approach to learning academics, such as project-based learning, or more applied learning strategies that can be deployed in new career technical programs such as computer assisted engineering, etc. The EB concept of Alternative Schools, which we believe is also the state's concept, is for "troubled" youth who need counseling and therapy embedded in the school's instructional program.

The Institute for Education Sciences at the U.S. Department of Education published statistics on Alternative Schools and Programs for the 2007-08 school year (Carver & Lewis, 2010). That study identified 558,300 students in 10,300 district administered alternative education schools and programs across the United States. Although the report did not provide data on the size of these schools or on staffing ratios, the data above suggest an average alternative school size of 54 students. Most of the programs served students in grades 9-12. The main reasons students were enrolled in alternative programs – all of which meet our initial definition of severe emotional and/or behavioral problems – included:

- Possession or use of firearms or other weapons
- Possession, distribution, or use of alcohol or drugs

- Arrest or involvement with the criminal justice system
- Physical attacks or fights
- Disruptive verbal behavior
- Chronic truancy
- Continual academic failure
- Pregnancy/teen parenthood
- Mental health needs.

One of the major issues states face in creating funding programs for alternative schools is defining them. Our 2010 review of literature and state practice on alternative education provided little guidance for developing a clear definition of alternative education. More recently, and as part of implementing its compulsory attendance laws, Maryland commissioned a study to review state definitions of ALE programs (see Porowski, O'Conner & Luo, 2014). Maryland needed a definition because attendance in an ALE program was an exemption in its compulsory attendance law and the state did not have a clear definition of such programs. The study found great variation across the states in both defining and structuring alternative education programs. Because individual states or school districts define and determine the features of their alternative education programs, they tended to differ in key characteristics, such as target populations, setting, services, and structure.

A formal definition of an ALE program would need to consider the target population (including both grade levels served and types of students), program setting (within a public school or outside such a structure), program offerings (academic, behavioral, counseling, social skills, career counseling, etc.) and structure (how programs are scheduled, staff responsibilities, etc.). The Porowski, O'Conner & Luo (2014) study found wide variation across states (and districts) across all of there four elements.

We have concluded that the 2006 Urban Institute (Aron, 2006) definition of alternative education closely follows our understanding of such programs:

> Alternative education refers to schools or programs that are set up by states, school districts, or other entities to serve young people who are not succeeding in a traditional public school environment. Alternative education programs offer students who are failing academically or may have learning disabilities, behavioral problems, or poor attendance an opportunity to achieve in a different setting and use different and innovative learning methods. While there are many different kinds of alternative schools and programs, they are often characterized by their flexible schedules, smaller teacher-student ratios, and modified curricula.

In 2010, we also reviewed state standards – where such existed – for alternative schools. Most states use definitions similar to that of the Urban Institute, but we only identified one state, Indiana that actually established standards for what an alternative education program might look like. The Indiana Department of Education's (2010) web site states that:

While each of Indiana's alternative education programs is unique, they share characteristics identified in the research as common to successful alternative schools.

- Maximum teacher/student ratio of 1:15
- Small student base
- Clearly stated mission and discipline code
- Caring faculty with continual staff development
- School staff having high expectations for student achievement
- Learning program specific to the student's expectations and learning style
- Flexible school schedule with community involvement and support
- Total commitment to have each student be a success.

We conclude that these characteristics align with the EB view of alternative education programs.

From work in other states, we have found that funding formulas for alternative schools differ substantially. In a few states, the typical staffing ratio for an alternative school is one administrative position for the school plus one teacher position for every eight students. Because alternative high schools are generally designed to serve students who are severely at risk, we recommend they remain relatively small. As a result of the small size of alternative schools, staff at these schools often must fill multiple roles. Many teachers in alternative schools provide many different services for students, including: instruction, pupil support, and counseling services. This suggests that the staffing structure and organization for instruction in Alternative High Schools is usually quite different from that found in typical high schools.

