Tab A

ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION

DATE: January 10, 2012

ISSUE: Approval of Agenda

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the Agenda for the January 10, 2012 Teleconference meeting

SUPPORTING INFORMATION ATTACHED:

- Agenda

PREPARED BY: Chelsie Bailey
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
Christine Steele
State Board of Education Liaison

ACTION TAKEN BY STATE BOARD: _____ **DATE:** _____

COMMENTS:

State Board of Education Teleconference January 10, 2012 at 9:00 a.m.	
1. Call to Order- Joe Reichardt *Roll Call	Action
2. Approval of Agenda- Joe Reichardt * Review of February 2012 Agenda	Action- Tab A
3. Approval of Minutes- Joe Reichardt *December 8, 2011	Action- Tab B
4. Revised Education Accountability Bill- Paul Williams	Information- Tab C
5. Letter from Governor Mead 12/14/2011- Joe Reichardt	Information- Tab D
6. ADJOURNMENT	

Tab B

ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION

DATE: January 10, 2012

ISSUE: Approval of Minutes

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the minutes from the December 8, 2011 State Board of Education meeting.

SUPPORTING INFORMATION ATTACHED:

- Minutes of December 8, 2011

PREPARED BY: Chelsie Bailey
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
Christine Steele
State Board of Education Liaison

ACTION TAKEN BY STATE BOARD: _____ **DATE:** _____

COMMENTS:

WYOMING STATE BOARD OF EDUCATION
December 8, 2011
Teleconference

Wyoming State Board of Education members present: Dana Mann-Tavegia, Cindy Hill, Ron Micheli, Pete Gosar, Joe Reichardt, Larry McGarvin, Hugh Hageman, Scotty Ratliff, Kathy Coon, Sue Belish, and Walt Wilcox

Members absent: Matt Garland

Also present: Paul Williams, WDE; John Masters; WDE; Chelsie Bailey, WDE; and Mackenzie Williams, Attorney General's Office (AG)

CALL TO ORDER

Chairman Joe Reichardt called the meeting to order at 3:00 p.m.

Chelsie Bailey conducted roll call and established that a quorum was present.

APPROVAL OF AGENDA

Sue Belish requested a report from the WDE on the progress of the Rules and Regulation for the Wyoming State Content Standards be added to the agenda. The item became number five on the agenda.

Dana Mann-Tavegia suggested that an executive session be added to the agenda as item number four.

Pete Gosar moved to approve the agenda as presented, seconded by Dana Mann-Tavegia, the motion carried.

APPROVAL OF MINUTES

Minutes from the November 17, 2011, State Board of Education meeting were presented for approval.

Sue Belish made a couple changes and clarifications in the minutes.

Scotty Ratliff moved that the amended minutes be approved, seconded by Kathy Coon, the motion carried.

EXCUTIVE SESSION

Attorney for the State Board of Education, Mackenzie Williams, explained to the Board that an executive session was needed because all proposal information on the Statewide assessment needed to be kept confidential until a contract had been issued. An additional reason for the executive session was to address some issues with the rules and regulations on the Wyoming State Content Standards. It was the attorney's position that the information be presented to the Board in an executive session before action was taken in an open meeting.

Cindy Hill made a motion to enter into executive session, Pete Gosar seconded, the motion carried. The executive session started at 3:19 p.m.

Cindy Hill made a motion to come out of executive session, seconded by Dana Mann- Tavegia, the motion carried. Executive session concluded at 4:17 p.m.

REPORT ON THE STATEWIDE ASSESSMENT PROPOSALS

Paul Williams reported that after a comprehensive evaluation process a company has emerged as the highest scoring company on the request for proposals. The company is Educational Testing Service. Paul presented ETS to the Board for its consideration.

Dana Mann-Tavegia moved that the Superintendent of Public Instruction through the Department of Education award a contract for statewide assessment to Education Testing Services Company for the state-wide assessment for Wyoming students to be conducted in school years 2012-2013 through 2013-2014, and that the attorney for the Superintendent and the attorney for the State Board of Education and the Department of Education be directed to negotiate a contract for the assessment, subject to approval by this board and appropriation and funding by the Wyoming Legislature.

Sue Belish seconded, the motion carried.

Dana Mann-Tavegia requested that a role call be made to insure a quorum is present.

Chelsie Bailey conducted roll call and established that a quorum was present.

RULES AND REGULATIONS UPDATE

Mackenzie Willlams discussed the possibility of amending the proposed rules and regulations on the Wyoming State Content Standards that are currently under consideration. The amendment would consist of placing the rules in their own chapter instead of Chapter 31.

Chairman, Joe Reichardt, asked the members of the Board if anyone wished to entertain a motion on moving the rules into their own chapter. No motion is moved.

Mr. Williams informed the Board that the rules were currently before the Governor. If the Governor either approved the rules or took no action, a notice of intent to amend the rules and public comment period would be opened as of Monday December 12, 2011. The forty-five day comment period would end on January 26, 2012, and five public hearings would follow. There would also be one WEN hearing. After that time the comments would be compiled and the Board would formulate its responses and vote on adopting the rules in the April State Board of Education Meeting.

FEBRUARY 2012 AGENDA ITEMS

Joe Reichardt would like to have a complete and full discussion in the February Board meeting of the State Board of Education and Wyoming Department of Education's duties and obligations. He requested that before February the members review the document in their packet and become familiar with it.

LEGISLATIVE DIRECTION

Joe Reichardt requested the Board members give Mr. Micheli and his subcommittee legislative issues that they would like addressed. The members of the subcommittee include: Hugh Hageman, Scotty Ratliff and Ron Micheli

The next State Board of Education meeting will be on February 22 and 23, 2012 in Cheyenne, Wyoming.

The State Board of Education adjourned at 4:35 p.m.

Tab C

Amendment to Draft Legislation Regarding the Use of the ACT in Place of Grade 11 PAWS: Some Preliminary Thoughts and Comments

Prepared for:

The Wyoming State Board of Education

Paul Williams

Assessment Division Director for the Transition

Wyoming Department of Education

January 4, 2012

A proposed amendment to the draft accountability legislation was made to the Joint Interim Select Committee on Accountability in Education on December 20, 2011 to replace the grade 11 PAWS assessment with the ACT suite of assessments for grades 9-12. The WDE has been asked to comment on the proposal. The WDE believes the proposal has substantial implications for the State Board of Education, Wyoming educators and students, which should be carefully considered. All of the implications of this amendment cannot be easily determined because the purposes of this new assessment model have not been made clear. Thus, the generic term "ACT suite" is used in this document to represent the intent of the proposal to replace the grade 11 PAWS, since the exact test instruments to be adopted have yet to be specified.

A fundamental tenant of assessment is to first identify the purposes of testing, and then to state the types of inferences one wishes to make based on test scores. Once the purposes and intended inferences are known, an appropriate test instrument can be designed or selected. In the case of the possible exclusive use of the ACT suite, the content definitions of the instruments are derived based on a consensus process that includes high school department heads and college faculty, and which focuses on expectations for college learning. Test scores are generated that are primarily used to predict college success.[1]

These assessment purposes are significantly different than the purposes for a program like PAWS, which is intended to measure what students in Wyoming know and can do relative to content standards deemed important for all Wyoming students - not just those going to a four-year college or university. Further, the PAWS design is predicated on providing both direct and indirect instructional support information, in part through the reporting of subtest scores. Should an attempt be made to use the ACT for individual diagnostic information, it is likely that the ACT will need to be validated for that purpose.

With the coming implementation of a statewide accountability system it is even more important that the measurement instrument that is used conform specifically and completely to statewide content standards and expectations. A fundamental lack of fairness exists when students and educators are potentially held responsible for content that may be included on a test used to monitor achievement for accountability purposes but that is not contained in the state content definitions. Conversely, given that even under CCSS scenarios WDE may elect to define up to 15% unique content beyond CCSS standards, content that may or may not be contained on the ACT suite of assessments. Thus, specific content Wyoming may decide is important will not be included on an ACT test, and therefore probably not taught or learned.

Should future Wyoming content standards include the common-core state standards (CCSS), it will not be sufficient for ACT to assert that since the ACT suite, in their estimation, conforms to the CCSS there is also, by definition, a perfect content congruence with Wyoming content standards even if those

[1] Note that the ACT Technical Manual states: "These tests are designed to measure skills that are most important for success in postsecondary education and that are acquired in secondary education."

standards are reflective of the CCSS. The only way to be certain that there is a sufficient congruence between the ACT and Wyoming content standards is to have a third-party conduct a match between Wyoming standards and a) the content standards upon which the ACT is based, and b) the items included on ACT test forms. Such a congruence evaluation must be done before an instrument is adopted for use - not after.

The purposes for PAWS and ACT assessments are different; each is validated for its own intended purpose. The instruments are not simply interchangeable.

Fundamentally, these design differences will likely cause the hasty adoption of the ACT suite to result in a probable lack of curricular and instructional validity (at least until data are gathered independently), insufficient support to teachers on how to improve instruction, a minimization of State Board of Education freedom to act, and a compromise of WDE's ability to completely manage the statewide assessment system.

More specifically, the implications of eliminating the PAWS in favor of the ACT suite include:

1. the replacement of the Board-approved content standards with content standards measured by the ACT assessments. The ACT content standards will become the *de facto* state standards for grades 9-12 and will become the focus of secondary instruction.[2] These ACT-based content standards may include the CCSS standards but they may also include some content standards that go beyond the Wyoming content standards in important ways;
2. assessing ACT-based content standards for grades 9-12 that may not be included in Board-approved standards may result in subsequent confusion as to the role of the Board to establish content standards for grades K-8;
3. instruction that is primarily focused on what the ACT suite of assessments measures as opposed to Board-adopted content standards;
4. the elimination of (short) constructed response and extended response items from all future Wyoming secondary assessments since the ACT suite does not include any such items. The ACT suite does include an optional writing/essay portion;
5. the possibility that students, teachers, schools and districts will be held accountable, as part of the accountability system, for performance on ACT assessments and content standards that have not been through the Board approval process nor necessarily reflect content that the Board has adopted;
6. the uncertainty of the instructional sensitivity of the ACT assessments and what that may mean for planning instruction and demonstrating trend;
7. the *de facto* removal of Board authority to establish content and performance standards for all secondary instruction in Wyoming - the ACT tests, and not necessarily Board-approved content standards, will become the focus of instruction;
8. turning over the establishment of content and performance standards that go beyond the CCSS to one private vendor who will, in effect, be in charge of setting additional content standards and performance expectations for all secondary schools in Wyoming with an unknown amount of Board input.
9. the Board will have no say in how, or whether, ACT modifies its assessments and reporting information in the future. Future changes to the ACT designs will result in commensurate

[2] This may be in conflict with the Board's duties and responsibilities as defined in Section 21-2-304(a)(iii) of the Wyoming Code.

changes in instructional emphases in Wyoming secondary schools that neither the Board nor WDE will necessarily be a party to;

10. the elimination of valid trend data from previous assessments unless a comprehensive bridge study is conducted;
11. the likely need for WDE to seek a waiver from the USDOE for certain NCLB requirements that mandate a high school assessment as part of NCLB. Scott Marion reports some other states have gone through an uneasy process with USDOE to obtain the waiver, but have in the end received the waiver;
12. the nature of comprehensive instructional support for Wyoming secondary teachers, if any, that ACT would provide for improving instruction and learning;
13. the role of the Board and WDE, if any, in providing instructional support;
14. the probable severe limiting of the capacity of the Board and WDE to aggressively manage costs associated with the secondary assessment;
15. the likely elimination of competition in the acquisition of future assessment services at the secondary level, unless legislation is changed. Since it will be legislation that mandates the use of a single assessment suite, there appears to be no way to make project changes that Wyoming may want unless either ACT changes its instruments or legislation is changed that would allow competition for services.

In summary, the ACT suite, or products like it, have a role to play in Wyoming, particularly as they are well suited and validated for predicting college success. The readiness function does have an important place in the accountability system that Wyoming is considering.

There are, however, many open questions about the applicability of the ACT suite for use in an accountability environment. All of these questions must be identified and answered in advance of the possible adoption of one vendor's instrumentation without due consideration and the opportunity for reasonable competition.

DRAFT ONLY
NOT APPROVED FOR
INTRODUCTION

SENATE FILE NO. _____

Education accountability.

Sponsored by: SDraft

A BILL

for

1 AN ACT relating to the Wyoming Accountability in Education
2 Act; generally modifying the act; modifying duties and
3 tasks of implementation and administration; authorizing
4 rulemaking and requiring reporting; continuing the select
5 committee on statewide education accountability and
6 advisory committee and providing additional tasks;
7 reappropriating funds; and providing for an effective date.
8
9 *Be It Enacted by the Legislature of the State of Wyoming:*
10
11 **Section 1.** W.S. 21-2-202(a)(xiv), 21-2-204(b)(intro),
12 by creating new paragraphs (iii) through (ix), (c),
13 (d)(intro), (e), (f)(intro), by creating new paragraphs
14 (iii) through (viii), by amending and renumbering (iii) as

(ix), (h) and by creating new subsections (j) and (k), 21-2-304(a)(iv)(intro), (v)(intro), (B), (D), (E), (H), (vi), (b)(xv), by creating a new paragraph (xvi) and by renumbering (xvi) as (xvii), 21-3-110(a)(xvii) through (xix), (xxiv)(intro), (xxx) and (b), 21-7-102(a)(ii)(A) and (B) and 21-7-110(a)(vii) are amended to read:

21-2-202. Duties of the state superintendent.

(a) In addition to any other duties assigned by law, the state superintendent shall:

(xiv) For purposes of the statewide assessment of students and reporting student performance under W.S. 21-2-304(a)(v), have authority to assess and collect student educational assessment data from school districts, community colleges and the University of Wyoming. All data shall be consolidated, combined and analyzed in accordance with W.S. 21-2-204(h) and shall be provided within a reasonable time in accordance with rules and regulations of the state board;~~. In addition and pursuant to W.S. 21-2-304(a)(vii) and 21-3-110(a)(xxiv)(B), effective school year 2012-2013, the state superintendent shall, through the~~

~~department, receive scores for each student assessed by each school district under the benchmark adaptive assessment administered under W.S. 21-3-110(a)(xxiv)(B), with appropriate linkages to teachers, schools and districts, reported in formats and schedules established by rule and regulation of the state board;~~

21-2-204. Wyoming Accountability in Education Act; statewide education accountability system created.

(b) A statewide education accountability system shall be established in accordance with this section, which ~~considers use of~~ implements the components of the education resource block grant model as defined by W.S. 21-13-101(a)(xiv) and as contained in Attachment "A" as defined under W.S. 21-13-101(a)(xvii). The first phase of this system shall be a school-based system that ~~includes~~ is based on student performance as ~~measured~~ determined through multiple ~~indicators in those subjects for which students are assessed as specified by this subsection, that are reported in terms of student achievement at prescribed performance levels, and that are aggregated to the school level. Core indicators of student performance under the~~

1 ~~first phase of the statewide school-based accountability~~
2 ~~system for each applicable school shall be~~ measures of
3 school performance. The goals of the Wyoming Accountability
4 in Education Act are to:
5
6 (iii) Become a national education leader among
7 states;
8
9 (iv) Ensure all students leave Wyoming schools
10 career or college ready;
11
12 (v) Recognize student growth and increase the
13 rate of that growth for all students;
14
15 (vi) Minimize achievement gaps;
16
17 (vii) Improve teacher, school and district
18 leader quality. School and district leaders shall include
19 superintendents, principals and other district or school
20 leaders serving in a similar capacity;
21
22 (viii) Maximize efficiency of Wyoming education;
23

1 (ix) Increase credibility and support for
2 Wyoming public schools.
3
4 (c) School level performance ~~in reading shall be~~
5 ~~measured by the statewide assessment system implemented by~~
6 ~~the state board of education under W.S. 21-2-304(a)(v).~~
7 ~~Additional secondary school outcomes shall be measured in~~
8 ~~accordance with subsection (d) of this section~~ shall be
9 determined by measurement of performance indicators and
10 attainment of student performance as specified by this
11 section. To the extent applicable, each measure shall be
12 aggregated to the school level based upon those grades
13 served inclusive to each school as reported by the
14 respective school district to the department of education.
15 The indicators of school level performance shall be:
16
17 (i) Student longitudinal academic growth in
18 reading and mathematics and academic achievement in
19 reading, mathematics and science as measured by the Wyoming
20 statewide assessment administered pursuant to W.S.
21 21-2-304(a)(v);
22

(ii) Readiness, as defined by a standardized college readiness test administered in grade eight (8) covering English, reading, mathematics and science, with school level results aggregated according to a procedure in which values and weights determined by a deliberate method are tied to specific definitions of post secondary readiness;

(iii) Readiness, as defined by a standardized achievement college entrance examination administered pursuant to W.S. 21-2-202(a)(xxx) in grade eleven (11) covering English, reading, mathematics and science, with school level results aggregated according to a procedure in which values and weights determined by a deliberate method are tied to specific definitions of post secondary readiness;

(iv) Readiness, as defined by graduation or high school completion rates as defined by the federal No Child Left Behind Act of 2001 and accompanying federal rules and regulations, 34 C.F.R. 200.19, and reported in proportion to specified outcome values.

(d) Beginning in school year ~~2011-2012~~ 2012-2013, and each school year thereafter, the department of education shall compute and report a ~~combined~~ single overall school score ~~for~~ or performance rating measured by student performance ~~in the core~~ on those performance indicators specified under subsection ~~(b)~~ (c) of this section. ~~as follows:~~

(e) The state board shall compile, evaluate and determine the target levels for student performance for a single overall school score or performance rating and for content level performance. The target ~~level~~ levels for student performance ~~under the first phase of the statewide accountability system shall be positive progress~~ on all ~~core~~ performance indicators measured under subsection ~~(d)~~ (c) of this section shall conform to the January 2012 education accountability report as defined by subsection (k) of this section and shall be used by the state board to:

(i) Identify four (4) levels of school performance tied to the single overall school score or

1 performance rating that demonstrates a range of performance
2 levels as follows:
3
4 (A) Exceeding expectations including those
5 schools performing above standards in all measured areas;
6
7 (B) Meeting expectations;
8
9 (C) Partially meeting expectations; and
10
11 (D) Not meeting expectations.
12
13 (ii) Further measure performance specified under
14 paragraph (i) of this section by identifying content level
15 performance in all areas specified by subsection (c) of
16 this section and from this analysis determine schools that
17 are exceeding, meeting or are below targets in each content
18 area;
19
20 (iii) Coordinate the target levels, school and
21 content level determinations with the availability of the
22 system of support, interventions and consequences

1 administered in accordance with subsection (f) of this
2 section.
3
4 (f) A progressive multi-tiered system of support,
5 intervention and consequences to assist schools shall be
6 established by the state board and shall conform to the
7 January 2012 education accountability report as defined by
8 subsection (k) of this section. The system shall clearly
9 identify and prescribe the actions for each level of
10 support, intervention and consequence. Commencing with
11 school year 2013-2014, and each school year thereafter, ~~any~~
12 ~~school that fails to meet the computed school improvement~~
13 ~~targets established under subsection (e) of this section~~
14 ~~shall be subject to~~ the state superintendent shall take
15 action based upon system results according to the
16 following:
17
18 (iii) Schools designated as exceeding
19 expectations shall file a maintenance plan with the school
20 district superintendent and the department. The plan shall
21 document effective practices, describe a plan to maintain
22 performance, include a communication plan to share

1 effective practices with other schools and shall identify
2 any school improvement goals;
3
4 (iv) Schools designated as meeting expectations
5 shall file an improvement plan with the school district
6 superintendent and the department. The plan shall be based
7 upon an evaluation of indicator scores that identifies
8 appropriate improvement goals with an explanation of the
9 measures and methods chosen for improvement, the processes
10 to be implemented to deliver the improvement measures,
11 identification of relevant timelines and benchmarks and an
12 articulation of the process for measuring success of the
13 methods chosen to increase performance. The state
14 superintendent shall appoint a representative from the
15 department in accordance with paragraph (vii) of this
16 subsection to monitor the school's progress towards meeting
17 the specified goals and implementation of the processes,
18 measures and methods as contained in the school's plan.
19 The representative shall assist the district, if requested,
20 in identifying and securing the necessary resources to
21 support the goals as stated by the school;
22

1 (v) Schools designated as partially meeting
2 expectations shall file an improvement plan in accordance
3 with paragraph (iv) of this subsection that identifies and
4 addresses all content areas where performance is below
5 target levels. The state superintendent shall appoint a
6 representative from the department in accordance with
7 paragraph (vii) of this subsection to monitor the school's
8 progress towards meeting the specified goals and
9 implementation of the processes, measures and methods as
10 contained in the school's plan. The representative shall
11 assist the district in identifying and securing the
12 necessary resources to support the goals as stated by the
13 school. Failure to meet improvement goals as specified in
14 the plan for two (2) consecutive years may require that the
15 school be subject to paragraph (vi) of this subsection;
16
17 (vi) Schools designated as not meeting
18 expectations shall file an improvement plan in accordance
19 with paragraph (iv) of this subsection that identifies and
20 addresses all content areas where performance is below
21 target levels. The state superintendent shall appoint a
22 representative from the department in accordance with
23 paragraph (vii) of this subsection to assist in drafting

1 the improvement plan, including the selection of programs
2 and interventions to improve student performance. The
3 representative shall perform duties as required by
4 paragraph (v) of this subsection. The plan shall be
5 approved by the local board of trustees and submitted to
6 the school district superintendent prior to submission to
7 the department. The plan shall describe the personnel and
8 financial resources within the education resource block
9 grant model as defined by W.S. 21-13-101(a)(xiv) necessary
10 for implementation of the measures and methods chosen for
11 improvement and shall specify how resources shall be
12 reallocated, if necessary, to improve student performance.
13 Failure to meet improvement goals as specified in the plan
14 for two (2) consecutive years may be grounds for dismissal
15 of the principal pursuant to W.S. 21-7-110;
16
17 (vii) A representative shall be appointed by the
18 state superintendent for all schools designated under
19 paragraphs (iv) through (vi) of this subsection to serve as
20 a liaison between the school district and the department.
21 The representative shall be an employee of the department
22 or an employee of a Wyoming school district. The
23 representative shall be a distinguished teacher or

professional staff person that possesses the necessary credentials, education and expertise to assist schools appropriately and shall be required to possess the experience, education and expertise commensurate with the level of intervention, support and consequences administered;

(viii) To the extent permitted by law and rule and regulation, plans submitted in compliance with paragraphs (iii) through (vi) of this subsection shall serve to comply with similar requirements administered by the state superintendent and the department to minimize submission of duplicative information, material and the administrative burdens on schools;

~~(iii)~~(ix) In addition to ~~paragraph (ii)~~ paragraphs (iii) through (viii) of this subsection, the state board shall administer this subsection as part of school district accreditation required under W.S. 21-2-304(a)(ii), through appropriate administrative action taken in accordance with W.S. 21-2-304(b)(ii).