Though Wyoming could consider developing a more formal definition of its ALE system, and a set of standards for ALE programs, it does not need to do so for funding purposes. Because the state's current funding model includes a variety of small school structures, it provides appropriate resources for ALE schools of many sizes, even those that are larger than recommended by the EB model. Thus we conclude that there is no need to conduct a formal recalibration of the funding system for Wyoming's ALE schools; the general funding model supports these schools, particularly the model for schools with less than 49 students, as well as all other non-ALE schools.

Resource Use Analysis

In 2012-13, there were a total of 863 ADM enrolled in 16 alternative schools in Wyoming. These sixteen schools employed 23.3 more total staff then allocated through the model. Specifically, in 2012-13 staffing for these 16 schools varied from the model as shown in the table below. It is important to note that the variation in teachers is a function of the way resources are generated by the model, which as described above, provides funding for one assistant principal position for the school and funding for one teacher position for each 7 students in the school. As a result, the findings reported here show how staff are actually allocated.

Staff Category	2012-13 Difference From The Funding Model
Number of Schools	16.0
Teacher	(39.8)
Librarian	0.7
Media Tech Staff	3.5
Pupil Support	13.2
Aide	19.1
School Admin	(2.6)
Secretary and Clerical - School	22.9
Tutor	5.3
Teacher - Not of Record	1.1
Total Certified Staff Difference	(22.1)
Total Staff Difference	23.3

Source: CRERW

32. Special Education

Providing appropriate education services for students with disabilities, while containing costs and avoiding over-identification of students, particularly minority students, presents several challenges (see Levenson, 2012). Many mild and moderate disabilities, often those associated with students learning to read, are correctable through strategic early intervention. This intervention includes effective core instruction as well as targeted Tier 2 intervention programs, particularly one-to-one tutoring (Elements 8 and 26). For those that require special programs as identified through an IEP, the EB model relies on a census based funding formula that provides additional teaching and aid resources based on the total number of students in a school. As described below, these resources are expected to meet the instructional needs of children with mild and moderate disabilities. For children with severe disabilities, the EB model recommends that the state pay for the entire cost of their programs.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
	100% cost reimbursement		1 teacher for every 150 students in the school 1 aide for every 150 students in the school Federal funds Full state funding for students with severe disabilities To explore this option as part of the 2015 recalibration, WY would need to create a great deal of new data; specifically it would need to separate severe and profound special education expenditures from all others.

Analysis and Evidence

In their book on the best approaches to serve students with disabilities, Frattura and Capper (2007) conclude that both research and most leading educators recommend that educating students in general education environments results in higher academic achievement and more positive social outcomes for students with and without disability labels as well as being the most cost effective way to educate students. Thus, they recommend that school leaders focus their efforts on preventing student underachievement and alter how students who struggle are educated. Doing so, they argue, will overcome the costly and low performance outcomes of multiple pullout programs. Further, fewer students will be inappropriately labeled with a disability, more students will be educated in heterogeneous learning environments, and higher student achievement and a more equitable distribution of achievement will result (Frattura & Capper, 2007).

The core principles of such a proactive approach to teaching students with a disability are that the education system needs to adapt to the student; that the primary aim of teaching and learning is the prevention of student failure; that the aim of all educators is to build teacher capacity; that all services must be grounded in the core teaching and learning of the school; and, that to accomplish this, students must be educated alongside their peers in integrated environments (Frattura & Capper, 2007).

Supporting this argument, research shows that many mild and moderate disabilities, particularly those associated with students learning to read, are correctable through intensive early intervention. For example, several studies (e.g., Borman & Hewes, 2003; Landry, 1999; Slavin, 1996) have documented that through a series of intensive instructional interventions (e.g. small classes, rigorous reading curriculum, 1-1 tutoring), nearly 75 percent of struggling readers identified in kindergarten and grade 1 can be brought up to grade level without the need for placement in special education. Other studies have noted decreases in disability labeling of up to 50 percent with interventions of this type (see for example, Levenson, 2011; Madden, Slavin, Karweit, Dolan & Wasik, 1993; Slavin, 1996).