1 (h) Measured performance results obtained and
2 collected pursuant to this section, together with
3 subsequent actions responding to results, shall be combined
4 with other information and measures maintained and acquired
5 under W.S. 21-2-202(a)(xxi), 21-2-304(a)(v)(H),
6 21-3-110(a)(xxiv) and otherwise by law, to be used as the
7 basis of a statewide system for providing periodic and
8 uniform reporting on the progress of state public education
9 achievement compared to established targets. The statewide
10 accountability system shall include a process for
11 consolidating, coordinating and analyzing existing
12 performance data and reports for purposes of aligning with
13 the requirements of this section and for determinations of
14 student achievement incorporated into the statewide system.
15 The reporting system shall identify the performance of each
16 public school in Wyoming. The performance report shall
17 include a single overall school score or performance rating
18 along with scores or ratings for each of the indicators in
19 the accountability system that supports the single overall
20 school score or performance rating and provides detailed
21 information for analysis of school performance on the
22 various components of the system. The report shall be
23 disaggregated as appropriate by content level, target

1 level, grade level and appropriate subgroups of students,
2 and shall provide longitudinal information to track student
3 performance on a school, district and statewide basis.
4 Reported subgroups of students shall include, at a minimum,
5 economically disadvantaged students, English language
6 learners, identified ethnic groups and students with
7 disabilities.
8
9 (j) Reporting under subsection (h) of this section
10 shall provide valid and reliable data on the operation and
11 impact of the accountability system established under this
12 section, for use by the legislature to analyze
13 effectiveness and to identify improvements that may be
14 necessary. Beginning school year 2013-2014 and each school
15 year thereafter, the state board shall annually review the
16 statewide education accountability system, including but
17 not limited to a review of the appropriateness of the
18 performance indicators, the measures utilized to
19 demonstrate performance, the statistical methods utilized
20 to calculate school performance, the target levels and
21 statewide, district and school attainment of those levels
22 and the system of support, intervention and consequences.
23 Not later than September 1 of each year, the state board

shall report to the joint education interim committee the information identified in this paragraph in addition to the results of the accountability system for each school in the state.

(k) As used in this section, the "January 2012 education accountability report" means the report prepared by legislative consultants submitted to and approved by the legislature that addresses phase one of the statewide accountability in education system and establishes the design framework for the system. The report is on file with and available for public inspection from the legislative service office and is herein incorporated into this section by reference.

21-2-304. Duties of the state board of education.

(a) The state board of education shall:

(iv) Establish, in consultation with local school districts, requirements for students to earn a high school diploma as measured by each district's ~~body of evidence~~ assessment system prescribed by rule and

1 regulation of the state board and required under W.S.
2 21-3-110(a)(xxiv). Beginning school year 2013-2014 and each
3 school year thereafter, the state board shall annually
4 review and approve each district's assessment system
5 designed to determine the various levels of student
6 performance. A high school diploma shall provide for one
7 (1) of the following endorsements which shall be stated on
8 the transcript of each student:
9
10 (v) Through the state superintendent and in
11 consultation and coordination with local school districts,
12 implement a statewide assessment system comprised of a
13 coherent system of measures that when combined, provide a
14 reliable and valid measure of individual student
15 achievement for each public school and school district
16 within the state, and the performance of the state as a
17 whole. Statewide assessment system components shall be in
18 accordance with requirements of the statewide education
19 accountability system pursuant to W.S. 21-2-204.
20 Improvement of teaching and learning in schools, attaining
21 student achievement targets for ~~core~~ performance indicators
22 established under W.S. 21-2-204 and fostering school
23 program improvement shall be the primary purposes of

statewide assessment of student performance in Wyoming. The statewide assessment system shall:

(B) Be administered at ~~appropriate levels at~~ specified grades ~~and at appropriate intervals~~ aligned to the student content and performance standards, specifically ~~assessing student performance in reading and mathematics at grades four (4), eight (8) and eleven (11), and effective school year 2005-2006, and each school year thereafter,~~ assessing student performance in reading, writing and mathematics at grades three (3) through eight (8) and at grade eleven (11). The writing assessment shall be a valid and reliable measure of student writing according to the writing content and performance standards promulgated under paragraph (iii) of this subsection implementing the common core of knowledge and skills as required by W.S. 21-9-101 and shall allow for monitoring and evaluation of annual trends in student and school level writing performance. In addition, ~~and commencing school year 2007-2008 and each school year thereafter,~~ the statewide assessment system shall assess student performance in science not less than once within each grade band for grades three (3) through five (5), grades six (6) through eight (8) and grades ten

(10) through twelve (12). The structure and design of the assessment system shall allow for the comprehensive measurement of student performance through assessments that are administered each school year simultaneously on a statewide basis;

(D) Measure year-to-year changes in student performance and progress in the subjects specified under subparagraph (a)(v)(B) of this section, and not later than school year 2013-2014, link student performance and progress to teachers of record ~~and compare and evaluate student achievement during the process of student advancement through grade levels~~ and school and district leaders, including superintendents, principals and other district or school leaders serving in a similar capacity. The assessment system shall ensure the integrity of student performance measurements used at each grade level to enable valid year-to-year comparisons and shall be sufficient to capture necessary data to enable application of measures of core indicators as required under W.S. 21-2-204;

(E) Include multiple measures and item types including grade appropriate open response tasks,

including constructed and extended response items as appropriate, and multiple choice items to ensure alignment to the statewide student content and performance standards;

(H) Provide a measure of accountability to enhance learning in Wyoming and in combination with other measures and information, assist school districts in determining individual student progress as well as school level achievement, growth and readiness targets. In addition to reporting requirements imposed under W.S. 21-2-204, the assessment results shall be reported to students, parents, schools, school districts and the public in an accurate, complete and timely manner. Assessment results shall be used in conjunction with a school district's annual assessment to design educational strategies for improvement and enhancement of student performance required under W.S. 21-2-204. Assessment results shall also be used to guide actions by the state board and the department in providing and directing a progressive multi-tiered system of support, intervention and ~~technical assistance~~ consequences to districts in developing school ~~turn-around~~ improvement plans in response to student performance to attain target ~~indicators~~ levels

1 measured and established under W.S. 21-2-204. In
2 consultation and coordination with school districts, the
3 board shall subject to W.S. 21-2-204, review and evaluate
4 the assessment system regularly and based upon uniform
5 statewide reports, annually report to the legislature not
6 later than December 1 as required under W.S. 21-2-204.
7
8 (vi) Subject to and in accordance with W.S.
9 21-2-204, through the state superintendent and in
10 consultation and coordination with local school districts,
11 by rule and regulation implement a statewide accountability
12 system. The accountability system shall include a
13 technically defensible approach to calculate achievement,
14 growth and readiness as required by W.S. 21-2-204. The
15 state board shall establish performance targets as required
16 by W.S. 21-2-204(e) and establish a progressive multi-
17 tiered system of supports, interventions and consequences
18 as required by W.S. 21-2-204(f). The system created shall
19 conform to the January 2012 education accountability report
20 as defined by W.S. 21-2-204(k). In addition and for
21 purposes of complying with requirements under the federal
22 No Child Left Behind Act of 2001, the board shall by rule
23 and regulation provide for annual accountability

determinations based upon adequate yearly progress measures imposed by federal law for all schools and school districts imposing a range of educational consequences and supports resulting from accountability determinations;

(b) In addition to subsection (a) of this section and any other duties assigned to it by law, the state board shall:

(xv) Not later than July 1, 2013, promulgate rules and regulations for ~~the development, assessment and approval of~~ implementation and administration of an annual school district teacher performance evaluation ~~systems~~ system based in part upon defined student academic ~~growth~~ performance measures as prescribed by law and upon longitudinal data systems linking student achievement with teachers of record.~~,~~ The evaluation system shall clearly ~~prescribing~~ prescribe standards for satisfactory and unsatisfactory performance and define teacher of record for purposes of the teacher and school district leader evaluation and accountability system. Rules and regulations adopted under this paragraph shall to the extent student achievement measures are not compromised,

provide district ability to include a portion of an evaluation system designed to address the individual needs of the district. The performance evaluation system shall also include reasonable opportunity for state and district provision of mentoring and other professional development activities made available to teachers performing unsatisfactorily, which are designed to improve instruction and student achievement;

(xvi) Not later than July 1, 2013, promulgate rules and regulations for implementation and administration of an annual performance evaluation system for school and district leadership, including superintendents, principals and other district or school leaders serving in a similar capacity. The performance evaluation system shall include reasonable opportunity for state and district provision of mentoring and other professional development activities made available to district administration personnel performing unsatisfactorily, designed to improve leadership, management and student achievement;

~~(xvi)~~(xvii) Through the state superintendent, implement, administer and supervise education programs and

1 services for adult visually handicapped and adult hearing
2 impaired persons within the state.
3
4 **21-3-110. Duties of boards of trustees.**
5
6 (a) The board of trustees in each school district
7 shall:
8
9 (xvii) Not later than school year 2013-2014 and
10 each school year thereafter, require the performance of
11 each initial contract teacher to be evaluated in writing at
12 least twice annually based in part upon student achievement
13 measures as prescribed by rule and regulation of the state
14 board under W.S. 21-2-304(b)(xv). The teacher shall
15 receive a copy of each evaluation of his performance;
16
17 (xviii) Not later than school year 2013-2014 and
18 each school year thereafter, establish a teacher
19 performance evaluation system and require the performance
20 of each continuing contract teacher to be evaluated in
21 writing at least once each year based in part upon student
22 achievement measures as prescribed by rule and regulation

1 of the state board under W.S. 21-2-304(b)(xv). The teacher
2 shall receive a copy of each evaluation of his performance;
3
4 (xix) Not later than school year 2013-2014 and
5 each school year thereafter, based upon student achievement
6 measures established by the state board of education under
7 W.S. 21-2-304(b)(xv), performance evaluations shall serve
8 as a basis for improvement of instruction, enhancement of
9 curriculum program implementation, measurement of both
10 individual teacher performance and professional growth and
11 development and the performance level of all teachers
12 within the school district, and as documentation for
13 unsatisfactory performance for dismissal, suspension and
14 termination proceedings under W.S. 21-7-110;
15
16 (xxiv) Establish a student assessment system to
17 measure student performance relative to the uniform student
18 content and performance standards in all content areas for
19 which the state board has promulgated standards pursuant to
20 W.S. 21-2-304(a)(iii). To the extent required by W.S.
21 21-2-204 and 21-2-304(a)(vii), the district assessment
22 system shall be integrated with the statewide assessment
23 system and the statewide accountability system. Components

of the district assessment system required by this paragraph shall ~~include the following:~~ be designed and used to determine the various levels of student performance and attainment of high school graduation as described in the uniform student content and performance standards relative to the common core of knowledge and skills prescribed under W.S. 21-9-101(b). Beginning school year 2013-2014 and each school year thereafter, the district shall on or before August 1, report to the state board in accordance with W.S. 21-2-304(a)(iv) on its assessment system established under this paragraph;

(xxx) Not later than school year 2013-2014 and each school year thereafter, in addition to paragraphs (xvii), (xviii) and (xix), require the performance of each school ~~principal~~ district leader, including superintendents and principals and other district or school leaders serving in a similar capacity to be evaluated ~~by the district superintendent~~ in accordance with the statewide education accountability system established under W.S. 21-2-204. Not later than August 15, 2014 and each school year thereafter, in accordance with rules and regulations of the state board, the district board shall also provide the state

board written reports verifying ~~principal~~ school district leader performance and providing performance scores necessary for continued employment;

(b) On or before April 15, ~~of each school year,~~ 2014 and each school year thereafter, each school district superintendent shall provide a report to the board of trustees identifying all teachers and school and district leaders within the district whose performance, through evaluations conducted under paragraphs (a)(xvii) through (xix) and (xxx) of this section, has been determined inadequate or unsatisfactory for that school year. The report shall include a summary of mentoring and other professional development activities made available to the identified school and district leaders and teachers to improve instruction and student achievement. Not later than June 1, ~~of each school~~ 2014 and each school year thereafter, the board shall file a report with the department of education certifying compliance with this subsection.

21-7-102. Definitions.

1 (a) As used in this article the following definitions
2 shall apply:
3
4 (ii) "Continuing Contract Teacher":
5
6 (A) Any initial contract teacher who has
7 been employed by the same school district in the state of
8 Wyoming for a period of three (3) consecutive school years,
9 ~~has performed satisfactorily on performance evaluations~~
10 ~~implemented by the district under W.S. 21-3-110(a)(xvii)~~
11 ~~during this period of time and~~ has had his contract renewed
12 for a fourth consecutive school year and, beginning school
13 year 2013-2014 and each school year thereafter, has
14 performed satisfactorily on performance evaluations
15 implemented by the district under W.S. 21-3-110(a)(xvii)
16 during this period of time; or
17
18 (B) A teacher who has achieved continuing
19 contract status in one (1) district, and who without lapse
20 of time has taught two (2) consecutive school years and has
21 had his contract renewed for a third consecutive school
22 year by the employing school district, and, beginning
23 school year 2013-2014 and each school year thereafter, has

1 performed satisfactorily on performance evaluations
2 conducted by both districts under W.S. 21-3-110(a)(xvii)
3 during this period of time.
4
5 **21-7-110. Suspension or dismissal of teachers;**
6 **notice; hearing; independent hearing officer; board review**
7 **and decision; appeal.**
8
9 (a) The board may suspend or dismiss any teacher, or
10 terminate any continuing contract teacher, for any of the
11 following reasons:
12
13 (vii) Beginning school year 2013-2014 and each
14 school year thereafter, inadequate performance as
15 determined through annual performance evaluation tied to
16 student academic growth completed in accordance with W.S.
17 21-3-110(a)(xvii) through (xix);
18
19 **Section 2.** W.S. 21-2-204(b)(i), (ii), (d)(i) through
20 (iii), (f)(i) and (ii), 21-2-304(a)(vii),
21 21-3-110(a)(xxiv)(A) and (B) and 2011 Wyoming Session Laws,
22 Chapter 184, Section 4(g) and (h) and Section 5(a) and
23 (b)(v) are repealed.

1

2 **Section 3.**

3

4 (a) Notwithstanding 2011 Wyoming Session Laws,
5 Chapter 184, Sections 4 and 5, there shall be no benchmark
6 adaptive assessment implemented or administered as a result
7 of the Wyoming Accountability in Education Act. In lieu of
8 the benchmark adaptive assessment, the statewide assessment
9 system as mandated by W.S. 21-2-304(a)(v) shall be utilized
10 for purposes of determining student achievement and growth.

11

12 (b) Notwithstanding 2011 Wyoming Session Laws,
13 Chapter 184, Section 5(b)(v), the state board, in
14 accordance with and as a part of the assessment system
15 administered in accordance with W.S. 21-2-304(b)(v), shall
16 establish a separate writing assessment to be implemented
17 and administered in school year 2012-2013 and each school
18 year thereafter. The assessment shall be a valid and
19 reliable measure of student writing according to the
20 writing content and performance standards and shall allow
21 for monitoring and evaluation of trends in writing
22 performance on an individual student and school basis. The
23 state board shall report to the select committee on

1 statewide education accountability not later than July 1,
2 2012 on the status of the writing assessment required by
3 this subsection and W.S. 21-2-304(a)(v).
4
5 **Section 4.**
6
7 (a) Notwithstanding 2011 Wyoming Session Laws,
8 Chapter 184, Section 4, the select committee on statewide
9 education accountability shall continue through December
10 31, 2013. The chairman of the senate education committee
11 and the chairman of the house education committee shall
12 continue to serve as cochairmen of the select committee.
13 The members appointed under 2011 Wyoming Session Laws,
14 Chapter 184, Section 4(b) shall continue to serve on the
15 select committee through December 31, 2013. Select
16 committee members shall receive compensation, per diem and
17 travel expense reimbursement in the manner and amount
18 prescribed under W.S. 28-5-101. The appointing authority
19 for any member who vacates membership shall fill the
20 vacancy.
21
22 (b) Notwithstanding 2011 Wyoming Session Laws,
23 Chapter 184, Section 4, the advisory committee shall

1 continue to assist the select committee as the select
2 committee deems necessary through December 31, 2013. The
3 members appointed under 2011 Wyoming Session Laws, Chapter
4 184, Section 4(d) shall continue to serve on the advisory
5 committee. The appointing authority for any member who
6 vacates membership shall fill the vacancy. Any member
7 appointed to the advisory committee which is not an
8 employee of a governmental subdivision or a member of a
9 political subdivision board or commission shall receive per
10 diem and travel expenses in the manner and amount provided
11 state employees under W.S. 9-3-103.
12
13 (c) The legislative service office shall staff the
14 select committee and the advisory committee. The
15 department of education, the state superintendent and other
16 state agencies shall provide information and other
17 assistance as requested by the select committee or the
18 advisory committee. The legislative service office may
19 retain consultants as necessary to staff and advise the
20 select committee in executing responsibilities prescribed
21 by this act. The management council may expend funds
22 appropriated by the legislature for approved contractual

1 agreements between the council and professional consultants
2 on behalf of the select committee.
3
4 **Section 5.**
5
6 (a) The state board, in consultation with the
7 department of education, shall report to the legislative
8 service office not later than August 15, 2012 on the
9 implementation of phase one of the statewide education
10 accountability system as amended by W.S. 21-2-204 and
11 21-2-304(a)(vi). The report shall include the design and
12 proposed business rules for implementation and
13 administration of a fully operational phase one statewide
14 education accountability system by school year 2012-2013.
15 The department of education shall utilize data from the
16 2010-2011 and 2011-2012 school years to demonstrate the
17 operation of phase one of the system and application of the
18 business rules as proposed by the state board.
19
20 (b) The system reported to the legislative service
21 office as required by subsection (a) of this section shall
22 conform to the January 2012 education accountability report
23 as defined by W.S. 21-2-204(k) and incorporate business

1 rules and a plan for administration and implementation
2 which at a minimum includes the following elements:
3
4 (i) A technically defensible approach to
5 calculate achievement, growth and readiness as required by
6 W.S. 21-2-204(d);
7
8 (ii) Performance targets and levels of
9 performance required by W.S. 21-2-204(e);
10
11 (iii) A progressive multi-tiered system of
12 supports, interventions and consequences that will be
13 administered based on the performance of each school at
14 each level as required by W.S. 21-2-204(f);
15
16 (iv) Inclusion requirements, including, but not
17 limited to:
18
19 (A) The identification and definition of
20 students who shall be assessed to determine school
21 performance and accountability with the expectation that
22 all Wyoming students in eligible grades shall participate
23 in the assessment and accountability system;

1

2 (B) Identification and definition of the
3 minimum number of students and data elements acceptable for
4 calculation of school, student and group performance and
5 accountability; and

6

7 (C) Identification and definition of an
8 academic year for purposes of determining school
9 performance and accountability.