That is why the EB recommendations for extended learning opportunities (Elements 26, 27 and 28) are so important; they, along with core tutoring and pupil support services, are the series of service strategies that can be deployed before special education services are needed. This sounds like a common sense approach that would be second nature to educators, but in many cases educators have heretofore been rooted in a "categorical culture" that must be corrected through professional development and strong leadership from the district office and the site principal. Using a census approach to providing most of extra resources for students with disabilities, an approach increasing in use across the country, works best for students with mild and moderate disabilities, but only if a functional, collaborative early intervention model (as outlined above) also is implemented.

This proactive approach to special education is evident in the Individuals with Disabilities Education Act (IDEA) of 2004, which changed the law about identifying children with specific learning disabilities. The reauthorized law states that schools will "not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability ..." (Section 1414(b)). Instead, in the Commentary and Explanation to the proposed special education regulations, the U.S. Department Education encourages states and school districts to abandon the IQ-achievement discrepancy model and adopt Response to Intervention (RTI) models, also discussed above, based on recent research findings (Donovan & Cross, 2002; Lyon et al., 2001; President's Commission on Excellence in Special Education, 2002; Stuebing et al., 2002). An RTI model, what we call a proactive approach above, identifies students who are not achieving at the same level and rate as their peers and provides appropriate interventions, the first ones of which should be part of the "regular" school program and not funded with special education resources (Mellard, 2004).

The core features of RTI include:

- High quality classroom instruction
- Research-based instruction
- Classroom performance
- Universal screening
- Continuous progress monitoring
- Research-based interventions, that would include 1-1 tutoring
- Progress monitoring during interventions, and
- Fidelity measures (Mellard, 2004).

Common attributes of RTI implementations are: a strong core instructional program for all students, multiple tiers of increasingly intense student interventions, implementation of a differentiated curriculum, instruction delivered by staff other than the classroom teacher, varied duration, frequency, and time of interventions, and categorical or non-categorical placement decisions (Mellard, 2004). This proactive model fits seamlessly into our broader approach to helping all struggling students through early interventions.

In many instances this approach requires school-level staff to change their practice and cease functioning in "silos" that serve children in "pullout" programs identified by funding source for the staff member providing the services (e.g. General Fund, Special Education, Title I). Instead, all staff would team closely with the regular classroom teacher to identify deficits and work together to correct them as quickly as possible. This is a common sense approach that could be second nature in schools, but in many cases schools have heretofore been rooted in a "categorical culture" that must be corrected through professional development and strong leadership from the district office and the site principal.

For children with more severe disabilities, clustering them in specific schools to achieve economies of scale is generally the most effective strategy and provides the greatest opportunity to find ways to mainstream them (to the extent feasible) with regular education students. In very sparsely populated areas this is often not feasible but should be explored. Students in these categories generally include: severely emotionally disturbed (ED); severely mentally and/or physically handicapped; and children within the autism spectrum. The ED and autism populations have been increasing dramatically across the country, and it is likely that this trend will continue in the future. To make the provision of services to these children cost-effective, it makes sense to explore clustering of services where possible and design cost parameters for clustered services in each category. In cases where students need to be served individually or in groups of two or three because of geographic isolation, it would be helpful to cost out service models for those configurations as well, but provide full state funding for those children. This strategy would reduce the likelihood of overwhelming the financial capacity of a small school district that happens to be the home of a child with a severe disability.