10

11 (v) Attribution requirements, including, but not
12 limited to, the identification and definition of school
13 configurations and identification and definition of the
14 linkage necessary between a student and a school that shall
15 be utilized for determining school performance and
16 accountability.

17

18 (c) The legislative service office shall review the
19 report submitted by the state board and department of
20 education in accordance with subsections (a) and (b) of
21 this section and report findings and recommendations to the
22 advisory committee regarding the proposed implementation
23 and administration of phase one of the statewide education

1 accountability system for school year 2012-2013. Not later
2 than September 15, 2012, the advisory committee and the
3 legislative service office shall report to the select
4 committee on recommendations, conclusions and findings in
5 response to the submission of the report.
6
7 **Section 6.**
8
9 (a) Notwithstanding 2011 Wyoming Session Laws,
10 Chapter 184, Section 4(g), the select committee on
11 statewide education accountability shall continue the study
12 of phase one of the statewide education accountability
13 system and initiate phase two of the statewide education
14 accountability study in accordance with subsection (c) of
15 this section. The select committee shall report to the
16 legislature on its findings and include recommendations for
17 implementing legislation and a timeline for implementation
18 when applicable.
19
20 (b) The select committee shall continue to study and
21 develop recommendations as related to phase one of the
22 education accountability act in the following areas:
23

1 (i) Additional measures of assessment and data
2 elements at the secondary level that may account for
3 students taking more than four (4) years to graduate or
4 complete the general educational development tests (GED) or
5 other appropriate measures of high school completion;
6
7 (ii) Additional post secondary and career
8 information that may assist in the determination of growth
9 and achievement as related to career or college readiness.
10 The measures or data at a minimum shall include:
11
12 (A) Consideration of information related to
13 college course completion;
14
15 (B) Remediation needs and rates at both
16 Wyoming post secondary education institutions and to the
17 extent possible, institutions from other states;
18
19 (C) Enrollment and academic performance in
20 advance placement courses;
21

1 (D) Participation in joint enrollment or
2 other post secondary courses while enrolled at the
3 secondary level;
4
5 (E) Qualitative data;
6
7 (F) Attainment of career or industry
8 certification; and
9
10 (G) Achievement of post secondary outcomes.
11
12 (iii) Notwithstanding 2011 Wyoming Session Laws,
13 Chapter 184, Section 4(f)(ii), the select committee shall
14 continue the study of an end of course assessment and
15 assessment systems that measure various levels of student
16 performance as described in the uniform student content and
17 performance standards as required by W.S. 21-2-304(a)(iv)
18 and 21-3-110(a)(xxiv). Not later than September 1, 2012,
19 the state board shall report and make recommendations to
20 the select committee on the use of an end of course
21 assessment system as a component of the statewide summative
22 assessment and for district assessment systems that are
23 designed and used to determine the various levels of

1 student performance for purposes of fulfilling high school
2 graduation requirements. The recommendations shall conform
3 to the January 2012 education accountability report as
4 defined by W.S. 21-2-204(k);
5
6 (iv) Data requirements and systems necessary to
7 support the statewide education accountability system and
8 the goal of improved student and school performance.
9
10 (c) The select committee shall study and develop
11 recommendations on phase two of the statewide education
12 accountability system, including the performance of
13 teachers and school and district leaders, which for the
14 purpose of study includes superintendents, principals and
15 other district or school leaders serving in a similar
16 capacity. Teacher and school district leader evaluation
17 and accountability shall at a minimum include the
18 following:
19
20 (i) A comprehensive definition of an effective
21 teacher and school district leader;
22

1 (ii) A measurement system to evaluate teachers'
2 and school and district leaders' performance relative to
3 the definition of an effective and school district leader;
4
5 (iii) Definition of teacher or school district
6 leader of record;
7
8 (iv) The use of student performance results in a
9 valid and reliable manner;
10
11 (v) At least three (3) levels of performance for
12 teachers and school and district leaders, including highly
13 effective, effective and ineffective;
14
15 (vi) A differentiated system to account for
16 differences between novice teachers or school and district
17 leaders and more experienced teachers or school and
18 district leaders;
19
20 (vii) More frequent evaluation of novice teacher
21 or school and district leaders as compared to more
22 experienced teachers or school and district leaders that

1 receive effective or highly effective performance
2 evaluations for consecutive periods.
3
4 (d) Related to the teacher and school district leader
5 evaluation and accountability system, the select committee
6 shall include a review of performance pay, which shall
7 consider merit-based salary schedules, bonuses, incentive
8 pay and differential staffing practices.
9
10 (e) In addition to subsections (c) and (d) of this
11 section, the select committee shall study and provide
12 recommendations on student and parental accountability
13 providing incentives and sanctions to promote increased
14 student achievement.
15
16 **Section 7.**
17
18 (a) For the period commencing on the effective date
19 of this act and ending June 30, 2014, unexpended,
20 unobligated amounts appropriated to the legislative service
21 office under 2010 Wyoming Session Laws, Chapter 39, Section
22 334(f)(ii), shall be available for expenditure by the
23 legislative service office for professional consulting

1 expertise and other support necessary to carry out and
2 execute the work of the select committee on statewide
3 education accountability as required under this act.
4 Professional consulting expertise may be retained by the
5 legislative service office only upon approval of the
6 management council, and the unexpended, unobligated amounts
7 may be expended for contractual agreements between the
8 council and professional consultants.
9
10 (b) For the period beginning upon the effective date
11 of this act and ending June 30, 2014, seventy-five thousand
12 dollars ($75,000.00) is appropriated from the unexpended,
13 unobligated amounts appropriated to the legislative service
14 office under 2010 Wyoming Session Laws, Chapter 39, Section
15 334(f)(ii) for necessary expenses of the select committee
16 on statewide education accountability established under
17 this act, as necessary to carry out this act.
18
19 **Section 8.**
20
21 (a) Except as provided by subsection (b) of this
22 section, this act is effective immediately upon completion
23 of all acts necessary for a bill to become law as provided

1 by Article 4, Section 8 of the Wyoming Constitution.

2

3 (b) Notwithstanding subsection (a) of this section,
4 W.S. 21-2-304(a)(v)(B) and (E) and (b)(xv),
5 21-3-110(a)(xvii), (xviii) and (xix) and (b),
6 21-7-102(a)(ii)(A) and (B) and 21-7-110(a)(vii) are
7 effective July 1, 2012.

8

9 (END)

THE WYOMING COMPREHENSIVE ACCOUNTABILITY FRAMEWORK: PHASE I

Produced for the:

WYOMING SELECT COMMITTEE ON STATEWIDE EDUCATION ACCOUNTABILITY

By

Scott Marion & Chris Domaleski

NATIONAL CENTER FOR THE IMPROVEMENT OF EDUCATIONAL ASSESSMENT

DRAFT: December 12, 2011

TABLE OF CONTENTS

SECTION I: BACKGROUND

Introduction

Wyoming Senate File 70 set forth an ambitious agenda to reform the ways in which Wyoming schools, educators, and students are held accountable for academic performance. While this new law wlll undoubtedly create some implementation challenges, Wyoming has the opportunity to do something few states have done. By enacting such comprehensive accountability legislation, Wyoming has the opportunity to create a coherent educational accountability framework to improve the likelihood of realizing the goal of making Wyoming education the envy of the nation. This coherence will not emerge simply by following the requirements of the legislation. Rather, the State needs a comprehensive accountability framework to describe in much more detail than can and should be presented in legislation the various components of each system—school, educator, and student—and how they fit together to form the overall Wyoming educational accountability system. This document presents this comprehensive accountability framework to guide the development of current and future accountability systems in Wyoming.

The Wyoming legislature enacted this sweeping legislation out of a strong desire to increase the quality and reputation of Wyoming's educational system, to ensure that Wyoming students can compete effectively in the "flat world" of the 21st Century, and to attract and foster economic development in Wyoming. The sweeping accountability legislation was also motivated by a desire to monitor and perhaps improve the financial efficiency of public education in Wyoming. As several members of the legislature questioned, "are we getting the right bang for the considerable number of bucks we are putting into the educational system?" To be clear, legislators were not looking to reduce funding, they simply wanted to make sure that, as responsible public stewards, they were spending the public's money as wisely as possible.

SF 70 was an ambitious piece of legislation that was created under tight timelines as well as other pressures. As such, it is not perfect. In fact, one of the main purposes of this comprehensive framework is to help guide the development of new legislation during the 2012 session based on a luxury of a more deliberative approach followed during the 2011 interim. Therefore, the reader will notice that many recommendations in this report are not perfectly aligned with SF 70 and occasionally are at odds with the language of SF 70.

This comprehensive accountability framework provides an overview of the elements that must be addressed to design, operationalize, and evaluate a credible and technically defensible education accountability system that supports Wyoming's goals. This is particularly important given the broad reach of Senate File 70 and the multiple purposes and uses of assessment and accountability described. The comprehensive framework outlines the fundamental requirements for school and educator accountability with a focus on establishing coherence among all components. The comprehensive accountability framework is organized in five major sections with multiple chapters within each section, as follows:

I. Background
II. Conceptual Foundations
III. The Multiple Accountability Initiatives
IV. Consequences, Support, and Capacity Building

V. Evaluation and other Technical Considerations

This framework was based on recommendations from the Wyoming Select Committee on Statewide Educational Accountability during the 2011 interim. Additionally, this framework benefited from guidance provided by the Advisory Committee to the Select Committee on Statewide Education Accountability that met several times during the interim as well as providing input via email and telephone conference calls. Given the short time frame during the interim and the broad scope of Senate File 70, it is beyond the scope of this document to provide detailed specifications and recommendations for all areas of the framework. The framework presents a broad sketch of the entire system and outlines the steps necessary to further define aspects of the system not explicated here. For example, in the section on student accountability, we discuss some key considerations to help ensure coherence with the full system, but then outline a process by which the specific decisions could be made.

Senate File 70

Senate File 70 created the "Wyoming Accountability in Education Act" and originally set forth a two-phase approach to the development of a comprehensive accountability system. The first phase directed the Wyoming Department of Education to take specific actions relative to an accountability and statewide assessment system. The second phase established the Select Committee on Statewide Education Accountability and an Advisory Committee of education stakeholders to develop a long-term accountability system. In fact, the two phases have essentially been reformulated such that Phase I has focused on the development of a school accountability system, while Phase II looks to the longer term when educator and student accountability systems are included in the larger framework. We summarize the provisions of SF 70 by using the following categories:

- Statewide assessment
- Statewide accountability including required and recommended indicators
- Longitudinal data systems and reporting
- Policies, consequences, and supports

This report does not deal with aspects of SF 70 in this summary that focus on school funding (e.g., *School Finance Recalibration*) or related matters. Additionally, the intent of this section is to provide a brief summary of the provisions of the law. We offer comments about the provisions in the appropriate sections of the report. For example, we discuss assessment issues in Section XI of this report and in doing so, offer comments and recommendations about the assessment provisions in SF 70.

Statewide Assessment

Most urgently, SF 70 required the Wyoming Department of Education (WDE) to eliminate the open-response questions on the PAWS reading and mathematics tests and to use a writing assessment comprised of a single writing prompt to be administered at a time of the year distinct from the NCLB assessments. The legislature also directed WDE to issue a Request for Proposals (RFP) to hire an assessment contractor to implement the requested changes for the school year 2012-2013.

The legislature also directed the State Board of Education (SBE) to develop and implement statewide benchmark adaptive assessments for the 2012-2013 school year to be administered at the district level. Further, the law directed the SBE to use these assessments for evaluating student growth in math and reading in grades K-8. The Advisory Committee recognized the challenges of using the same assessment system for both instructional improvement and accountability as well as the more powerful growth models available for the state summative assessments and, therefore, recommended not using the benchmark adaptive system to fulfill the accountability growth component. This is discussed in more detail in both the school accountability and growth sections later in this report.

SF 70 directed the SBE to "align statewide assessment components" with the accountability system. This recognizes the need to ensure that the assessment system is able to support the requirements and demands of the accountability system. This is discussed in detail in a subsequent section of this report. Additionally, the legislature directed the SBE to consider alternatives to the current body of evidence system including the potential of using statewide end-of-course exams to replace the body of evidence system. Section III discusses this in the context of a student accountability system.

Additionally the legislature required the administration of two of ACT's tests. The ACT will be administered to all grade 11 students in reading, English, mathematics, and science, while the EXPLORE will be administered to all Wyoming eighth grade students in the same four content areas as the ACT.

Statewide Accountability

The legislature suggested a two-phase approach to the development of the WY comprehensive accountability system. Phase I directs the WDE to begin reporting the performance of Wyoming schools on a variety of indicators, categorized as achievement (status), college readiness, and growth/improvement, while Phase II authorizes the creation of a Select Committee on Statewide Education Accountability along with an Advisory Committee to support the Select Committee to review the indicators and other aspects of decisions that occurred as part of Phase I. In actuality, Phase I and II have operated concurrently and have been somewhat reconceptualized. While certain assessment aspects of SF 70 have been operating according to schedule, this comprehensive accountability framework is being used to guide the development of all accountability components, but presents a fairly detailed sketch of the school accountability system. Again, we return to this in more detail in subsequent sections of the report. For now, we summarize key aspects of the school accountability provisions as outlined in SF 70.

- Achievement (status)—reading as measured by PAWS in grades 3-8, and 11
- College readiness—percentage of students meeting/exceeding college readiness benchmarks in English, reading, mathematics, and science in the EXPLORE and ACT
- Growth/Improvement—SF 70 specifies a fairly unique approach to measuring improvement of performance of WY schools. The law directed WDE to compute "a combined school score for each core indicator" and measure improvement from year to year, beginning with school year 2011-2012. Since these indicators are computed at the aggregate level, it is more appropriate to call these "improvement" indicators rather than growth, which is often focused at the individual student level. The SF 70 improvement model requires the use of 2010-2011 as the baseline year and then to compare the

subsequent results such that a "positive progress" means that the school achieved a "better score than the year before," if there was no change from the prior year, the school would be considered "performance level unchanged," and if the "score declined" from the prior year, it would be called "negative progress." Through the work of the interim, the Select Committee and the Advisory Committee are recommending a different and more sensitive approach to measuring improvement that is based on evaluating the growth of each individual student. This will be discussed in considerable detail in subsequent sections of this report.

SF 70 directed the Select Committee to design a system of measuring teacher and administrator effectiveness including establishing components of effective teacher and leading. The legislation called for a system to replace the performance evaluation currently in place and to have such a system consider consequences and incentives for improved performance.

Longitudinal data systems and reporting

The legislation directed the WDE to adopt rules and regulations [note: only the SBE can adopt rules] for establishing a system of reporting to include longitudinal data on all aspects of the statewide education accountability system. Importantly, SF 70 directs WDE to create student-teacher links so that assessment results can appropriately and fairly be linked to educators of record.

Policies, consequences, and supports

Senate File 70 directs the SBE to consider consequences, starting in 2013-2014, for failure to meet school accountability targets that focus on the development of improvement plans and then escalate to varying levels of required technical assistance. The law wanted SBE to describe time schedules within which underperforming schools should reasonably be expected to achieve improvement targets. SF 70 also directed the SBE to consider failure to meet target accountability targets in the accreditation process

In terms of educator accountability, SF 70 directed the Select Committee to review merit pay methodologies related to teacher performance measures, including merit-based salary schedules, bonuses, incentive pay and differential staffing practices. This is not a requirement, but is a recommendation for the SBE to consider such consequences/rewards as part of the educator effectiveness system.

The legislation recognized important systematic policy issues that could interact with having SF 70 fulfill its intended goals. First, it authorized the Select Committee to review and make recommendations regarding school district board of trustees training needs. This is an important issue considering that the provisions of SF 70 accountability systems will have significant implications for local boards of education. Finally, SF 70 directed the Select Committee to review the likely effect of current laws on student performance. In other words, if there were existing statutes that might hinder the implementation of one of the accountability systems described herein or otherwise negatively influencing student achievement, the Select Committee should identify and make recommendations to ameliorate potential statutory conflicts.

SECTION II: CONCEPTUAL FOUNDATIONS

Goals and Intended Outcomes

The assessment and accountability system design must be guided by the goals and intended outcomes of the system. These goal statements, which are essentially making explicit the legislative intent, also serve as a foundation for the evaluation of the validity of the policy and associated accountability system. Therefore, a critical activity of both the Select and Advisory Committees was to clearly articulate and come to agree on these goals.

The Select Committee was clear that they wanted to see Wyoming's educational system become recognized as a **national educational leader among states**. The feeling among committee members, supported by data from national assessments, was that while Wyoming's students perform above average on national comparisons, they are still in the middle of the pack. Of course, defining what is meant by a "top educational state" is not easy. States rank order differently on any variety of indicators such as NAEP, ACT, AP, graduation, teacher quality, and countless others. In fact, states often rank order differently on different components of NAEP such as fourth grade reading and eight grade math, for example. ACT and SAT scores are notoriously tricky to use as indicators of statewide performance, because even if Wyoming were to mandate that all 11th grade students participate in the ACT, it would not be a fair comparison with states that have voluntary participation. There is a notable negative relationship between average state ACT/SAT scores and participation rate, such that the higher participation rates are associated with lower average scores. Therefore, it makes most sense to use fourth and eighth grade state NAEP results as one set of indicators for general educational achievement. Of course, this does not include high school and so, in spite of earlier cautions about using ACT as an indicator, Wyoming's performance could be compared against the other five or six states (e.g., CO, IL, KY, and UT soon) that require census ACT testing of 11th grade students.

Another major goal for Wyoming education expressed by both the Advisory and Select committees was to improve overall levels of student achievement such that **all students leave Wyoming schools "college or career ready."** Of course, there is not universal agreement of what is meant by this term, and both committees recognized the need to further define the separate components of this phrase (college and career). But, both committees clearly expressed the desire to ensure that all Wyoming students leave high school with legitimate options for a career or postsecondary opportunities. The Select committee was particularly insistent that career readiness did not get buried in the rush to define college readiness, because for Wyoming both college and career readiness were equally valued.

If overall achievement rates are going to increase such that all students leave Wyoming schools ready for college or careers, Select and Advisory Committee members recognized that a more immediate goal would be to **increase the rates at which Wyoming students learn** in each academic year. This is essentially a goal that focuses on improving the academic growth that individual students make from year to year in Wyoming schools. Indicators related to this goal can be evaluated using a variety of student longitudinal growth models, which are discussed later in this report.

An important **equity goal** for Wyoming's educational system is to **reduce and eventually minimize gaps in achievement** among students from historically underperforming student groups. Therefore, a comprehensive accountability system for Wyoming should hold schools accountable for the performance of these groups of students and efforts to reduce such gaps in performance. Additionally, one member of the Select Committee suggested that given the attempts to equalize funding across the state, according to need, we must eliminate the performance gap among school districts. While schools and districts would not be held be accountable for these reductions in gaps among districts, it would be an important goal for the state system as a whole.

While it might go without saying, if all if the goals mentioned above are realized, then the **quality of teaching and leading** in Wyoming schools would have to improve. The two committees recognized the importance of teacher and leader quality as a goal, in and of itself, and declared this to be an important goal of the system in its own right. In thinking through a theory of action (discussed below), improving teaching and leading as a part of both the school and educator accountability systems is a critical stepping stone on the way to improving student learning. It seems obvious that any accountability system should focus on improving the quality of educators in the system, but far too often such systems establish perverse incentives that can actually lead to a decline in educator effectiveness. As part of the coherence principle underlying the development of this comprehensive accountability system, it is critical that the system lead to the positive development of teachers and leaders in Wyoming.

Wyoming lawmakers are proud of the support they have provided to public education, especially over the last 15 years. This is in noticeable contrast to the decimated budgets of public education in many states around the country. On the other hand, as good stewards for the public trust, these same lawmakers are responsible, to the extent they can, for ensuring that public money is well spent. To this end, the Select Committee has stated an efficiency goal for Wyoming education such that the **state is getting an appropriate "bang for its buck."** This should not be read as a desire to scale back the relatively strong funding support experienced by Wyoming schools, rather this goal is simply stating a desire to make sure that all funds allocated for Wyoming to education contribute to the goals outlined above and throughout this document. The legislature, through the Select Committee, has indicated a willingness to spend what it would take to realize these goals, but as responsible lawmakers, would prefer not to spend more than necessary.

Finally, if most or hopefully all of these are realized, the committees would hope to see the **credibility of and support for Wyoming public education increase** among members of the public. This is important for many reasons, but especially if the Wyoming legislature continues its strong support of education, it will be vital that the public recognizes and appreciates the value of this support. Public education is almost always well supported by parents or guardians with students still in school, but as the proportion of the public in this category has shrunk from a high of almost one-third down to less than a quarter of the voting public, it becomes critical that support for education increases its base. As evidence emerges from other states and international locations about the importance of a high quality public education system (actually a P-16 system) for attracting and sustaining business, the policy leaders on both committees recognize that if the

educational system improves to the point where it helps improve the business and economic climate, broad-based public support for education will undoubtedly improve.