The census approach to funding core special education services can be accomplished by providing additional teacher resources at a fixed level – the EB recommendation now is 1.0 teacher and 1.0 aide for every 150 regular student. The census approach emerged across the country for several reasons:

- The continued rise in the number and percentage of "learning disabled" and continued questioning by some of the validity of these numbers
- Under-funding of the costs of severely disabled students
- Over labeling of poor, minority, and ELL students into special education categories, which often leads to lower curriculum expectations, and inappropriate instructional services
- Reduction of paper work

Allocating a fixed census level of staffing (1.0 FTE teachers and 1.0 FTE aides for every 150 students) could meet the needs of children with mild and moderate disabilities if a functional,

collaborative early intervention model such as the one outlined above can be implemented. We note that our staffing for the at-risk students discussed for Elements 26-30 – tutoring, extended day, summer school and ELL -- meets this requirement.

Often, the census approach for the high incidence, lower cost students with disabilities is combined with a different strategy for the low-incidence, high-need students, whose costs are funded separately and totally by the state, as these students are not found proportionately in all districts. This is the catastrophic funding for school districts that provides resources for special education students who require services exceeding some figure, such as $15,000 (after Medicaid, federal special education grants, and other available third-party funding is applied).

Today, diverse states such as Alabama, Arkansas, California, Montana, North Dakota, Pennsylvania, and the New England states of Massachusetts and Vermont all use census-based special-education funding systems. Moreover, all current and future increases in federal funding for disabled students are to be distributed on a census basis.

It is possible that Wyoming could enhance the efficiency of its special education program if it moved to a census funding approach. To date the state has concluded that the small size of its many schools and districts would limit funding in many districts creating unanticipated funding and service concerns. As a result, the state continues to provide 100% cost reimbursement for all special education expenses.

Resource Use Analysis

Wyoming reimburses school districts for 100% of approved special education expenditures. Special Education is therefore not part of the Evidence-Based model. For school year 2012-13, school districts were reimbursed $205,042,267 for allowable special education expenditures.

ADDITIONAL ISSUES RELATED TO THE WYOMING FUNDING MODEL

There are several other issues related to the Wyoming Funding system that are not individual elements of the model, but integral aspects of costing the model. These issues include: salary levels, health insurance, other fringe benefits, regional cost adjustments, external cost adjustments and the school district school finance audit process.

33. Salary Levels

The original MAP study in 1997 and the Picus Odden and Associates recalibration in 2005 used previous year's staff salaries to put a salary "price" on each staff element of the funding model. In addition, those studies conducted an analysis of the cost of an additional year of experience for non-professional staff, and an additional year of experience as well as additional education units for professional staff. The latter allows the model to adjust the average salary used to compute each district's funding allocation by the education and experience of the staff in that district, reflecting those differences across school districts in the state. Additionally, in the 2005 study another element for responsibility was added for school and district administrative staff. Between recalibration years, funding model salary levels have been adjusted by external cost adjustments (ECAs) as determined appropriate by the Legislature. The model also continues to account for the experience, education and responsibility for school district staff, where appropriate.

Analysis and Evidence

Between the 2005 and 2010 recalibrations, salaries in the funding formula drew from the amounts established in 2005, and were increased by ECAs in school years 2007-08, 2008-09, and 2009-10. During the 2010 recalibration, it was determined the price of salaries in the funding model had allowed salaries paid by school districts to rise above market based upon a series of salary benchmarking studies. In response, the Legislature adopted a process to monitor the labor market and continue to use an inflation factor to adjust salaries, as appropriate. Since the 2010 recalibration, salaries have been adjusted by ECAs for school year 2013-14 and it is likely another adjustment will occur in school year 2014-15.

It is important to note that use of the salary benchmarking studies and adoption of the funding model monitoring process in 2010 moved the state away from a funding model based upon historical salaries paid by school districts and into one in which the "price" of salaries embedded in the funding model is compared to appropriate labor markets. The 2010 recalibration determined that the salary levels embedded in the funding model exceeded what the labor market demanded. Further, the 2010 recalibration established a process for the Legislature to annually monitor model salaries to ensure they continued to meet or exceed the demands of the market while still providing for experience, education and responsibility cost adjustments for each school district.

It is our conclusion that seeking to determine whether model salaries have been appropriately "inflated" from 2005 – which has been the focus of current discussions about salary levels across the state – is not the most fruitful approach for the 2015 recalibration. Instead, we recommend the state identify an appropriate base salary level using current labor market data and conduct a salary benchmarking analyses to identify where professional and non-professional education staff salaries rank in current, appropriate labor markets. Based upon those analyses, the state can decide where funding model salaries should be placed. The state could decide it wanted funding model salaries to be above, at, or below market levels. With a benchmarking analysis, the state would have the necessary data to make such decisions, and be explicit about them.

If desired, this salary analysis could also include an analysis of whether the state wants to continue to adjust individual district average teacher salaries in the model by education, experience and responsibility, or to move to a different, and perhaps more performance-oriented salary structure.

At a minimum, however, we recommend the state launch an analysis of where education salaries currently lie within the various Wyoming and regional labor markets and determine where in the market funding model salaries should be set.

34. Health Insurance

Wyoming has taken a clear and substantive approach to addressing the costs of health insurance in education staff compensation. As a result, the state has a perspective on how the state education funding system should address the costs of health insurance. Specifically, the state includes in the funding model a dollar amount for health insurance benefits that is the dollar amount the state provides for state employees. The health insurance amounts over the past several years are as follows:

Historical Model Amount for Health Insurance per FTE, School Years 2006-07 to 2015-16.

School Year	Model FTE Amount	Prior Year $ Change	Prior Year % Change
2006-07	$8,169		
2007-08	$9,468	$1,299	15.90%
2008-09	$9,562	$94	0.99%
2009-10	$9,801	$239	2.50%
2010-11	$10,489	$688	7.02%
2011-12	$12,805	$2,316	22.08%
2012-13	$13,180	$376	2.93%
2013-14	$12,523	-$657	-4.99%
2014-15	$13,129	$606	4.84%
(Est.) 2015-16	$14,953	$1,824	13.89%

Source: LSO analysis and calculations of Models.

Analysis and Evidence

This approach to addressing the health care portion of employee benefit costs is sound and we recommend that the state continue this process.

35. Benefits

In determining staff costs, the Wyoming Funding Model uses a base salary for various positions and adds to it benefit costs. Benefits have included health care (discussed above), Social Security and Medicare, worker's compensation, disability and unemployment insurance.

For 2014-15, the costs for these benefits, which are funded inside the model, are as follows:

Benefit Element	Percent of salary
Social Security and Medicare	7.65%
Retirement	12.69% (7.12% employer and 5.57% employee)
Worker's Compensation	0.70%
Unemployment Insurance	0.06%

Analysis and Evidence

Wyoming takes a cost-based approach to all of these benefit costs and we recommend that the state continue this approach.

However, we recommend that the state monitor the following four benefits issues. First, Wyoming has enacted some short-term changes in retirement. At present, 12.69% of salary for retirements benefits, specifically the 7.12 % employer contribution, is funded within the model.

However, the state currently funds short-term changes in these percentages outside the model. In particular, the state is reimbursing school districts an additional 0.625% for employee contributions and 0.50% for employer contributions. For SY 2015-16, the employer contribution will increase another 0.75% and the State will reimburse that cost. In SY 2016-17, the State will reduce the reimbursement for the employee contribution by 0.25%. And in SY 2017-2018 and beyond, the employee contribution reimbursement level will be reduced another 0.375%. These pension cost changes should be monitored on a continual basis.

First, during recalibration the legislature might want to discuss the difference between putting increased district pension costs into the formula with an updated 7.12% figure and reimbursing pension costs outside the formula. Although the reimbursement approach requires less funding, in part because Wyoming districts employ fewer teachers than the model provides, the formula would be "cleaner" if pension costs were just updated annually and included in the benefits component of compensation

Second, the Wyoming Department of Workforce Services is proposing to change the methodology used to calculate the Worker's Compensation rate. Though the 0.70% is appropriate for now, if the percentage changes when the Department of Workforce Services produces a new cost, the state should then incorporate that new figure into the benefit rate included in the model.