Guiding Principles

In addition the goals and intended outcomes, accountability system designs benefit by clarity of the key principles used to guide such designs. This comprehensive accountability framework tried to hold true to the following key principles:

- Instructional Core
- Coherence
- Equity
- Transparency
- Support and Improvement
- State-Local Partnership
- Shared Responsibilities

Instructional Core

One of the key design principles in our work has been the "Instructional Core." The instructional core[1] is a set of principles articulated by Richard Elmore and his colleagues that focuses on the relationship among the students, teachers, and meaningful content (and skills). To quote from City, et al (2003):

> *There are only three ways to improve student learning at scale: You can raise the level of the content that students are taught. You can increase the skill and knowledge that teachers bring to the teaching of that content. And you can increase the level of students' active learning of the content. That's it. Everything else is instrumental. That is, everything that's not in the instructional core can only affect student learning and performance by, in some way, influencing what goes on inside the core. Schools don't improve through political and managerial incantation; they improve through the complex and demanding work of teaching and learning (p. 24).*

This is a critical principle and challenges one to think hard about how best to honor this dynamic in the context of designing a large scale accountability system. Nevertheless, the Advisory Committee felt that it was important to maintain a focus on the instructional core throughout the design deliberations.

Coherence

The systems, particularly the school and educator accountability systems must incentivize common and mutually supportive behaviors among teachers and leaders in schools. Wyoming, as a result of SF 70, has a unique opportunity to design school, educator, and student accountability systems all within a short time frame. This will allow Wyoming to develop mutually reinforcing and coherent systems, but this is easier said than done. There are many ways to get tripped up on the way to coherences and the current and subsequent design

[1] City, E. A., Elmore, R. F., Fiarman, S. E, & Teitel, L. (2003). Instructional rounds in education: A network approach to improving teaching and learning. Cambridge, MA: Harvard Educational Press. [see particularly, chapter 1: The Instructional Core].

committees need to continually check design systems withln any one of the systems against the likely unintended negative consequences that could occur within that system as well as within the other systems. For example, an indicator for the school accountability system is the improvement student achievement in reading and mathematics, but if they educator evaluation system was designed such that there was a "zero sum game" where only half or so of the educators in a building could be rated high on the growth indicator, the two systems would be in direct conflict because educators would not have an incentives to work together to improve the performance of the overall school.

Equity

To match the intended outcome of improving the equality of educational opportunities for all Wyoming students, the Advisory Committee recognized the importance of designed the accountability system to support the reduction in gaps of performance/growth for specific groups and individual students. This would play out in terms of a design principle by ensuring that key indicators in the system are disaggregated by specific groups of students, that the accountability metrics are not designed to mask underperforming groups, and the system incentivizes behaviors to promote improved performance of all students in the system.

Transparency

Unfortunately a very simple accountability system is rarely fair and an extremely fair system is rarely simple. Nevertheless, the Advisory Committee urged that the design of the system must be only as complicated as necessary to support the major goals and guiding principles. No matter how complex, the workings of the system should be as transparent as possible such that anyone using the same data set and with appropriate technical understanding could replicate the analyses for any school or the state as a whole. Further, the State must communicate the design and results of the system in ways that can promote an accurate understanding of the system for as many stakeholders as possible.

Support and Improvement

An accountability system can be designed to rate schools or teachers according to some criteria. If that is all that occurred, the accountability would not fulfill the intended goals and outcomes described above. Both the Select and Advisory Committees were clear that the systems should be designed to maximize opportunities to support and improve schools' and educators' performance rather than focus on punitive sanctions. In fact, both groups recognized that it made little differences regarding the accuracy with which the system could label or rank schools, if there was not a parallel system of support, interventions and capacity building also in place. This is discussed in considerable detail later in this document.

State-Local Partnership

Given the strong local control culture in Wyoming and to ensure that districts are encouraged to play their critical role in improving and supporting schools, the systems will be designed to incorporate district expertise and capacity in the accountability design. If the system is to function as intended and realize the goals set forth herein, this cannot be seen solely as a top-down state compliance mandate. Rather, districts and schools will have to be engaged and included as partners in key aspects of the design, implementation, and support associated with

the various accountabillty initiatives if the system will lead to improved outcomes for Wyoming students.

Shared Responsibility

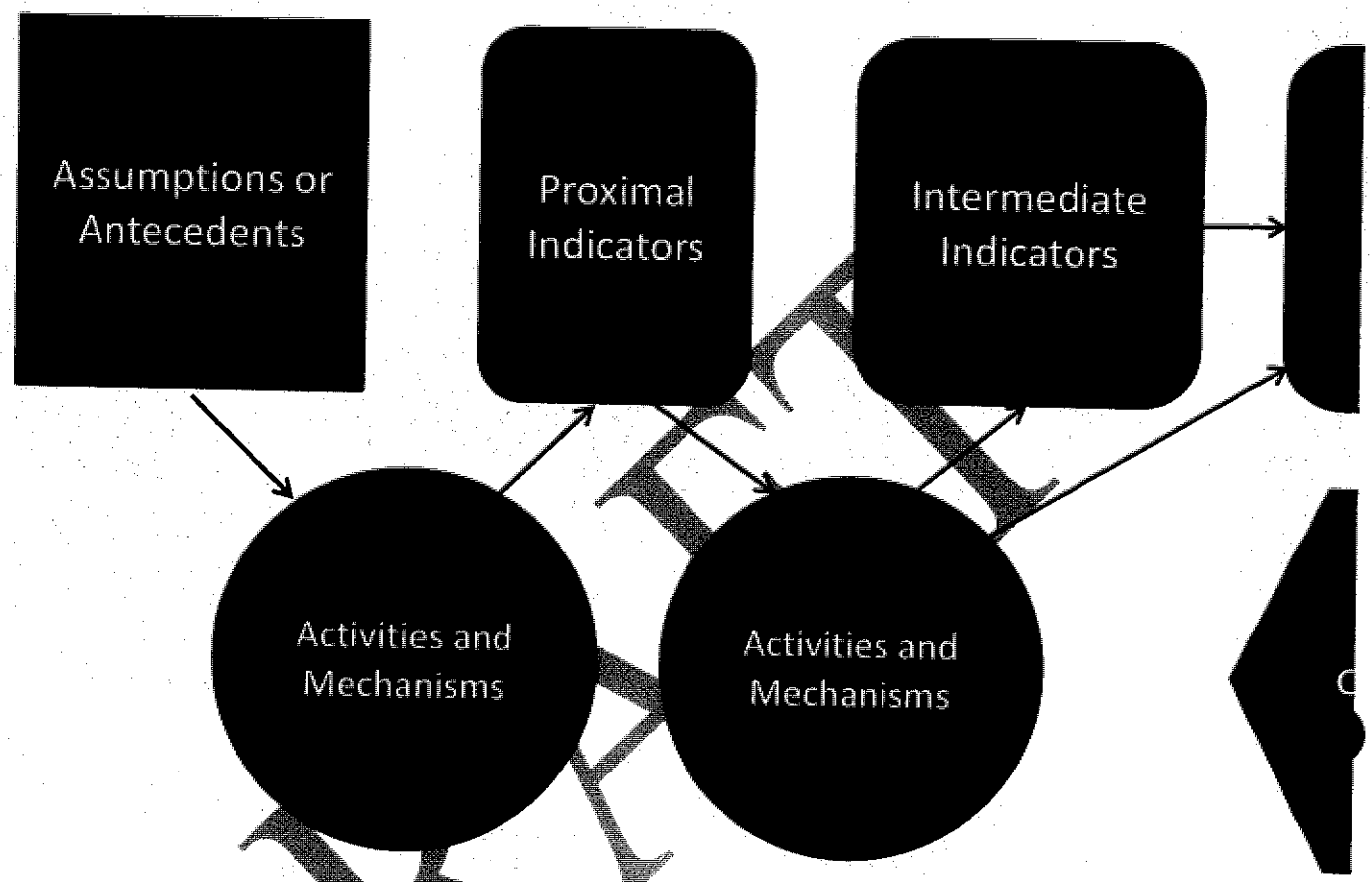
The Advisory Commlttee recognizes and wants to make clear that the issue of improving Wyoming education is not solely a function of educators or even educational policy makers. Rather, the committee was emphatic that this needs to be a shared responsibility among parents, students, communitles, and all policy makers. We use a few examples to illustrate this critical issue. If the school accountability system is going hold high schools accountable for ensuring that its student graduate, the state legislature could support this goal by requiring that students not be eligible to legally drop out of school at least until their 18th birthday. At least one state that has increased the dropout age from 16 to 18 years has seen a noticeable reduction in the dropout rate. A more exaggerated example can be seen in the discrepancy between the penalties for having a truant child compared with getting a ticket for having a dog running at large. A more substantial example involves the investment that would be required if the State was to seriously attempt to address the gap in educational opportunities that are present before students even enter kindergarten. To fully address this issue with universal, high-quality day care and preschool, appropriate nutrition and medical care, along with a host of other opportunities would require a significant policy and fiscal commitment. There is certainly a wealth of evidence to suggest such investments in early childhood health and education is associated with significant long term benefits to both individuals and society. These are just a few examples of how some significant educational challenges can be addressed by both within school initiatives and external policy support.

Theory of Action

A theory of action (TOA) is a useful tool for designing for accountability systems. A TOA explicates the goals of the system, clarifies assumptions supporting or constraining the system, and most importantly explicates the mechanisms by which the various components work together that describes how the system will bring about the desired results. Several researchers (e.g., Bennett, 2010; Marion & Perie, 2009) have employed theories of action as a way to help states and others both design and evaluate complex accountability and assessment systems. A theory of action, drawn from the evaluation literature (e.g., Wholey, 1979), is intended to portray what is essentially a logic or causal model that describes how programs are intended to work. A theory of action lays out the inputs or antecedent conditions, proximal, intermediate and distal outcomes, and importantly describes the mechanisms or processes that specify the logic by which these components are sensibly related.

The general structure for a theory of action is seen below in Figure 1. Following this schematic, we present the foundational principles for the entire system. We then outline the various components of the theory of action for the school accountability systems. Subsequent reports in Phase 2 should provide a theory of action of the educator and student accountability system.

Figure 1. Basic Structure of a Theory of Action.



Major Goals/Intended Outcomes of the System

1. Improve overall levels of student achievement such that all students leave Wyoming schools "college or career ready."
2. Increase the rates at which Wyoming students learn in each academic year (growth).
3. Reduce and eliminate gaps in achievement and especially growth for key subgroups.
4. Improve teacher and leader quality in Wyoming.
5. Increase public credibility and support for Wyoming public education.
6. Increase the "efficiency" of schooling in Wyoming.
7. Have Wyoming viewed as a national education leader among states.

Antecedents

1. Schools are funded at levels adequate to support high levels of student achievement.
2. The learning targets (standards) are clear and support curriculum and instruction.
3. Educators (teachers & leaders) have the knowledge and skills necessary to improve student learning.

4. The state summative assessments in ELA and mathematics provide technically defensible student scores for reporting a "status" (proficiency) measure related to the state content standards.
5. The state summative assessments in ELA and mathematics provide technically defensible student scores for calculating the growth in student performance across consecutive school years. The school accountability system supports a collective vision of school improvement and responsibility.
6. Key stakeholders agree that the school accountability system represents a broad set of indicators necessary for characterizing school quality, while focusing on those indicators most likely to leverage positive change.
7. Schools and districts have the capacity to support the data collection and improvement efforts related to school accountability.
8. WDE has the capacity to implement and support the school accountability system including working with schools to improve their performance over time.

Proximal indicators (numbers) and mechanisms (bullets)

1. Measuring and reporting student longitudinal growth provides information that educators use to judge the quality (effectiveness) of educational programs.
    - Educators and other stakeholders will use this information to fine-tune, alter, and/or eliminate specific programs/interventions to focus on those with the greatest likelihood of producing gains in student learning.
    - Having access to high quality information on student progress will allow educators to more easily develop cultures of data use for making educational decisions.
2. Measuring and reporting student longitudinal growth provides information for students, parents, and other key stakeholders to more accurately judge the progress each student is making for each school year.
    - Parents and others will advocate for more effective educational programs and interventions for their students.
    - Students will receive information that will enable them to better monitor their own progress.
3. District-selected interim assessments fully aligned to WY standards and/or CCSS and administered at least multiple times throughout the school year are used to monitor student learning throughout the school year.
    - Teachers and others use the interim assessment results to monitor and adjust the instructional programs for students.

Intermediate indicators (numbers) and mechanisms (bullets)

1. Clear and actionable assessment/accountability reports accurately portray schools in terms of achievement (status), student longitudinal growth, and other key indicators (e.g., graduation rates, college/career readiness).
    - Data are used to improve the quality of interventions and programs at Wyoming schools.
    - The assessment system, accountability calculations, and reporting systems provide information for school leaders to support and improve the quality of teaching.

2. The data and decisions from the school accountability system contribute to local educator evaluation systems in ways that allow excellence to be recognized and collaboration is encouraged.

Distal indicators

1. The average teacher and leader quality statewide improves and the variance at the lower ends of quality is reduced.
2. There is an increase in high quality applicants for open teaching positions.
3. Students grow at rates that lead to increased levels of college and career readiness compared to current rates.
4. Student achievement will improve statewide as evidenced by increases on state assessments, NAEP, and related assessments.

Consequences (intended and unintended)

1. The system is designed in such a way as to maximize the likelihood of the distal indicators being fulfilled.
2. Schools that do not meet prescribed state accountability standards are subject to increasing levels of actions including filing school improvement plans, working with a "distinguished educator," replacing the school leader, and/or other consequences as determined by the State School Board.
3. Schools that excel on school accountability indicators may be afforded certain flexibility such as freedom from certain WDE or other requirements [is this possible?].
4. The accountability system does not lead to a narrowing of the curriculum or other meaningful opportunities for students.
5. The accountability system does not lead to Wyoming teachers leaving the state for other teaching opportunities

SECTION III: THE MULTIPLE ACCOUNTABILITY INITIATIVES

This section of the report presents information and recommendations for developing school, educator, and student accountability system. As noted earlier, we provide considerably more details on the development of and recommendations for the school accountability system since that has been the focus of the Phase I efforts. We then outline key considerations and recommendations for processes to develop educator and student accountability systems. As discussed above, a key principle guiding the development of this section of the report was an intention to create a coherent approach to educational accountability such that the important goals set forth earlier might best be achieved.

As part of development a comprehensive accountability and support system, the Advisory Committee worked from a theory of action focused on continuous improvement of the system. As part of these discussions, the committee recommended clarifying the differences among data collection, reporting, and accountability and supported an approach whereby more data were collected and reported than might be used as accountability indicators. The intent is not to create a "data dump," but to collect information on targeted areas that could be useful to schools for improving the performance on the accountability indicators. For example, graduation rate will be a key indicator for the school accountability system, but the advisory committee recommended collecting data and reporting results on indicators such a 9th grade credit accumulation because of its strong relationship to dropping out of school. The reader may question why we are not including 9th credit accumulation in the accountability system if it is such a good indicator, but the committee recognized quickly the highly corruptible nature of such an indicator if used for high stakes accountability.

School Accountability Framework

Introduction

In this section we describe the overall framework for the school accountability system, possible indicators that will likely comprise the core components addressed in the school accountability system, and some initial thoughts about how the various indicators may be combined to create overall determinations. This will be followed in subsequent sections by a more in-depth treatment of design issues.

Indicators

The building blocks of an accountability system are the indicators or measures that produce information about school performance. Indicators serve at least two critical functions in an accountability system. First, the selected measures signal and, hopefully, promote the valued behaviors for school leaders and educators. For example, if it is desirable to increase achievement in mathematics, including performance on mathematics assessments should encourage schools to focus on mathematics instruction. In this manner, the identified indicators ***serve as a policy lever to promote desired actions***. It should be clear, then, that the identification of indicators must be closely linked with the theory of action for the accountability system. Second, ***indicators contribute to overall measures or classifications of school performance.*** Accordingly, measures should be selected that capture an important component of school quality

linked to the intended use. For example, if the desire is to identify schools that are 'failing' and should be considered for restructuring, indicators must be selected that provide information well-suited to differentiate and classify schools that meet minimum performance expectations from those that do not.

Naturally, to the extent that indictors are used to influence high-stakes accountability outcomes, they must be reliable and trustworthy. There will almost certainly be dimensions of school quality that are important to capture but are too variable or corruptible to be used for high-stakes purposes. For example, policy makers may agree that 'parent engagement' is an important dimension of school quality, but in the absence of a suitably meaningful and standardized method for measuring this component, it would be unwise to include the indicator for high-stakes decisions. This is not to suggest that schools should not attempt to measure or even, in some circumstances, publicly report outcomes. Rather, our caveat pertains to use of 'soft' measures in high-stakes decision making.

In selecting and defining indicators there are a number of additional considerations that should be carefully weighed. We can regard these considerations as being related to 1) the number of indicators 2) type of information produced and 3) unit of analysis. With respect to the number of indicators, it is certainly desirable to include varied information to better understand and account for the many factors that define school effectiveness. Generally speaking, the inclusion of multiple measures bolsters the validity of the outcomes. On the other hand, too many elements may make the model complicated to understand and burdensome to implement. Taken to the extreme, such an approach could be regarded as simply a 'data dump' where it is difficult to detect the signal through the noise. There is a real risk that by including too much, policy makers will lose sight of what is most important. For this reason, we recommend that the system be built around indicators that reflect the most prominent values in Wyoming's theory of action.

The second consideration is related to the measure or type of information one elicits from the indicators. For example, when considering assessment results one might use a scale score or classification with respect to an identified standard (e.g. basic, proficient, advanced) which can be aggregated and reported as 'percent proficient.' The latter approach carries the advantage of being straightforward and easy to interpret. However this masks degrees of difference within performance levels, which is conveyed with scale score. Similarly, when working with outcome measures, such as graduation, one can produce a broad measure, such as graduation rate, which simply reports the percentage of students in a cohort who achieved this outcome in a set period of time. Alternately, a more granular approach to including outcome indicators can be adopted that provides detailed information, but may add to the complexity of the system.

Finally, it is important to consider the unit of analysis for the selected indicators. Critically, decisions about unit of analysis should match the goals and priorities of the system. Because an important outcome is to ensure equity of opportunity and achievement, it is essential to track indicators for groups of students for whom equity concerns are most important (e.g. students with disabilities, English language learners, economically disadvantaged students etc). For example, consider test performance as an indicator. This can be reported as percent proficient and aggregated to the subgroup, grade, school, district, or state level (or some combination thereof). If the decision is to report for relatively small units, such as subgroups within schools,

there must be a high degree of confidence that the student information system supports this and an understanding that some units may be very small and data may be highly variable and ill-suited to support inferences. Finally, the sheer volume of information produced will make the design of clear, coherent reports more challenging. On the other hand, if the system is based on a higher level of analysis, this will likely be more straightforward to operationalize and report and better suited to support inferences. However, this higher level of aggregation may mask important information for policy makers.

In selecting and defining indicators, the overall goal is to create a balanced model that is suitably 'granular' to provide specific actionable information but sufficiently robust to support meaningful claims about school performance. Additionally, the model should be simple and transparent enough to be easily understood and implemented.

Based on the requirements of SF 70 and the feedback received from the Select and Advisory committees, we propose the following indicator categories.

A. **Achievement** – How do students perform on state assessments designed to measure proficiency on Wyoming state standards?
B. **Growth** – Are students demonstrating acceptable progress with respect to performance on state standards?
C. **Readiness** – Do students graduate college and career ready?
D. **Equity** – Are the lowest performing students attaining proficiency or demonstrating acceptable progress toward proficiency?
E. **Inclusion** – Are all students participating in the accountability system?

In the sections that follow, suggestions for identifying specific indicators to be included as well as advice for including these components in the accountability system are presented. For added clarity, design illustrations are presented to aid in conceptualizing alternatives. However, these illustrations should not be regarded as exhaustive or proscriptive, rather they intended to help bring shape to ideas in order to better evaluate options to promote intended policy objectives.

Achievement

Achievement refers to indicators that provide information about student academic performance with respect to Wyoming state standards. At a minimum, Senate File 70 proscribes that the system address "core indicators of student performance" to include reading as measured by PAWS – grades 3-8, and 11. In addition to reading, we recommend inclusion of PAWS mathematics results in the accountability system.

The inclusion of science and writing was a matter of some debate in the Advisory Committee meetings. While committee members endorsed the importance of promoting achievement in science and writing there was some concern that the current assessments were not well suited to promote the desired outcomes and should have little to no influence in the accountability model.