Third, the state also should continue to monitor the Unemployment Compensation rate which is currently 0.06% and adjust the model as necessary should that rate change following recalibration.

Fourth, if changes are made in required social security contributions by the Federal government, those changes also should be included in the model.

In general, we would recommend that as changes in these four areas emerge, they should be incorporated into the model in the school year following the year in which the change is identified.

36. Regional Cost Adjustments

Regional cost adjustments are designed to compensate districts for the varying purchasing power of the education dollar across geographic regions of the state, particularly for professional staff salaries.

2010 EB Recommendation	Current Wyoming Policy	Cost Difference	Current EB Recommendation
Adjust model salaries for regional differences by using the 2011 hedonic wage index as calculated by state consultants (Taylor).	Adjust model salaries for regional differences by using the greater of the Wyoming Cost of Living Index (average of the past 6 semiannual calculations) or the 2005 hedonic wage index as calculated by state consultants (Baker via LOP & Associates), with a minimum index value of 1.00.	$6,560,511	Recalibrate.

Analysis and Evidence

Economists and the school finance policy community generally agree that the purchasing power of the education dollar varies across geographic regions of a state. Over the past 30-40 years, therefore, the policy community has developed a variety of approaches to quantify these cost differences to facilitate the use of a "cost index" to adjust state aid allocations to ensure the equal purchasing power of each school district's personnel dollars. For many years, the hedonic wage approach was used to develop such cost indices. During the past ten years, however, a "comparable wage" approach was also developed and has assumed more support among the school finance community.

The 2010 EB recommendation, the hedonic wage approach, seeks to identify various elements in regions/school districts that produce cost increases (dis-amenities) or decreases (amenities) for school districts. These include things like cultural resources (theaters, symphonies, museums, etc.), the cost of living in a specific area, demographic characteristics of the community, etc. The variables that are found to represent the amenities and dis-amenities tend to be controversial, making consensus difficult to reach on what variables and equations should be used to develop the index. The hedonic approach also produces indices for each district.

The comparable wage index (CWI) approach takes a different tact, and avoids the debate over appropriate amenity and dis-amenity variables. The CWI identifies actual wages individuals have accepted to work in various regions of the state, in jobs different from but with similar skills and competencies to education. The notion is that these wages represent the salary differences that must be provided in order to have workers take jobs at fair salaries across regions. These actual comparable wages theoretically incorporate all the amenities and dis-amenities in the various regions. The CWI approach posits that these comparable wages can be

used to quantify wage differences needed across regions to ensure equal purchasing power of compensation dollars for education. However, the computation of a CWI would not produce an index for each county in Wyoming. Instead counties would be grouped together in regional labor markets.

In addition, Wyoming has developed a "cost of living" index (the Wyoming Cost of Living Index or WCLI) across regions and districts. Though a cost of living index reflects the variable costs to families of the market basket of goods families purchase across geographic areas, it does not reflect the market basket of goods that school districts purchase. As a result it has not received support from the school finance policy community for use as a regional cost adjustment. Despite this, the WCLI continues to be used in the Legislature's funding model.

Both the hedonic and comparable wage approach produce an index, with an average of 1.0. Districts with indices below 1.0 would have their personnel resources reduced to adjust for lower costs and districts with indices above 1.0 would have their personnel resources increased to adjust for higher costs. These adjustments have led to debate on the efficacy of the indices not only in Wyoming but also other states. The WCLI also has values below and above 1.0.

The Legislature's funding model uses a cost adjustment factor that is the greater of the hedonic wage index that was developed in 2005 or the Wyoming Cost of living index, with a minimum index of 1.0. We view this approach as more a compromise policy than a clean regional cost adjustment.

We continue to recommend that the state use one cost adjustment, with values both above and below 1.0. However, it is recommended that this element is further investigated and recalibrated to find the appropriate approach.

37. External Cost Adjustments

External cost adjustments are factors used to adjust the cost-basis of model elements to ensure the state continues to provide the statutorily required educational program to Wyoming school children in the time period in between the formal recalibrations, now scheduled for every five years.

Up until recently, state practice has been for the legislature to consider external cost adjustments annually, though the 2014 legislature enacted ECAs for both 2014-15 and 2015-16.

Following the 2010 recalibration, Wyoming developed what is likely the most sophisticated ECA approach in the country:

- One for professional staff, using a Wyoming specific Comparable Wage Index
- One for non-professional staff, using a Wyoming specific High School Comparable Wage Index
- One for materials, using the Producer Price Index for Office Supplies and Accessories

- One for energy, using the Producer Price Index for Commercial Electric Power (weighted at 44.1%) and the Producer Price Index for Commercial Natural Gas (weighted at 55.9%).

Analysis and Evidence

Though the state has used four different ECAs for the past several years, it has not been consistent in using them to adjust the Legislature's funding model elements on an annual basis. On the other hand, the state has adjusted the appropriate elements of the cost-based model so that it continues to represent the best possible estimate of education costs in Wyoming. To date, the Legislature's funding model has provided more revenues to school districts than the cost-based model.

Underneath this debate is the reality that the Legislature adopted a set of formulas, prices and ratios for the Legislature's funding model that are more generous than that required by the cost-based model as required by the Courts. Examples include the difference in class size ratios for core classes and elective teachers, and the minimum numbers of teachers resourced in small schools and districts.

The 2014 Monitoring Report shows that the total resources provided by the Legislature's funded model exceeds that required by the cost-based model, even when the ECA is not allocated each year to the Legislature's funded model. Because of this reality, our conclusion from these data is that the state is providing the level of resources identified by the cost-basis that is necessary for districts to offer the statutorily required educational program to Wyoming school children.

Our recommendation is that the state should continue to use the four cost indices, and apply them annually to the cost-based (EB) model, and continue its monitoring process approach for applying an ECA to the Legislative funding model if the EB model is not adopted.

38. School District School Finance Audit Process

The operation of the Wyoming funding model requires the use of several pieces of data at both school and district levels. In order for the formulas to work as legislatively intended, every data element in the formula must be accurate. To ensure this is the case, each year the Department of Audit conducts audits in a sample of school districts to ensure that the data provided for the funding model are accurate. Several data points are audited, including, for example, the following:

- Number of students
- Number of CTE students, and number of CTE teachers
- Average teacher experience and education units
- Number of buildings, square footage, etc.
- Special education and transportation expenditures.

The audit findings are then sent to the Wyoming Department of Education. When the audit identifies errors in the audited numbers, it is the Department's responsibility to enforce changes in state aid allocations – to either increase or decrease district funding depending on the audit finding.

This clearly is a needed process and should continue. No funding formula can work as intended unless the data it uses are accurate.

We strongly recommend that the school district school finance audit process be continued. We further recommend that the Department of Education revisit the rules and guidance concerning the data it needs from each district to operate the funding formula. Revised rules should clearly define every data element of the funding model and provide clear guidelines on how districts should produce those data so that every district, the Audit Department and the Department of Education has the same understanding of what data should be reported and audited.