Furthermore, we recommend the inclusion of alternate assessments in each grade/ content area for which a general assessment is incorporated in the achievement calculation. This ensures that schools are accountable for the performance of all students.

Achievement Design Illustrations

As noted earlier, there are number of options for how to include achievement information in accountability systems. A common alternative is to use percent of students meeting a target performance standard – typically proficiency or level 3. While this measure is fairly course, it is conceptually clear to stake holders and prioritizes a valued outcome.

Given that there are multiple grades and content areas, one way to accomplish this is to simply compute the ratio of all proficient students across all grades and content areas at the school, and divide this by all examinees as depicted in Table 1.

Table 1. Illustration of Combined Proficiency Calculation.

Number of Math Examinees	200	Number Math Proficient	160	Percent Math Proficient	80%	Total Proficient (330/405)	81.5%
Number of Reading Examinees	205	Number Reading Proficient	170	Percent Reading Proficient	83%		

The resulting percentage can then be adjusted by a factor to determine the overall weight or influenced in the model. For example, if proficiency is intended to be expressed on a scale from 0 to 300, multiplying the result from Table 1 (.815) by 300 will produce a metric that ranges from 0 (no students proficient) to 300 (all students proficient). In the example depicted in Table 1 a school would receive 245 of 300 points.

There are a number of possible variations on this approach. One variation is to weight one content area test more or less than another. For example, if science were included and one desired that science results account for only 20% of the outcome, math and reading could each be adjusted to contribute 40% to the overall outcome and the remaining influence would come from science.

Another variation is to create a performance index such that schools get some 'credit' for students in level 2 – rather than an 'all-or-nothing' measure. This can be accomplished by creating a ratio such that student scoring at levels 2, 3, 4 on the state assessment and those scoring at levels 3 and 4 only are divided by all examinees. This figure would be multiplied by 150 (half of the maximum value of the scale) to get a total score out of 300. By so doing, schools essentially receive half of a credit for students who score at the basic level and a full credit for students who score at the proficient or advanced level (see Table 2).

Table 2Table 2: **Illustration of Index with 'Partial Credit' for Basic Performance**

Performance Level	N	Number Basic or Above	Number Proficient or Above	Calculation	Result
Below Basic	40	160	105	$\left(\frac{160+105}{200}\right)150$	199 out of 300
Basic	55				

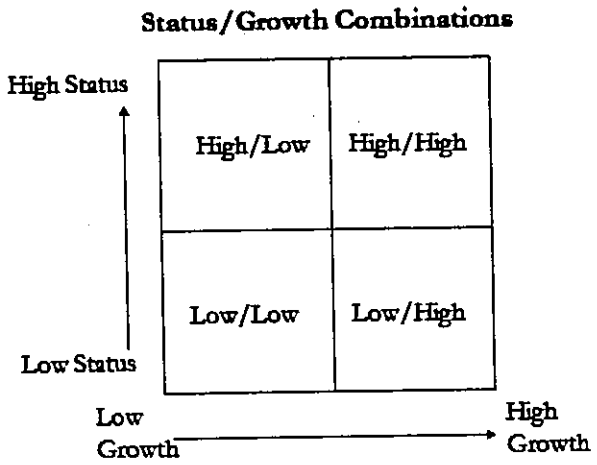
Proficient	85				
Advanced	20				
Total	200				

Growth

The achievement category is based on 'status' indicators, which show how students are performing relative to a criterion (proficiency) at a single point in time. However, it is also important to include growth, which measures change in performance for the same student or cohort of students over time. Examining the combination of growth and status performance for schools provides a much richer picture of school quality than either component in isolation.

Figure 2 shows 4 possible outcomes for schools taking into account both status and growth. Naturally, the most prized result is for schools to be in the top right quadrant, where most or all students are proficient on state tests and all students are growing at a high rate. The converse of this is shown in the bottom left quadrant in which relatively low percentages of students are proficient and the growth rate is also low – an obviously undesirable outcome. Including growth also helps identify and give credit to schools in which proficiency may be low but students are growing at an exceptionally high rate (bottom right quadrant). On the other hand, it's important to understand which schools have traditionally high performing students, but show relatively low or no growth (top left quadrant). This may describe a school with affluent, historically high achieving students who are languishing.

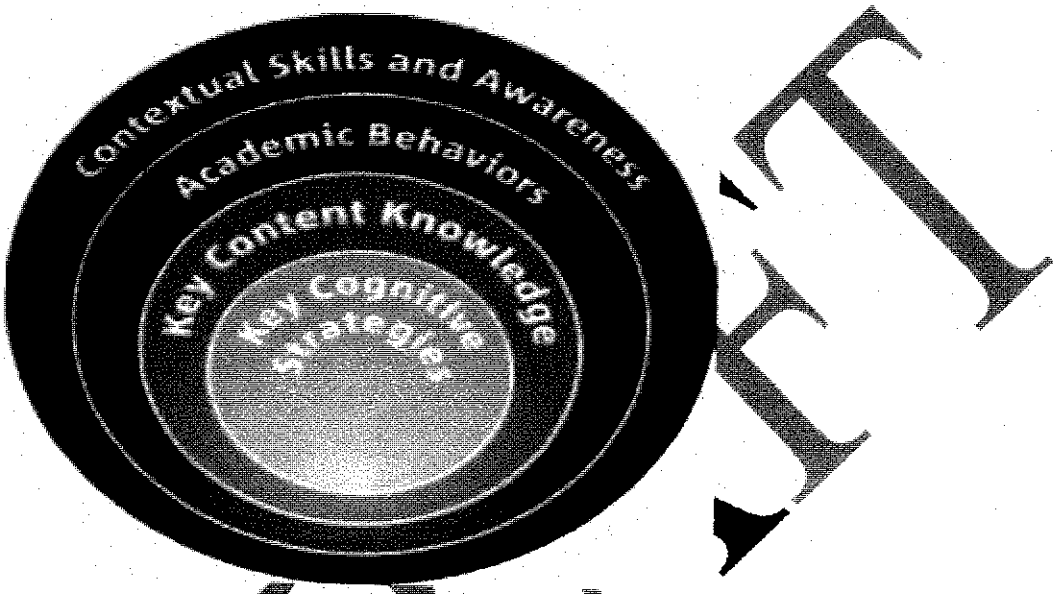
Figure 2: Status and Growth Combinations



There are many promising approaches to measuring and including growth in education accountability systems. Due to the scope and complexity of this issue, we address this topic separately in the next section of this document.

Readiness

In an accountability system that prioritizes college and career readiness it is important to include indicators that signal that a student is prepared to be successful in college or a career or is 'on-track' to meet this expectation. There are numerous potential indicators for this category, particularly when one considers that 'readiness' is a multi-faceted dimension that goes beyond academic performance and includes such characteristics as academic behaviors. David Conley (2005) and his colleagues at the University of Oregon have provided a powerful framework for thinking about college readiness. This framework is depicted in the following graphic and described below.



- ✓ Key Cognitive Strategies are also known as "habits of mind" and include skills such as inquisitiveness, persistence, and intellectual openness.
- ✓ Key Content Knowledge is broken into overarching types of knowledge such writing and the ability to conduct research and core academic knowledge that includes much of the focus of high school learning, such a mathematics, language arts, science, and social studies.
- ✓ Academic Behaviors are critically important skills for independent learners to possess and include such things as self awareness, meta-cognitive, and self-regulation.
- ✓ Contextual Skills are often referred to as "college knowledge" and include knowing how to navigate oneself around college system and deal with such things as financial aid, applications, enrollment, and other details that can easily sideline otherwise "ready" students.

This invites consideration of 'non-traditional' measures which can provide a much broader view of readiness, but also presents challenges related to lack of standardization or corruptibility of measures. For this reason, we suggest distinguishing between more standardized readiness measures that are suitable for contributing to school accountability classifications versus those 'softer' measures that should be reported but not used for high-stakes decision making.

Addressing the latter category first, we suggest that Wyoming explore the possibility of collecting and reporting a set of indicators that could include some of the following:

- Course completion/ success
  - Enrollment and/or performance in AP/IB or other 'advanced' courses
  - Participation in joint-enrollment or other post secondary courses at the secondary level
- Qualitative data (e.g. survey data of attitudes, academic habits etc.)
- Attainment of career/ industry certifications
- Achievement of post-secondary outcomes
  - Enrollment in credit bearing courses
  - Attainment of qualifying career, enrollment in the military etc.

While these are not common to school accountability models and may be difficult to track, it can be argued that they provide valuable information to evaluate the fundamental claim that students are on track to or have exited high school ready for college and/or the workforce. It should be noted that these are *preliminary* ideas discussed by the Advisory Committee and we suggest additional exploration with higher education and workforce leaders to better understand what is feasible (e.g. data capabilities) and appropriate to include.

Alternatively, we suggest two categories of indicators that we believe are promising for inclusion in accountability determinations: academic performance and graduation rate.

Academic performance refers to achievement on tests that are explicitly linked to college or career readiness. Two such assessments which are specifically cited in SF70 are:

- EXPLORE: measure of progress toward college readiness, typically administered in grade 9 (but reflects performance through grade 8).
- ACT: measure of attainment of knowledge and skills associated with college readiness, typically administered in grade 11.

Graduation rate provides an indication of student outcomes at the completion of high school. Naturally, the most desirable outcome is for students to graduate on-time with a diploma that certifies the student is ready to succeed in college or the workforce. Other less desirable outcomes are also possible such as a GED or certificate of attendance.

Readiness Design Illustration

A straightforward approach for including EXPLORE and ACT results in the accountability system could correspond to the method previously described for achievement (i.e. PAWS) indicators. However, in lieu of proficiency, the primary criterion becomes the percent of students meeting an identified readiness benchmark. One simply multiplies the percent of students meeting the benchmark by the selected maximum value of the category. Another approach would be to create an index for ACT scores that would be based on key benchmark. For example, schools could be awarded 50 points for each student scoring at the entry level benchmark into credit-bearing classes for Wyoming community colleges (e.g., 18), 100 points for scoring at the national average, 125 for scoring at the important college ready benchmark of

24, and 150 points for students scoring at a score of 27 or 28. This is only an example. The actual benchmark scores and point values should be recommended by the Advisory Committee after gathering appropriate information from higher education and other stakeholders. This index could be computed on the ACT composite score, but might be more useful if computed at the individual test level (math, reading, science, language).

There was some concern that incorporating ACT into the accountability is simply adding another "status" measure that is correlated with student and school socioeconomic status. The Advisory Committee was interested in exploring the use of either or both improvement and growth measures to provide a way for less advantaged schools to do well on this metric. For example, schools could be evaluated on how much their ACT index or indices change every year of over a three year period. Similarly, schools could be evaluated on how much student performance improves as the students move from the EXPLORE to the PLAN and then to the ACT. This could be the fairest measure of high schools' contribution to readiness, since it takes into account where students start in this domain.

While graduation rate can be similarly incorporated into the accountability system, it may desirable to consider multiple levels of performance. To accomplish this, an index can be created that awards points in proportion to the value of the outcome in year 4 as illustrated in Table 3. The score for this component is simply is the average of all student outcomes for the high school.

Table 3: Example of Graduation Index

Student Result	Points
Diploma with completion of required college/ career ready course work	100
Other diploma	85
GED	50
Continued enrollment (no outcome)	25
Certificate of attendance	25
Dropout	0

The data in the table are intended to be illustrative, the actual categories and point values would be determined based on Wyoming's goals and policy priorities. Importantly, both the categories and values should be defined by bringing together a broad-based group of Wyoming education leaders and stakeholders to define priorities.

One additional factor to consider is that students may graduate in more than four years. While this is less favorable, there may be important reasons to account for and incentivize this result in an accountability model. One approach to account for this is to award incentive or bonus points for outcomes in subsequent years. For example, a student who maintains enrollment in year four

but does not earn an outcome receives the corresponding points in the index (25). If the following year the student earns a GED they get a portion of these points (e.g. 10%) added to the index value for their school. The incentive points are then averaged for all students with delayed outcomes and added as a 'bonus' to the index.

Equity

Another category that should be addressed in a comprehensive accountability system is the extent to which *all* groups of students are achieving success. In the best case, not only will schools improve achievement overall, but they will also erase what are often persistent and sizeable gaps in performance between highest and lowest performing student groups.

There are at least two key questions to consider in evaluating alternatives for equity measures.

1. Which group(s) should be the primary focus for equity?
2. What equity outcomes are most important to promote?

Equity groups can be defined based on one more demographic factors (e.g. ethnic group, economically disadvantaged status, students with disabilities). Or, it is possible to combine multiple groups in a single subgroup. By so doing, schools that otherwise would have too few students in any one group to produce a determination will be included in equity outcomes. Additionally, the larger group size will produce more stable results.

Another way to define focal groups for equity, which we believe is the most promising alternative, is to determine membership based on performance as opposed to demographic factors. For example, the group is defined as students who fail to meet proficiency on state tests. This approach ensures that schools focus on improving outcomes for all students who are low performing.

A second consideration is determining the equity outcomes that should be promoted in the accountability system. In keeping with the values inherent in SF70 and expressed by the Advisory committee, we propose that the expectation for students below proficient is to demonstrate satisfactory academic progress or growth to proficiency. Specifically, we recommend producing a separate growth measure for non-proficient students that is meaningfully linked to attaining or maintain proficiency. This will exert substantial influence on the results for schools and explicitly communicate progress of low performing students, rather than masking outcomes in summary data. Moreover, this will reward schools making the most progress with low performing students and penalize schools making the least progress. In the subsequent section on growth, we will provide more details regarding this proposed approach.

Inclusion

Finally, schools must be accountable for including all students in accountability determinations. This helps insure that results are not manipulated by excluding low performing students. This can be addressed in a straightforward manner by reporting participation rates for all indicators and setting a very high minimum threshold, such as 95%. However, it is reasonable to include results in performance determinations for only those students who were present at the school for

the full academic year. These aspects are typically handled in the 'business rules' for operationalizing the system, which is otherwise beyond the scope of this document.

Growth

In this section we provide an in-depth discussion of using growth in a comprehensive accountability system, with a detailed illustration of design alternatives using Student Growth Percentiles (SGP).

Growth Alternatives

During the Advisory and Select Committee meetings, members were introduced to and discussed a variety of approaches to measuring academic growth. Although classification schemes have limitations (most notably: they are not mutually exclusive), four general categories of growth were presented to aid in conceptual clarity: categorical, gain score, value-added, and normative. These approaches and the prominent advantages/ limitations of each are summarized in Table 4.

Table 4: Overview of Growth Alternatives

Method	Description	Answers what question?	Advantages	Limitations
Categorical	A measure of the change in performance level category from time 1 to time 2	Did the student advance or decline performance levels?	-Straightforward to understand and implement - Clear relationship to status	-Insensitive to large growth or overly sensitive to small growth -Influenced by test properties -Not well suited for very high and very low performing students
Gain Score	The difference between scores between time 1 and time 2	What is the magnitude of student growth?	-Straightforward to understand and implement -Results on a familiar scale with known relationship to status	-Requires vertical scale - There are technical concerns with vertical scales - Magnitude of growth cannot be interpreted the same for all students
Value-Added	Regression based approach that controls for multiple variables to determine the difference between actual and predicted growth	To what degree was the student's performance higher or lower than that of similar students?	- Accounts for multiple factors that influence growth -Provides a definition of 'typical growth' based on similar students -Expectations are adjusted based on abilities and characteristics	-More complex to implement -Including background variables can be controversial -No 'built-in' relationship to status, but growth targets can account for this
Normative	Regression based measure that conditions current achievement on prior achievement to describe performance relative to students with identical prior achievement	To what degree is performance higher or lower than expectations, based on students with similar academic history?	-Provides a familiar basis to interpret performance – the percentile -Provides a definition of 'typical growth' -Expectations are adjusted for students of various abilities	-More complex to implement -No 'built-in' relationship to status, but growth targets can account for this

As should be evident, there is no single correct approach to growth or method that stands-out as the 'gold-standard.' The decision regarding which analytic approach should be adopted should first be considered in context to the purpose for measuring growth and the desired model

characteristics. In the best case, the selected model should produce outcomes that are reliable and valid for the intended uses and produce results that are clear and easily understood by stakeholders. Additionally, the model should be practically feasible to implement and maintain.

Given that alternative analytic approaches and model specifications will produce different growth results, it stands to reason that a policy-based decision regarding which model is most suitable for Wyoming should also be based on the extent to which a given model most reliably detects schools/ classes judged to be high or low performing. In other words, all else being equal (e.g. equally technically viable and equally operationally manageable) the model that produces results most in sync with Wyoming's definition of quality should be prioritized. For example, if the state heavily values academic growth for the lowest achieving students (e.g. those below proficient) then a model that is more sensitive to detecting progress for students below standard should be prioritized.

Growth Expectations

Another critical decision related to implementing growth measures for accountability purposes is establishing growth standards. More plainly, 'how much growth is good-enough?'

Broadly, approaches to identifying growth standards can be characterized as either norm-referenced or criterion-referenced. A norm-referenced approach compares student achievement to a statistically derived expectation, such as the mean performance for students with similar prior achievement. Growth that exceeds this predicted value is judged to be 'good,' whereas a growth rate below statistical expectation is regarded as 'bad.'

Alternatively, criterion-referenced growth standards establish a specific target outcome. For example, requiring students who are not proficient to grow at a rate such that they achieve proficiency is a criterion referenced approach.

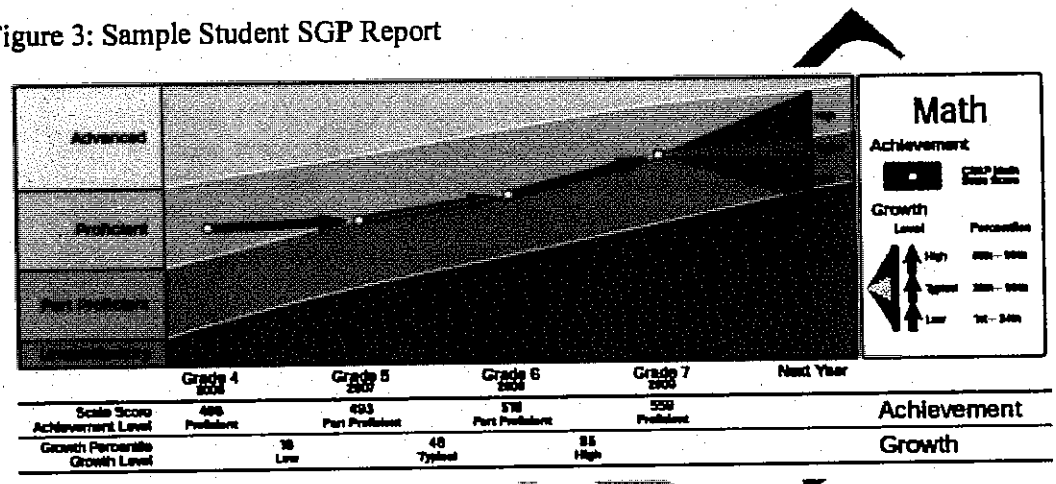
Each approach has advantages and limitations. Setting a norm-referenced expectation is useful for identifying comparably high or low growth. Indeed, it seems intuitively reasonable to describe valued growth as that which is significantly higher than that of similar students. However, a limitation is that some students who grow at very high rates relative to their peers may not achieve proficiency in a reasonable amount of time. A criterion-referenced standard resolves this potential 'growth to nowhere' problem, but raises a new issue: some students may be so far below standard that even at exceptionally high rates of growth the student will not achieve proficiency in a reasonable time frame. Particularly when growth is used for accountability purposes, this can create a condition where some classes or schools are uniformly disadvantaged. Conversely, very high performing classes or schools could exhibit little or no growth and meet standard.

An appreciation of this tension between criterion and norm-referenced growth leads to the conclusion that neither approach alone is adequate. Therefore, we recommend blending the two in the accountability system. In the subsequent section, we introduce the Student Growth Percentile (SGP) as a normative measure of growth and then describe how it can be evaluated with respect to a meaningful criterion.

Student Growth Percentiles

The Student Growth Percentile (Betebenner, 2009) is a regression based measure of growth that works by conditioning current achievement on prior achievement and describing performance relative to other students with identical prior achievement histories. This provides a familiar basis to interpret performance – the percentile, which indicates the probability of that outcome given the student's starting point. This can be used to gauge whether or not the student's growth was atypically high or low as depicted in Figure 3.

Figure 3: Sample Student SGP Report



In Figure 3, an SGP was calculated for each year this student was enrolled (from grade 4 to grade 5, from grade 5 to grade 6 and from grade 6 to grade 7). At the right of Figure 3, low, typical and high growth is classified by broad percentile ranges. For this hypothetical student, the growth percentile of 16 is classified as "low" and as illustrated in Figure 3, the student's performance dips from being classified as Level 3 in grade 4 to becoming a Level 2 in 2007. In subsequent years, this student's SGP increases to the point that he or she is re-classified as a proficient student in grade 7.

These individual SGPs can be aggregated to evaluate growth taking place at the classroom, school, or district level. Since the median is a more appropriate measure to use with percentiles than the mean, the median growth percentile is typically reported by states using SGPs to quantify average growth taking place at aggregated levels.

Catch-Up/ Keep-Up Growth

As noted previously, establishing appropriate growth expectations for accountability should incorporate both norm and criterion referenced standards. The Catch-Up/ Keep-Up (CUKU) method, initially developed for the Colorado growth model, provides a rich example for how this can be accomplished[2].

[2] See http://www.cde.state.co.us/Accountability/Downloads/GrowthStandardsAccountability.pdf for more information about the application of norm and criterion referenced growth in Colorado.

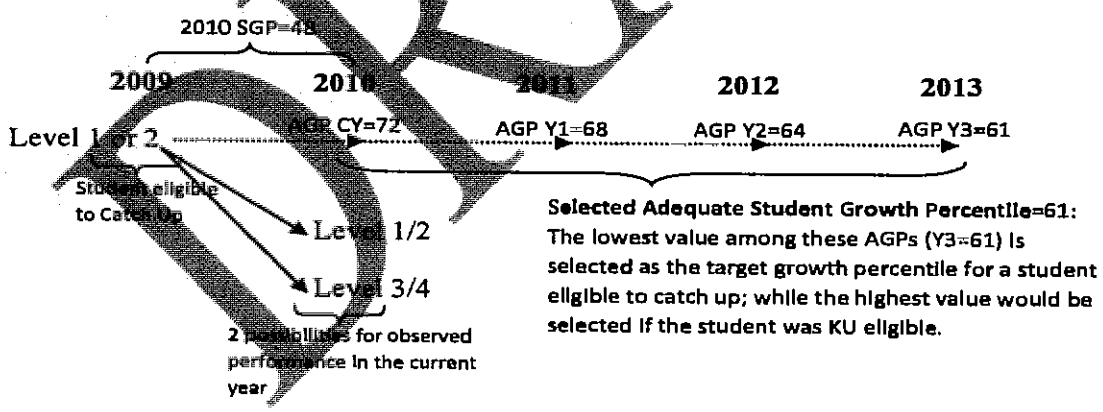
With the CUKU metric two distinct groups of students are evaluated together: students who scored below proficient (Level 1 and 2 students) and proficient students (Level 3 and 4 students) in the prior year. A student is placed in the 'Catch-Up' category if his or her prior year score is below proficient 'Keep-Up' students are those that were proficient or higher in the prior year.

Then, for the current year and three future years an adequate growth percentile (AGP) is calculated. Each AGP sets the projected growth percentile required for a student to cross the cut score threshold from below proficient to Level 3 in a given grade for the projected year. Each student has an individual AGP that applies specifically to him or her.

From the four AGPs, a single value is selected as an overall representation of a student's needed growth. For a student in the CU category, the selected target is the *lowest* AGP value from among the current or projected year AGPs. This represents the growth a student needs to cross the threshold into the Proficient category or Level 3 at any point in the current year or the next three years. For students in the KU category, the selected target is taken from the *highest* AGP target value. This means a successful Keep Up student cannot fall below Level 3 in the current year, next three years.

Figure 4 shows how the selected AGP is derived for a CU student scoring a Level 1 or 2 in 2009. During the current 2010 school year, the student can either be in Level 1 or 2 or in Level 3 or 4. In this hypothetical case, the amount of growth needed to move from Level 2 to Level 3 decreases from 2010 to 2013. The minimum value selected to represent the AGP for this student is the SGP of 61 from year 3. In essence, the AGP value for a given CU student quantifies how much that student should have progressed in the current year in order to attain proficiency in the future.

Figure 4: Illustration of the Catch-Up/ Keep-Up Method



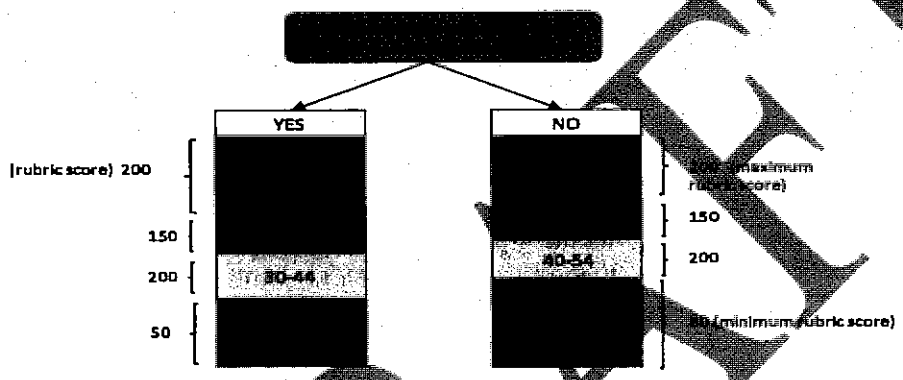
Growth Design Illustration

There are a number of promising alternatives for incorporating SGPs into Wyoming's accountability system. The approaches illustrated in this section evaluate the SGPs relative to proficiency targets based on the Adequate Growth Percentile (AGP) defined in the preceding section. As explained, an AGP is calculated for every student. For a student who scored below

proficient in the prior year, the AGP target represents the growth percentile needed for that student to become proficient in one of four years considered. For a student who scored proficient in the prior year, the AGP represents the growth percentile needed to maintain proficiency across the four years considered.

In the same way that the median is taken across the individual SGP values to evaluate "average" growth taking place at a school, the median can be taken across the unique AGP target calculated for every student depending on whether that student is a below proficient or already proficient in the prior year. Figure 5 illustrates how growth can be evaluated at the school level by using these two pieces of information (median SGP and median AGP) and then evaluating whether the median SGP achieved falls under one of four rubric point categories.

Figure 5: Illustration of Rubric Scores for Schools Meeting or Not Meeting AGP Target



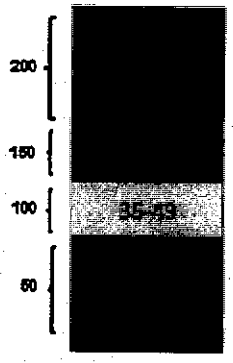
In Figure 5, for a given school, the median SGP is first compared to the median AGP. If the observed median SGP for the school in a given year meets or exceeds the median target (AGP), then the scoring rubric to the left is used to assign rubric points to the median SGP achieved by the school. If the school's median SGP is below the median target AGP, then the scoring rubric to the right is used to assign rubric points to the median SGP achieved by the school. For example, if a school had an observed median SGP of 65 and a median target AGP of 45, this school would be awarded maximum points of 200 on growth as indicated by the scoring rubric to the left. The rubric cut-scores set for schools that meet or exceed their median AGPs are lower than the cut-scores for schools that do not meet their median AGPs since these schools are populated with students who are either largely on track to meeting proficiency or growing at a sufficient rate to maintain their proficient status. The rubric cut-scores for schools that do not meet their median AGPs are set at a higher bar, since these schools need to grow at higher rates in order to move all their students towards proficiency.

Alternatively, a more simplified method for producing school growth scores could be implemented by removing the AGP component from the school evaluation of growth and using a single rubric to assign a school growth score[3]. Simply, the schools median SGP is evaluated against one rubric to determine the growth score. If this approach is desired, it is important to identify rubric values and growth ranges that meaningfully correspond with attainment of desired

[3] However, we would recommend continuing to report AGP at the student level.

achievement outcomes. For example, analyses should be conducted to determine what percent of non-proficient students who score in the highest growth category achieve proficiency in 3 or fewer years[4]. Figure 6 depicts an example of this single rubric approach.

Figure 6: Illustration of Single Rubric to Determine School Growth Outcomes



Growth and Equity

In the previous section, we introduced the idea that the growth component of the school accountability system could be used to support Wyoming's equity values. In other words, growth measures could be used to determine if the lowest performing students were demonstrating adequate progress.

One way this can be accomplished is to compute growth outcomes twice: once for the whole school and again for students below proficient – the target equity group. As described previously, this provides a substantial incentive for schools to focus on improving the performance of low achieving students and substantially rewards those schools that are successful.

There are a number of ways to accomplish this. One approach is to used the same rubric(s) but apply a different scale to reflect the desired weight (e.g. 200 points for whole school and 100 points for non-proficient students). Additionally, non-proficient students could be counted once in each group (i.e. double counted), which places a strong emphasis on equity or growth could be calculated separately for proficient versus non-proficient students. Finally, a decision regarding which content areas should be included and how much each should be weighted must be considered.

Design Decisions

One of the most critical decisions in the design of any accountability system is determining how the various indicators will be summarized and reported. Essentially all research and evaluation (accountability systems are one type of evaluation) endeavors involve some form of "data

[4] The Center has conducted analyses in another state revealing that meaningful growth targets can be established with a single rubric, which closely correspond with results from the CUKU approach.

reduction" whereby results are summarized to some degree or another. In other words, we rarely collect and report raw data to stakeholders, rather it is summarized and reported in some manner. The challenge is determining which data to summarize and when to stop summarizing. For example, few stakeholders will question computing either a mean scale score or some other summary statistic (e.g., percent proficient) for the reading assessment in a particular classroom. But even this level of aggregation masks other important considerations such as the degree of variabllity in the students' scores. Going further, we suggest that few stakeholders would question summarizing the achievement results for a given content area for a given year at a school; however some might have concerns about the meaningfulness of combining such results across content areas to produce an overall achievement measure. As with most of the other design decisions, there is not a single correct approach. Rather, the aggregation decisions need to reflect the values and the intended uses of the results. This section of the report outlines some of the aggregation and reporting issues for Wyoming's school accountability system and proposes a framework that links closely the overall performance levels with specific consequences and supports.

First, we must make clear that this discussion is aligned with previous decisions about having a very detailed reporting structure associated with the various Wyoming accountability systems. In terms of the school accountability system, the intent is to report on each of the indicators with enough specificity to inform decisions and subsequent improvement actions. Further, we recommend designing a reporting structure whereby school personnel have access to much finer grained reports than those produced for parents and other members of the public.

Single or Multiple Ratings

There has been considerable discussion among Select and Advisory Committee members about the ultimate level of aggregation for the school accountability indicators. While not necessarily evenly split, there are two main positions. The first involves producing an omnibus rating for each school, while the second position would have multiple ratings for each school, although there is not yet agreement about the specifics of such multiple ratings. While intended purposes and target audiences must inform the aggregation decisions, we discuss the potential advantages and disadvantages associated with these major reporting decisions.

A major advantage of the single overall rating is its simplicity. If the meanings of the ratings are well understood, it could be a very efficient way to communicate, at least at a surface level, information about the overall quality of schools in Wyoming. Of course, the challenge is finding global performance descriptors that accurately convey meaning about the multiple indicators. The ability to have some control over the "message" is another important advantage of using a single overall rating. This advantage depends largely on one's belief about whether someone (e.g., the media, realtors, or other stakeholders) will find a way to create their own aggregate rating, whether or not it is done by the state. If one believes that there is a reasonable probability of somebody or some group creating and publishing their own overall school rating, then one might want an overall rating as part of the system so that the rating accurately reflects the design choices of Wyoming's policy leaders and advisors. On the other hand, if one either believes there is a low probability of such an occurrence or that it can be dealt with once it occurs, they will not necessarily view the single overall rating as an advantage, at least for the ability to help

control the message. Finally, while the validity of an overall rating might be questioned (discussed below), previous research and experience indicates that the overall rating wlll—all things being equal—be more reliable (e.g., consistent across years) than ratings of individual indicators.

The disadvantages of combining the various indicators into a single overall rating are numerous and are essentially the inverse of the advantages. The risk of combing all indicators into a single rating, while apparently simple, may in fact be too blunt to convey sufficiently nuanced information about school quality. Further, while a single rating might do a fair job at distinguishing the highest and lowest performing schools, it might not be very effective at providing a fair and accurate picture of schools in the middle. An example discussed at a Select Committee meeting is that if growth and achievement were weighted about equally, two schools could get very similar ratings even if one had very high growth and low achievement while the other school had the opposite pattern. There was concern that such a rating would mask very important differences among schools. A similar concern arose when considering variability in performance across the content areas. The potential advantage of "controlling the message" has disadvantages as well. Many recognize that the State will not be able to control all potential users and uses and trying to do so by producing a single rating for each school could be seen as falling into the "two wrongs do not make a right" trap.

If there are disadvantages to producing a single rating, that implies there are advantages to producing multiple scores/ratings for each school. The first major challenge of reporting multiple scores or ratings is the need to decide and agree on the type of reporting that should occur. Of course, this needs to be driven by purposes and uses, but there might always be a tension between how much or how little to aggregate. For example, some have suggested reporting separately by content areas (e.g., math, reading, and science), but combining growth and achievement within content area. Others have suggested combining across content areas, but reporting two overall scores, one for growth and another for achievement. To play out this example further, one can easily make the case for reporting growth and achievement separately for each of the content areas, and even by grade levels as well. The point here is that once we move away from simply reporting individual student scores, we have agreed to aggregate. The question then is how far do we continue to aggregate to find the right balance between summary and information?

The educational psychology literature is quite clear that task-specific feedback is much more effective at leading to improvements in performance than general feedback. Therefore, the more fine-grained the reporting, the more likely it is that the accountability system reports and other information will lead to improvements in student learning. To be fair, simply reporting two or three scores (growth and achievement or content area scores) is probably not specific enough to qualify as "task-specific" feedback. This brings us back to the need to have a very detailed reporting system so school personnel will have information available on which to act. However, public reports do not need to present such fine-grained information. On the other hand, reporting summary information in multiple categories, such as growth and achievement by content area could provide a much more nuanced view of school quality than a single omnibus rating. Further, this could be a useful public information activity by educating the public that quality in education is not as simple as "thumbs up" or "thumbs down." Another potential benefit of

reporting information either by content area or by content area and growth/achievement is that it can help school leaders address complacent teachers who might be able to "hide" behind an omnibus compensatory rating. For example, a school with highly effective mathematics teachers may get an adequate overall rating even though the language arts teachers are only performing at a mediocre level. A more discrete reporting system would help shine a light on both the strong and weak areas. Of course, one could take care of such cases in an omnibus rating system by not using a simple compensatory system, but requiring some minimum level of acceptable performance in all relevant areas to receive an acceptable overall rating.

Recommendation: Trying to thread the needle

As can be seen, there are tradeoffs with either approach. The advantages of the single rating point out the disadvantages of multiple ratings and vice versa. We are concerned that reporting only two (growth and achievement) or three (reading, math, science) scores/ratings for each school does not go far enough to address the concerns associated with aggregating all indicators to a single rating. Therefore, we see the choice as being between producing a single overall score/rating or producing ratings in ***at least*** the following categories:

- ✓ Mathematics achievement
- ✓ Mathematics growth
- ✓ Reading achievement
- ✓ Reading growth
- ✓ Science achievement
- ✓ Readiness

We make this suggestion because knowing that achievement and especially growth can vary considerably across content areas, we do not think that simply reporting two ratings (e.g., growth and achievement) offers noticeable advantages over a single rating. We go further to recommend that a single rating can be produced along with the more discrete ratings suggested above and that such a system can help meet multiple needs of the system. The single rating is undoubtedly what will get published in newspapers and other summary outlets, but if reports are carefully designed, we would hope that the finer grained information would get reported as well.

Performance level descriptors (PLD) and Standard Setting

One of the reasons for reporting a single, overall rating certainly relates to the reliability issue discussed above. A single, largely compensatory rating will be more reliable that any one of the five or six ratings closer to the indicator level. This greater reliability has important implications for establishing cutscores separating the various levels of performance, especially if the goal is to have at least three or four levels. If there is insufficient reliability, it can often play out as problems with classification consistency. That is, low reliability around the cutscores will lead to schools changing categories for no reason other than the uncertainty associated with the system. Therefore, it will be important to have a reasonably high degree of confidence in the overall classification for a school. If there is a reliable overall rating for each school, then it is less critical that each of the finer-grained reporting categories to have similarly high levels of reliability. This is not advocating low reliability, but simply suggesting the higher reliability of the composite can "protect" the lower reliability of the finer categories.

The Select Committee indicated an interest in establishing four levels of overall performance, but there was no discussion about the number of levels that should be set on the finer

categorizations. There is a compelling argument to establish the same number of levels on the component parts as the overall levels, but there is also a compelling argument for using a different number of levels. If the same levels are used for all reported categories, it might make communication easier, but it can also lead to confusion. There is always the risk with using the same levels for each major indicator and the overall level that stakeholders will think they can simply average across the major indlcators to arrive at the overall score. While this could be true, it likely wlll not be the case because of differential weighting and other factors. Therefore, we recommend that four performance categories are used for the overall rating, while three are used for each of the major indicator reporting categories. We elaborate on this below, focusing first on the overall level.

We recommend that the State engage in a deliberative standard setting process to establish overall levels that are tied to important criteria of performance. This involves generating descriptions of expected overall performance (performance level descriptors) at each of the four levels and then evaluating accountability system data (in the initial implementation/pilot year) to essentially match overall school scores to these descriptors. This process will result in recommended scores that mark the boundaries between any two levels (cutscores). These recommended cutscores should then be brought to the State Board of Education for approval. We offer recommended levels and initial descriptions for the four overall performance levels:

- **Exemplary/Exceeding Expectations**: Schools in this category, which is reserved for schools considered models of performance, have demonstrated high growth in all applicable content areas, have average to high levels of achievement (proficiency rates), and have high performance on graduation rates and other readiness indicators (if applicable).
- **Satisfactory/Meeting Expectations**: Schools in this category have demonstrated either high levels of growth or high levels of achievement in all content areas and are meeting state targets for readiness indicators.
- **Approaching/Partially Meeting Expectations**: Schools in this category have demonstrated either acceptable levels of growth or acceptable levels of achievement in some, but not all content areas. Schools in the "approaching" category may demonstrate average or lower performance on graduation or other readiness indicators.
- **Priority Improvement/Not Meeting Expectations**: This category is reserved for schools with unacceptable performance on many or most indicators. Schools in the priority improvement category typically have low levels of achievement in all content areas and demonstrate low to average growth in the relevant content areas and fall short of expectations on graduation and other readiness indicators (if applicable).

We recognize that these category names and descriptors will evolve, but argue that that if the state wants to incentivize improvements in the overall state educational system, the highest performance category should be reserved for schools that are truly demonstrating high levels of performance. Similarly, the priority improvement schools, perhaps a slightly larger group than those in the exemplary category, should be reserved for those schools where the State will direct intensive capacity-building resources, which is described in more detail below. All of these performance categories will be intricately linked expected actions on the part of the school, district, and state. These actions may be termed "consequences," but given the continuous improvement orientation of the Advisory and Select committees, consequences are all designed

from an improvement orientation. In spite of the potential usefulness of this overall categorization, the Advisory committee contends that it is too blunt of an instrument to direct improvement actions appropriately. Therefore, before discussing potential consequences, we turn to the establishment of performance levels on the indicator categories.

The following six major indicators previously are used as a starting point for thinking about reporting at a finer grained level than the single overall level:

- ✓ Mathematics achievement
- ✓ Mathematics growth
- ✓ Reading achievement
- ✓ Reading growth
- ✓ Science achievement
- ✓ Readiness

The major categories could easily be expanded as the number and type of indicators in the school accountability system expand, but these categories represent a good starting point. As noted above, we suggest that each of these major indicators be categorized into three performance levels to both avoid some potential interpretation problems, but to also recognize that the reliability associated with individual indicators might not be high enough to justifiably support the establishment of four distinguishable performance categories. Therefore, we recommend using, at least as a starting point, three levels of performance for these indicators and that the cutscores should be established normatively such as: exceeding the state average, average performance, and below the state average. This is especially useful for the growth measures, but we argue that it can be useful for the status measures as well. However, we would not be opposed to incorporate some criterion-referencing into the establishment of these levels as well. For example, one may want to require that for a school to be considered "average" on the readiness indicator, they should have a minimum requirement of at least a 75% graduation rate. Again, this is just an example to demonstrate how cutscores on these indicators could be established largely normatively but can also include some important thresholds.

<u>Alternative Approaches</u>

There are at least four approaches to combining multiple indicators to yield a single outcome: *compensatory*, *conjunctive*, *disjunctive*, and *profile* methods. Compensatory means that higher performance in one measure may offset or compensate for lower performance on another measure. Conjunctive means that acceptable performance must be achieved for every measure. Disjunctive means that performance must be acceptable on at least one measure. A profile refers to a defined pattern of performance that is judged to be satisfactory, unsatisfactory, or equivalent. A profile approach is often operationalized using a matrix to combine indicators for making judgments.