GLOSSARY OF FUNDING MODEL ELEMENTS

Model Element	Page Number	Definition
Core Teachers	32 (elementary) 35 (secondary)	Core teachers are the grade-level classroom teachers in elementary schools and the core subject teachers in middle and high schools (e.g., mathematics, science, language arts, social studies and world language, including such subjects taught as Advanced Placement in high schools).
Elective Teachers	37	Elective teachers as all teachers for subject areas not included in the core, including such classes as art, music, physical education, health, and career and technical education, etc. However, some career technical classes can substitute for core math and science classes.
Instructional Coaches	44	Instructional coaches, sometimes called mentors, site coaches, curriculum specialists, or lead teachers, coordinate the school-based instructional program, provide the critical ongoing instructional coaching and mentoring that the professional development literature shows is necessary for teachers to improve their instructional practice, do model lessons, and work with teachers in collaborative teams using data to improve instruction.
Tutors	46 (core) 82 (struggling students)	Tutors, or Tier II Interventionists, are licensed teachers who, during the regular school day, provide 1-1 or small group (no larger than 5) tutoring to students struggling to meet proficiency in core subjects.
Extended day Programs	85	Extended day programs provide academic extra help to students outside the regular school day before and after school.
Summer School	87	Summer school includes all programs provided during the summer months, i.e., outside the regular school year, largely focusing on academic deficiencies of students but includes a wider array of classes for high school students
At-risk Students	81	The unduplicated count of students eligible for free and reduced price lunch, ELL and mobile students. The proposed resources triggered by At-

Model Element	Page Number	Definition
		Risk students would include all resources for tutors (Tier 2 Interventionists), extended day programming, summer school, and additional pupil support.
English Language Learner services	89	ELL students are those who come from homes where English is not the native language and who perform at Levels 1, 2 and 3 in English; in addition to the At-Risk resources, the model provides resources to provide English as a Second Language services for these students.
Special Education	95	Programs for all students with disabilities.
Alternative Schools	92	Alternative Schools provide services, usually outside of the regular school environment, to students who have some combination of significant behavioral, social and emotional issues, often including alcohol or drug addictions. These students are different from at-risk students and require a different set of services.
Gifted, Talented	61	Gifted and talented students are those who perform in the very top levels of performance, and can handle much more than a year of academic work in a regular school year.
Substitute Teachers	50	These are regular substitute teachers.
Student Support, Guidance Counselors, Nurses	51 (core) 83 (struggling students)	These include guidance counselors, social workers, psychologists, family outreach workers, nurses, etc. Guidance counselors and nurses are provided for all students and additional student support staff are provided in the struggling students section.
Duty/Supervisory Aides	53	These are non-licensed individuals who monitor the hallways, doors and playgrounds, and supervise the lunchroom.
Librarians	55	These are regular school librarians.
Principal, Assistant Principal	57	These are regular school principals and assistant principals.
Professional Development	64	Professional development includes all training programs for licensed staff in schools including professional development for implementing new curriculum programs, sheltered English instructional strategies for ELL students, gifted and talented, etc. It

Model Element	Page Number	Definition
		also includes assistance to teachers working in collaborative groups and ongoing coaching of teachers in their individual classrooms. Resources include instructional coaches, 10 pupil-free days for training, and $100 per pupil for trainers and other expenses.
School-Based Technology and Equipment	70	These include within school technology such as computers, servers, network equipment, copiers, printers, instructional software, security software, some curriculum management courseware, etc.
Instructional Materials	67	This includes textbooks, consumable workbooks, laboratory equipment, library books and other relevant instructional materials.
Interim-, Short-Cycle Assessments	67	These include benchmark, progress monitoring, formative, diagnostic and other assessments teachers need in addition to state accountability assessment data.
Student Activities	73	This includes on-credit producing after-school programs, including clubs, bands, sports, and other such activities.
Central Office Administration	78	This is a per pupil amount developed for a prototypical school district of 3900 students and includes all typical central office staff such as superintendent, assistant superintendents, curriculum director, special education, the business and HR functions, assessment & technology, and a director of operations/maintenance.
Operations and Maintenance	75	Covers functions such as custodial services, grounds maintenance and facilities maintenance and minor repairs.

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(Those with an asterisk * refer to randomized controlled trials.)

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