A compensatory approach recognizes that some degree of variability in performance across indicators may be expected. Such an approach has a higher degree of reliability because the overall decision is based on multiple indicators evaluated more holistically. Moreover, reliability improves because random error in multiple measures tends to cancel. Conjunctive decisions are less reliable because errors accumulate across multiple judgments meaning a school might fail to meet standards due to the least reliable measure. However, this approach may be desirable when it is important to assure that a school does not fall below established standards on any one

criterion. A disjunctive method is desirable when any one component is viewed as adequate assurance the school has met expectations. Finally, profiles are useful especially when there are certain patterns that can be described that reflect valued performance that are not easily captured, usually because the combinations of criteria are judged to be not equivalent.

These approaches should not be regarded as mutually exclusive. It is possible, for example, to combine aspects of compensatory and conjunctive 'rules' to arrive at a final result. An example of this is a rule that requires both 95% participation AND a minimum score on an index that combines status and growth in order to pass. Requiring schools to meet both participation and a minimum performance level is conjunctive; however, an index that combines both status and growth is compensatory.

Matrix Design Illustration

Using the six major indicators we have introduced in this section, we will illustrate an example for how the indicators can be reported at various levels and then combined to support an overall classification. By so doing, we do not propose that this should represent the entirety of information produced by the system. Rather, we seek to illustrate a design alternative with a manageable number of indicators that should figure prominently in the accountability system.

As illustrated previously in this document, growth, achievement, and readiness (for the present example: graduation rate) can be can be expressed a number of ways. For example, we can report achievement as simply percent proficient or on a scale with a desired range. However, regardless of the metric we can 'collapse' the outcome into three categories. Here, we will use the following: *Below the Standard, Meeting the Standard, and Exceeding the Standard.*

Taking into account each content area, this produces six performance categories as depicted in Table 5 below, which would be explicitly reported for each school.

Table 5: Illustration of Reported Performance Categories

Math	Reading	Science[5]	Readiness
Achievement Level	Achievement Level	Achievement Level	Performance Level
Growth Level	Growth Level		

It is possible further collapse this information into an overall score by content area, such as a math performance level that accounts for the combination of achievement and readiness. Alternately, the information can be combined by indicator category, such an achievement score that accounts for the influence of math, reading, and science. There are multiple ways to accomplish this, but perhaps the most straightforward would be to produce an overall proficiency rate for achievement and a mean score for growth and apply standards to these values to produce a single performance level for each indicator. It is certainly possible to weight one content area more than another to prioritize a policy value. In any case, the result would be a single performance level for each indicator class: achievement, growth, and readiness.

[5] Growth is not calculated for science because it is tested only once each in elementary, middle, and high school.

Using these three level ratings for each of three indicators, a decision table can be produced, as shown in Table 6, that indicates how the combinations of ratings work to provide an overall school classification as: *Exemplary/ Exceeding Expectations, Satisfactory/ Meeting Expectations, Approaching/ Partially Meeting Expectations, and Priority Improvement/ Not Meeting Expectations*. An illustration of a decision table follows.

The shaded cells shows the various level on each indicator class and the bold text in the non-shaded cells shows the overall school classification. The actual classification levels are simply illustrative and many other combinations are possible to reflect the values of Wyoming policy makers.

Table 6: Illustration of Decision Table for Performance Indicators

		Achievement Below	Achievement Meeting	Achievement Exceeding
Readiness Level Below Standards	Growth Below	**Priority**	**Priority**	**Approaching**
	Growth Meeting	**Priority**	**Approaching**	**Approaching**
	Growth Exceeding	**Approaching**	**Approaching**	**Satisfactory**
		Achievement Below	Achievement Meeting	Achievement Exceeding
Readiness Level Meeting Standards	Growth Below	**Priority**	**Approaching**	**Satisfactory**
	Growth Meeting	**Approaching**	**Satisfactory**	**Satisfactory**
	Growth Exceeding	**Satisfactory**	**Satisfactory**	**Exemplary**
		Achievement Below	Achievement Meeting	Achievement Exceeding
Readiness Level Exceeding Standards	Growth Below	**Approaching**	**Satisfactory**	**Satisfactory**
	Growth Meeting	**Satisfactory**	**Satisfactory**	**Exemplary**
	Growth Exceeding	**Satisfactory**	**Exemplary**	**Exemplary**

A strong advantage of using a decision matrix to evaluate performance is the ability to apply specific policy-based criteria to all cells, especially the 'off-diagonal' cells. When cells 'agree' (e.g. growth, achievement, and readiness are all below standard) the decision of a final classification is usually uncontroversial. However, there may be a policy rationale for evaluating one combination of levels as different from another if they are based on dissimilar indicators. In this manner, policy makers may desire to privilege growth, achievement, or readiness.

Compensatory Design Illustration

Using the indicators we have introduced in this framework, we will also illustrate an example of combining achievement, growth, and readiness using a compensatory approach.

As shown previously in this document, achievement can be expressed as a scale based on proficiency rate. In the most straightforward approach, the percent proficient across all grades and content areas is multiplied by 300 to obtain a scale that ranges from 0 to 300 (e.g. .75 x 300 = 225).

Growth, as shown previously, can also be expressed on a scale with a maximum value of 300. This comes from two components: whole school and non-proficient students. In each case, the median SGP is evaluated against a rubric that awards up to 200 points for the whole school and up to 100 points for growth of the non-proficient students for a total of 300[6].

We also introduced two components for readiness: a graduation index and performance on readiness assessments (i.e. ACT and EXPLORE). We can conceive of a readiness scale with a maximum value of 150 at the high school level, where 100 points is derived from the graduation index and 50 points from assessment performance, calculated as the percent meeting ACT benchmark performance multiplied by 50 (e.g. .80 x 50 = 40). The sum of these values produces an overall readiness index for high schools. To keep the maximum value of points available for all schools the same, high school achievement points could be reduced to 150. By so doing, 'status' measures (i.e. test performance and graduation outcome) would carry the same weight in the calculation in contrast to growth.

Including readiness scores for middle schools represents a unique challenge that should be examined separately. The EXPLORE test is given statewide and provides an 'on-track' college readiness measure for 8th grade students. Conceivably, performance on EXPLORE could be incorporated in the model similar to the ACT to produce a readiness value of up to 50 points for middle schools and achievement could be reduced a corresponding amount (from 300 to 250) to keep the overall values consistent. However, because the EXPLORE test is given in grade 9, a process would need to be developed to associate these values with the schools in which the students were enrolled as 8th graders. This would also create a data 'lag' (which, to be fair, may exist for other indicators).

In Figure 7 and Figure 8, we illustrate two examples of a hypothetical point structure for elementary and high schools, incorporating the elements and values described.

[6] Several variations on this approach are possible, including distinguishing between proficient and non-proficient students (to avoid double counting) and changing the weights (e.g. 150 for each component)

Figure 7: Illustration of Hypothetical Elementary School Point Structure

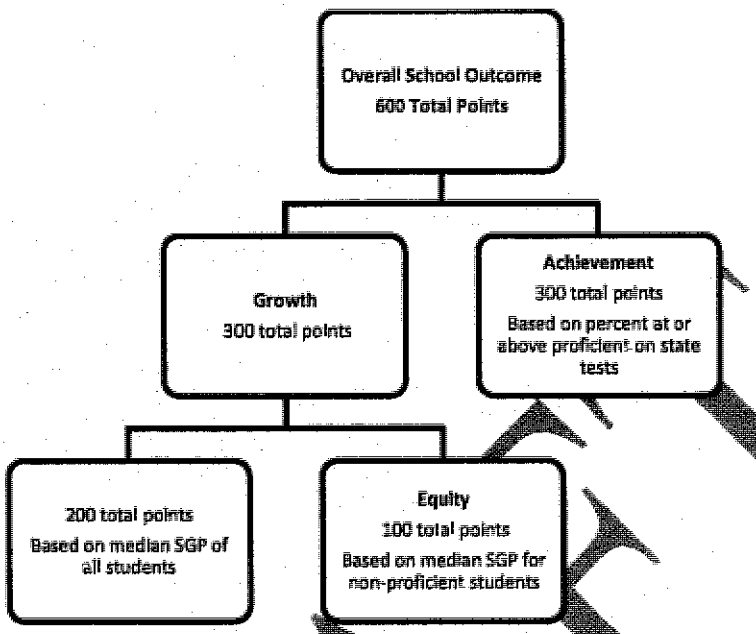
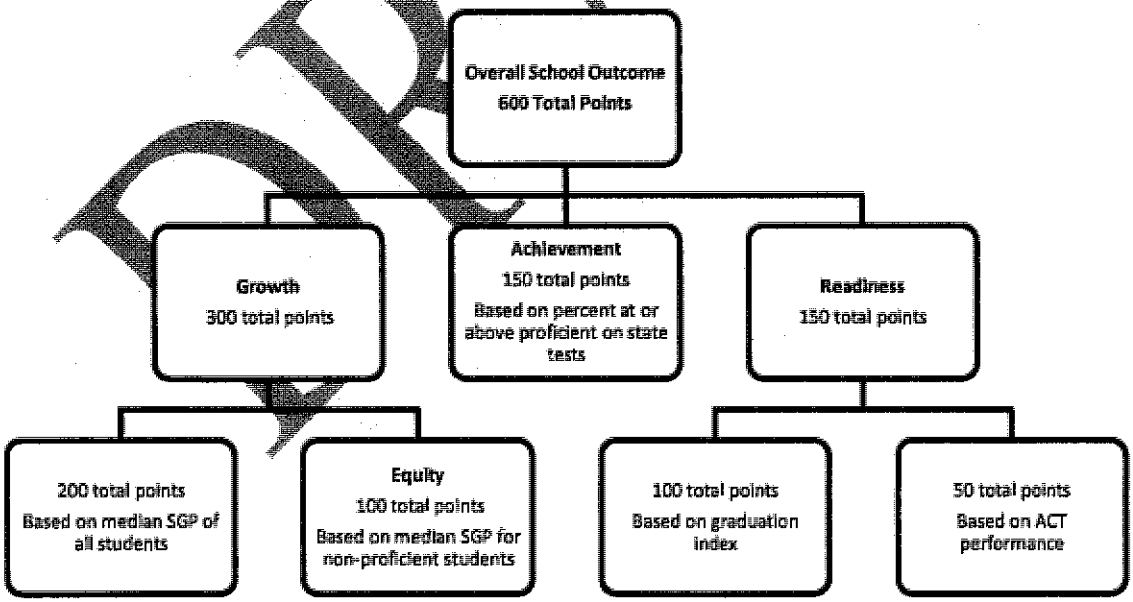


Figure 8: Illustration of Hypothetical High School Point Structure



The design example portrays a model in which each element exerts influence on the outcome in proportion to the number of points assigned to that component – in this case, achievement and

growth are equally valued. Evaluation of school performance is in reference to a target score or threshold on the overall score (e.g. 500 out of 600 to achieve the highest classification.) Schools that score lower on achievement can offset this performance by demonstrating higher growth. Conversely, less growth is required of schools that are already strong in achievement. This illustrates the compensatory nature of the model. *Importantly, the weight of each component and the selection of thresholds are key policy decisions that influence school outcomes.*

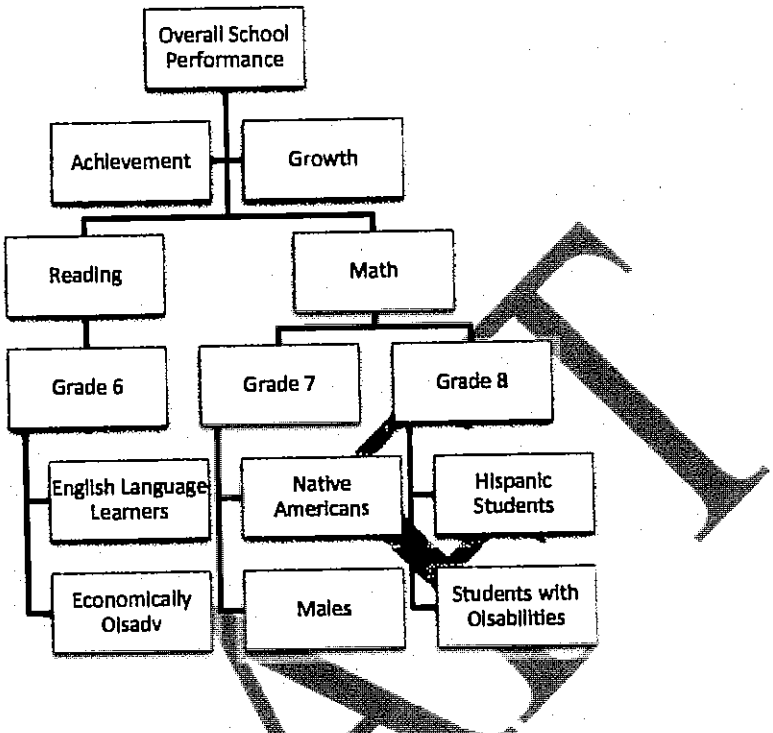
It cannot be overemphasized that the values used in this section and previous sections of this document are intended to be purely illustrative to make the ideas presented more clear by example. The actual rubric and scale values should be carefully considered to reflect policy values and modeled to examine impact.

Reporting

As discussed previously, combining content areas or indicators into a single classification has the advantage of being clear to stakeholders and can guard against potentially irresponsible attempts to produce a summary outcome. However, these high level outcomes run the risk of masking important characteristics of school quality. To be sure, more detailed information is needed to inform decisions about supports and program improvement. For this reason it is important to develop a reporting system that equips educators, leaders, and stakeholders with ample information to support a variety of uses.

We envision information available by indicator, by content area, by grade, and by subgroup. However, as depicted Figure 9 below, which is a very small slice of the full range of information that could be produced, it is easy for extant reports to overwhelm stakeholders and serve only as a 'data dump.'

Figure 9: Sample of Selected Reporting Levels

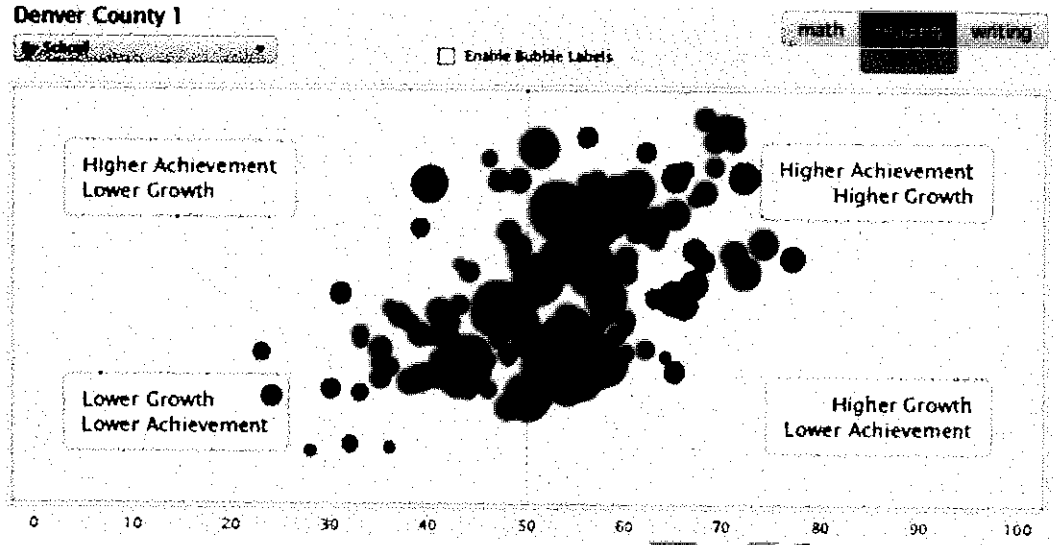


A well-designed and useful reporting system goes beyond static reports and takes advantage of technological innovations. In general, reports should be accessible to stakeholders to ensure that those closest to the classroom have the information needed to inform instructional decisions. Moreover, the reports should be accompanied by adequate interpretative information. Such information should describe the meaning of and precision of the outcomes and clearly indicate uses and interpretations that are supported. Supplemental information may enhance the utility of reports, such as comparative information from similar schools or longitudinal trends.

States that are on the forefront in innovative reporting practices are taking advantage of both dynamic reporting technology (e.g. interactive data tables) and data visualization (e.g. graphs and plots). One such state is Colorado, who employs a system termed SchoolView[7]. In this system, not only can stakeholders access a variety of 'conventional' information, such as summaries of state assessment results, but users can produce and manipulate customized reports. It starts with the ability to customize the interface by role (e.g. parent, educator, or administrator). Then, users can access a wealth of information, such as plots of growth (median SGP) by status (percent proficient) and school size. Figure 10 provides an example of this display.

[7] See http://www.schoolview.org/index.asp for more information including access to dynamic reports

Figure 10: Image of Growth and Proficiency Plot from Colorado's Reporting System



These plots can be manipulated by the user to show different content areas, subgroups, or years. By allowing users to customize reports and to facilitate the presentation of a vast amount of information in a clear and simple manner, educators and other stakeholders can more easily locate findings in the data that can inform improvement initiatives.

Additionally, a comprehensive reporting system is accompanied by supporting information to help users navigate through the data and interpret findings. Innovative systems do not restrict these resources to printed reports, but take advantage of technology to produce resources such as narrated demonstrations, videos, or user guided tutorials.

Consequences and Support

As discussed with both the Advisory and Select committees, there is absolutely no intention to institute any sort of punitive consequences in reaction to accountability system results. Rather, both groups are committed to ensure that the accountability results contribute the continuous improvement process to improve the particular schools and the system as a whole. However, we are not blind to the fact that one person's support could easily be seen as another person's consequences, especially if that means restrictions on some aspects of local control. Nevertheless, both committees make these recommendations with the intention of improving Wyoming schools, particularly those performing below state expectations. The consequences and supports tied to school performance on the accountability system are multi-tiered, but the various levels are interrelated. The overall accountability level triggers a general action, but this must be further specified according the performance on the various indicators. The general actions tied to each of the overall levels are described below. The specifications of these improvement plans will need to be fleshed out with more details as the system moves towards implement. Further, these details should be tied to the systematic efforts to improve the capacity of the schools, districts, and the state itself, described elsewhere in this report. The specific

consequences and expected levels/types of support are outlined below. In Section IV of the report, we provide a more detailed description of the system of support and capacity building necessary to ensure the success of the full system.

Exemplary/Exceeding Expectations: Schools in this category should be publicly recognized and commended for their accomplishments. In order to maintain high levels of achievement and illuminate promising practices, schools in this category must file a *"maintenance plan"* with WDE that describes how the schools intends to maintain its high levels of performance and to indicate an improvement goal in any area it deems to be a priority. Instead of, or in addition to this improvement goal, the exemplary school may use its maintenance plan to document its effective practices and describe how it intends to share these successful practices with other schools in Wyoming. This plan should be a brief document and is not intended to interfere with the school's overall success.

Satisfactory/Meeting Expectations: Schools in this category must file a *"level one improvement plan"* with WDE that is based on a close examination of the indicator scores. The level one improvement plan must be aimed at improvement goals tied to performance on the specific indicators where the school's performance was either weaker than other categories or lower than the state average performance. The level one improvement plan may include a limited number of other goals beyond the specific indicators and the plan shall include a rationale for selecting the improvement goal(s), the processes that the school will implement in order to address the goal(s), a timeline and relevant benchmarks for addressing the goal(s), and a description for how the school will evaluate its success at meeting the goal(s). WDE will appoint a liaison to monitor the school's progress at meeting the goals and to work with the school, if requested, to help support the school's efforts or to assist the school in locating additional capacity to support the school's improvement efforts. The school and district will use existing block grant funds to pay for any additional resources.

Approaching/Partially Meeting Expectations: Schools in this category must file a *"level two improvement plan"* with WDE that is based on a close examination of the indicator scores. The level two improvement plan must be aimed at improvement goals tied to performance on the specific indicators where the school's performance was either weaker than other categories or lower than the state average performance. This plan must address all areas rated unacceptable. The level two improvement plan focus only on goals related to shortcomings on the specific indicators unless there is a compelling reason to include other goals. The plan shall include a rationale for selecting the improvement goal(s), the processes that the school will implement in order to address the goal(s), a timeline and relevant benchmarks for addressing the goal(s), and a description for how the school will evaluate its success at meeting the goal(s). WDE will appoint a liaison to support the school in identifying and addressing the goals and to work with the school, if requested, to help support the school's efforts. The liaison must assist the school in locating additional capacity to support the school's improvement efforts. The district and WDE share the costs to pay for any additional resources. Schools that do not meet their improvement goals for two consecutive years under the level two plan may have their overall level changed to "priority improvement" and participate in the consequences and supports associated with that level of performance.

Priority Improvement/Not Meeting Expectations: Schools in this category must file a *"turnaround plan"* that describes how the school, along with a distinguished educator appointed by WDE and the local board of education, will radically improve its performance and must address all areas rated unacceptable. Recognizing that such significant improvement takes time (e.g., 3-5 years), the plan must specify process and performance milestones for each year that the plan is in effect. These milestones must be agreed upon by the local board of education, the distinguished educator, and the WDE liaison. The plan must identify the highest priority areas that will be the focus of the school's initial efforts, but should also discuss how the school will move beyond these highest priority indicators to other salient improvement targets. The plan shall include a rationale for selecting the improvement goal(s), the processes that the school will implement in order to address the goal(s), a timeline and relevant benchmarks for addressing the goal(s), and a description for how the school will evaluate its success at meeting the goal(s). The WDE liaison must assist the school in locating additional capacity to support the school's improvement efforts and the liaison along with the distinguished educator shall be able to direct the school and district to utilize certain improvement strategies and/or materials (e.g., curriculum). The plan must describe the resources required necessary to carry out the improvement efforts, but must first document how existing resources will be reallocated to meet the needs described by the turnaround plan. WDE will provide the resources necessary, as authorized through this statute, to support the school's turnaround efforts. Schools that do not meet their performance improvement benchmarks under the turnaround plan for two consecutive years must hire a "school turnaround specialist" to either work with the existing school principal. Further, continued low performance may lead to termination of the principal and other staff members.

Educator Evaluation

Introduction

Like many other states, Wyoming has set out to develop a system for measuring teacher and administrator effectiveness influenced in part by student achievement. While many of the issues related to school accountability overlap with educator accountability, there are numerous specific considerations that should be addressed, which is the focus of this section. Importantly, this section is only an introduction to the very complex challenges associated with designing an educator evaluation system and does not contain the specificity needed to fully design and implement an educator evaluation system that includes measures of student academic performance. We intend for this document to provide an overview of the many issues and decisions policymakers and other stakeholders will need to consider.

Multiple Measures

While the inclusion of student achievement data (e.g. measures of student growth) constitutes a prominent element of Wyoming's initiative to reform educator evaluation systems, it should also be acknowledged that a comprehensive and defensible system incorporates multiple measures that go beyond student performance on state tests.

These may include some or all of the following:

- Direct observations of educators by principals or peers
- Student surveys
- Parent surveys
- Analysis of artifacts (e.g. student work, instructional activities, lesson plans etc.)

Such information is critical for several reasons. First, student academic performance cannot fully address all dimensions of being an effective educator. Additional information is needed to get a more complete picture of the educator's performance. Second, multiple sources of information can enhance the reliability of the outcomes. When a collection of evidence is used to make classification decisions, it mitigates the error that may be associated with any one less reliable indicator. Finally, qualitative information that provides more in-depth information about educator practices can make the results more useful and actionable. Given that a prominent claim in Wyoming's theory of action is the use of educator evaluation results to improve practice, it is important to assemble information that better allows one to understand and receive feedback on specific professional practices associated with more or less favorable academic outcomes.

<u>Measuring Student Performance</u>

Fundamentally, any use of student academic performance data to inform judgments of teacher effectiveness should control for prior performance. Therefore, the assessments used must produce a measure that reflects the progress or growth of the student during the period of time the teacher provided instruction. Broadly, there are two primary elements that must be in place to accomplish this goal: 1) availability of one or more suitable prior scores and 2) application of an appropriate analytic method.

To start, the structure of the assessment system should be such that one or more suitable prior scores are available. One way to accomplish this is to use a score from the end of the previous year. Given that there is an assessment at the end of each of grades 3-8 in mathematics and reading, it may be possible to use the previous year's PAWS score as a baseline for determining progress starting in grade 4. However, this assumes that the tests are highly correlated and otherwise well designed for this purpose, including content representation, breadth and depth of information, and otherwise technically defensible. We address this topic in greater depth in Section V of this document.

However, this approach is more complicated for content areas not tested annually (e.g. science and high school) or for which no suitable standardized assessment exists (e.g. physical education, art). To be sure, the 'non-tested' issue is one of the most intractable challenges facing states seeking to include student performance in educator evaluation systems. A complete treatment of this issue is beyond the scope of this document, but a summary of some alternatives more fully developed in Marion & Buckley (2011) follows[8]:

[8] See: Marion, S.F. & Buckley K. (2011). Approaches and considerations for incorporating student performance results from "Non-Tested" grades and subjects into educator effectiveness determinations. Available at: www.nciea.org

1. **Custom developed state tests**: Wyoming may elect to develop new tests to address key gaps in tested grades or content areas. An advantage of this approach is that it likely offers maximum opportunity to create high quality assessments aligned to standards. However, the obvious disadvantage is the tremendous outlay of resources – both time and money – to develop and manage quality assessments over time.

2. **Commercially available tests**: Although some vendors offer seemingly promising standardized assessment solutions that can be flexibly administered and are less expensive that custom developed tests, this option is not without substantial risk. Most prominently, there are often serious issues with alignment and technical quality of 'off-the-shelf' tests.

3. **School/ teacher created tests**: Allowing schools or classes to develop assessments could serve as a professional development tool for educators and should promote alignment between instruction and content. Another advantage is the potential to measure more complex knowledge and skills than a selected response tests. However, both the quality and the comparability of tests developed at the school or class level is a very significant issue. Also, this approach may be more corruptible than other approaches.

4. **School-wide attribution**: In the absence of current and/or prior test data for the class/course of interest, it is possible to assign a school rating to the teachers with missing data. This alternative does introduce serious concerns that linkages between services and outcomes may be less direct. However, others have argued that such an approach increases engagement and cooperation of personnel throughout the school.

5. **Student learning objectives**: Some states are considering student learning objectives (also termed student growth objectives.) Broadly, this approach involves teachers drawing on classroom-based or information to establish goals for individual students or the class. The teacher then evaluates student and/or class progress toward these outcomes. This approach is appealing in that it has great potential for both educator and student development through the process of establishing and pursue meaningful learning outcomes. However, comparability and corruptibility are non-trivial threats to guard against.

Inclusion and Attribution

Attribution refers to an essential claim in the theory of action that educator practices influence the academic performance of students. To address this, Wyoming must be able to link student outcomes to educators and assemble evidence that demonstrates a credible connection between these elements.

Teacher/Leader of Record

Addressing attribution starts with determining which teacher/leader should be held accountable for a student's performance. This is often referred to as *defining the teacher of record.* A suitable definition - and an accompanying data system that permits operationalization of this

definition - should establish the conditions and circumstances governing the connection of educators with classes and account for the variety of learning environments in Wyoming schools.

For example, the Data Quality Campaign (DQC) (2010a) advises states seeking to use assessment data to inform educator evaluation to:

- Account for contributions of multiple educators in a single course
- Enable teachers to review rosters for accuracy
- Account for schedule changes and variable class environments such as virtual classes or labs
- Link attendance records with teachers to track actual days of instruction

Using a modified version of the high-level 'framework' for defining teacher of record offered by the DQC (2010b) a sample operational definition for Wyoming might include the following:

- The educator/ leader roles included (e.g. certified educators, academic coaches, mentors etc.)
- The amount of instructional time to establish a link (e.g. responsible for at least 50% or more of instructional time)
- Courses/ environments covered (e.g. courses for which there is an associated, valid test score)
- Prior measures required (e.g. at least two prior valid PAWS scores in the same content area).
- Other conditions (e.g. continuous enrollment requirement)

Missing/ Incomplete Data

Another 'data issue' to address is missing and/or incomplete data. This situation exists when any of the following occur:

- One or more prior (pre) test scores are missing
- The current year (post) test score is missing
- The student is not continuously enrolled in a single building/class throughout the term of instruction
- The student record is missing or incomplete (e.g. test scores but no identifier)

Missing data can impact the precision and stability of the growth analysis and introduce systematic bias in the resulting estimates (Braun et al, 2010). Moreover, it is generally acknowledged that data are not Missing At Random (MAR), meaning that it is likely that the performance of students with missing or incomplete data differs systematically from those with complete records. Consider, for example, that mobility rates are typically higher for economically disadvantaged students compared to other students.

When all or part of a record is missing, there are a number of potential methods to address this. One solution is to simply omit the records. This approach may be simple to understand and straightforward to implement, however, it is likely most vulnerable to potential introduction of bias for the reasons noted above. Alternately, Wyoming may implement one of several approaches to data imputation – or using a statistical method to populate the missing value(s). Imputation methods range from simple (e.g. replacing the missing value with the mean value of

all existing data) to more complex (e.g. using an algorithm to predict the likely value of the missing value based on patterns in the existing data).

There is no single or best approach to dealing with missing data. In general, we recommend Wyoming consider the following steps to address this threat moving forward.

- Identify business rules informed by impact analyses that clearly define what data are usable and which are not. Consider issues such as:
    - What is the minimum group size to calculate a class/school growth estimate?
    - Regardless of group size, what is the minimum inclusion rate to calculate an estimate? Inclusion rate refers to the proportion of students in a class or school that 'count' in the analysis. For example, if only 10 students in a class of 30 are included, this may meet the n-size rule, but may not be judged sufficient to represent the overall class effect.
    - How long must the student be enrolled in the class to 'count' in the computation?
- Investigate the extent that data are missing for districts, schools, and classes. Seek to understand patterns of missing data for various levels of performance and by subgroup. Such analyses will help determine the extent to which data are MAR or differ in a systematic manner.

Multiple Educators

As mentioned earlier, another issue to consider is how to handle circumstances where students receive instruction from multiple educators. There are three general cases that lead to this occurrence. First, the student may receive planned, ongoing instruction from multiple teachers, as with a team teaching approach or scheduled support sessions. Second, changes can occur throughout the year, such as a leave of absence for the primary instructor or the student transitions to another class. Finally, additional instruction can occur in a variety of contexts, such as when a student receives tutoring outside of class. Whatever the case, multiple sources of instruction will likely have an impact on student achievement.

Some researchers have hypothesized that a 'dosage' model may be appropriate in such circumstances. That is, if Ms. Smith provides 70% of instruction and Mr. Jones provides 30% of instruction, then the outcomes are assigned to the educators consistent with the proportion of instruction provided. While it may be useful to research the feasibility of this approach, we are skeptical that proportional contribution to instruction can be captured with precision, particularly when it is unscheduled. Also, it will be necessary to create potentially complex connections in the state data system to account for this. It is important to consider that the proportional contribution to instruction may not be governed by time alone. For example, an hour spent introducing new concepts to a class may not represent the same 'instructional contribution' as an hour spent overseeing time allotted for student directed study. Finally, the research on attributing a student's academic performance to teachers and leaders is emerging – even for the least ambiguous circumstances when the teacher of record is well defined. Much less is known about the credibility of results based on proportional attribution of scores.

We advise Wyoming to proceed with caution in exploring a 'dosage' model, ensuring the information is suitably trustworthy and the results are scrutinized carefully, particularly with respect to evidence of reliability and validity presented later in this document.

Causal Attribution

As stated previously, the use of student performance data to inform evaluations of educator effectiveness assumes at least a partial causal link between teacher performance and student outcomes. Establishing such links are problematic in light of research which suggests that though teacher influence on student learning is significant and persists across years, isolating that contribution using large scale assessment using observational data is difficult, if not impossible to accomplish. Numerous published writings by scholars on the subject over the past decade support this (see, for example, Raudenbush (2004); Rubin, Stuart, & Zanutto (2004); Linn (2008); Rothstein, 2009; 2010; Betebenner & Linn (2010); Briggs & Domingue (2011)).

In light of this, the use of student growth as a component of a high-stakes evaluation model demands additional evidence to validate a claim of effectiveness with regard to instruction. The collection of such evidence will help to bolster the credibility of the model and validity of the outcomes. Validation of effectiveness claims is a non-trivial task and typically involves engaging in systematic data collection and research to both strengthen the association between the hypothesized antecedent (i.e. quality instruction) and the consequent (i.e. increased test scores) and to rule out rival explanations for the outcome.

A good starting place for a program of research is to seek to determine a 'proof of concept.' That is, in the best case with at least a group of 'consensus quality educators,' (necessarily defined by judgment and existing criteria) what is the impact on student achievement? To what degree does this differ by content area, for students of various ability levels, among special populations, and over years?

Attribution claims can be further strengthened by addressing the sensitivity and bias of model results. For example, in their review of analyses of educator data in the *Los Angeles Unified School District*, Briggs and Domingue examine the extent to which the original model may have been misspecified, by investigating whether a student's teacher in the future could have an effect on the student's prior test performance (2011). Naturally, a strong 'reverse association' erodes confidence that the model is well suited to support claims. Briggs and Domingue also introduce variations in model specifications to explore consistency of ratings and examine outcomes with respect to confidence intervals to evaluate the precision of the estimates and the basis to claim the resulting classification is accurate. These analyses provide examples of the types of investigations that can serve as components of an overarching research agenda to explore the credibility of causal claims.

Reporting Outcomes of Educator Evaluation Determinations

Another critical decision for the educator accountability system will be to define the type and manner of reported results. This starts with clearly establishing the performance levels that must be produced and the purposes for which they will be used. In general, there is a tension between

reporting high-level results that are more reliable and the desire to report more nuanced but less precise outcomes for multiple indicators. For example, there will be a much higher level of confidence in classifications of class effects as low, typical, or high compared to a class effects described on a ten point scale from 1 (ineffective) to 10 (highly effective). In the latter case, stakeholders may regard this information as useful to understand more fine grained degrees of difference, but such a scale may carry only the appearance of precision that is not supported by evidence, particularly for adjacent ratings.

The same issue is generally true for reporting units. That is, results for individual content areas or classes will be much less defensible (and results based on strands or subscores will be almost certainly indefensible) than aggregate results for multiple classes. The goal, of course, is to find the balance between the necessary specificity of outcomes and an acceptable level of precision. As a matter of best practice, is advisable to privilege technical defensibility, in order to provide the best case for results to be meaningfully interpreted and utilized.

Finally, it is important to consider how to combine indicators and set performance thresholds. Once the key elements that will influence evaluations are identified and decisions are made about the 'weight' of each component, it is possible to combine the indicators in a manner similar to the alternatives described in the design section of this document.

These decisions are closely connected to the consequences and rewards that are indentified. In general, the higher the stakes, the higher the standard of evidence should be regarding the classification accuracy of the system. For example, it may be appropriate to require multiple years of low ratings to support a high-stakes decision such as termination or reassignment.

Sources of Error

There are multiple sources of error that may impact the precision and, consequently, the usefulness of model result[9]. The first is measurement error. Measurement error refers to the extent to which individual assessments in the evaluation system produce stable and consistent results.

Another threat is related to sampling error. This refers to variations in the population at the unit for which inferences will be based – the district, school or class. Sampling error is known to promote substantial fluctuations in school scores that can be unrelated to actual school performance (see e.g. Hill and DePascale, 2002) and it has the potential to introduce a great deal more uncertainty in class outcomes. This is particularly relevant given that students are rarely, if ever, randomly assigned to teachers. Sampling error is directly related to the number of observations - as the sample size increases, the variability reduces. Therefore, the problem is somewhat assuaged when computing a growth score for a school across several teachers and grades.

Yet another potential source of error is related to model specifications. Researchers have found that estimated effects are sensitive to model assumptions and specifications (see e.g. McCaffrey

[9] Information regarding sources of error and threats to utility addressed in Domaleski and Hill, 2010.

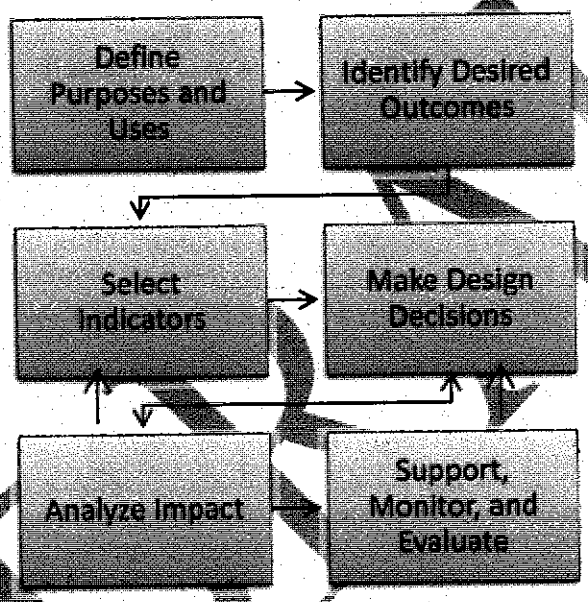
et al, 2003). In other words, adjustments to model characteristics, such as adding, deleting, or differently defining variables, will very likely produce dissimilar results.

Implementation Plan

The design and implementation of a reliable and valid system to evaluate educators involves addressing many complex challenges. In this section, we summarize the most important steps in the process to provide the basis of an implementation plan for the state.

Figure 11 shows the six major steps involved in implementing the educator evaluation system. This process is not linear. We recommend a process in which impact analyses and ongoing evaluation are used to gauge the adequacy of the model and inform appropriate changes to the indicators used in the model or refinements to the design.

Figure 11: Key Components in Design and Implementation of Educator Evaluation System



The first step in the process is to clearly define the purpose and uses of the system. As detailed earlier in this document, the intended goals should be reflected in an explicit and credible theory of action that makes clear the assumptions about what the state hopes to accomplish with the educator evaluation system and how the process will promote the desired outcomes, including the mechanisms that are hypothesized to promote these goals. This shapes subsequent decisions such as what information to include, how to report outcomes, and how to set performance expectations. This also helps clarify if/why certain requirements are important, which helps prioritize the elements that are most central to the success of the initiative.

Next, it is important to clearly define the desired outcomes. This includes identifying what information will be produced and how it will be communicated to all stakeholders. For example, will the system produce performance classifications? How many levels of classifications will be

produced and what will they mean? For instance, if the top classification is intended to qualify an educator for merit pay or the bottom classification leads to termination, this must be clarified from the start in order to better understand what information is needed and how performance standards should be established. Additionally, what content areas will be covered? Will the classifications combine content areas for each teacher or be specific to each content area? In what area should educators, leaders, parents, etc. receive feedback from the system (e.g. academlc growth of students, professional practices of educators etc.)? Only by laying bare all the intended outcomes of the system and the target 'audience' for each can developers ensure design decisions are made that support these outcomes.

Next, the state should identify the indicators that are central to supporting the goals and outcomes of the system. This is likely to include the academic performance of students, which, as noted previously, is much more difficult to address in content areas where a series of technically defensible, standardized, summative assessments are not administered. It may also include qualitative measures of educator performance such as observations of instructional practices, peer ratings, or surveys. In each case, it is important to determine what information is needed to support the claims and uses, whether this information can be obtained in a not overly burdensome manner to schools and systems, and if this information is likely to be sufficiently credible to support the intended claims.

Once the potential indicators are selected the next step is to determine how the information will be used to produce outcomes. This involves selecting a growth model and resolving the requisite specifications and decisions about the model (see growth section in this document for more detailed treatment of this topic.) It also involves determining how much weight or influence will be given to certain indicators (e.g. will qualitative evaluations count more, less, or about the same as academic performance indicators?). Whether to combine indicators both within and across categories is also resolved in the design phase. Yet another prominent design decision involves setting performance standards. This defines the minimum expectation for adequate performance or how well an educator must perform to attain designations intended to reward exemplary performance or that signal performance that is below standards? Finally, in the design phase it is important to identify mechanisms that are likely to bolster the reliability and validity of outcomes. For example, using results that reflect an average over multiple years may be regarded as preferable to a single year to enhance reliability of results. Or, it may be necessary to adopt different rules or procedures for educators in certain schools or class environments, such as those teaching in alternative schools.

In order to make the best decisions about the suitability of the model, including identification of trustworthy indicators and appropriate design decisions, it is critical to engage in ongoing data analysis. These analyses should include a review of the distribution of outcomes for all proposed reporting units and aggregated to various summary levels. Special attention should be given to examining results based on differences in student populations (e.g. are results different for educators in schools serving a high percentage of impoverished students?) and based on differences in indicators (e.g. are results substantially different for selected grade or content areas?). All indicators should be carefully piloted and results should be investigated for reasonableness and compared to any credible existing information to assess the validity of outcomes. For example, if a pilot of peer surveys or a trial of proposed observations of

instructional effectiveness reveals little variation in outcomes (i.e. all or nearly all teachers are rated effective) then the credibility of the indicator ls called into question. This may necessitate removing or changing indicators, reweighting model components, and/or adjusting performance expectations.

Finally, a comprehensive implementation plan should include a process for ongoing monitoring, evaluation, and support. This includes but goes beyond producing impact analyses as described in the previous stage. In addition to examining year to year changes in outcomes, the evaluation plan should investigate the claims and assumptions in the theory of action. For example, are educators and leaders using the information to improve practice? Are rewards effective incentives? Are remediation and support strategies effective in improving outcomes? A systematic process to collect evidence and evaluate model claims will help state leaders identify refinements to the model to improve effectiveness.

Student Accountability Considerations

Introduction

Senate File 70 directs the State Board of Education to review an alternative to the current body of evidence system with a goal of replacing the current BOE system for school year 2012-2013. The legislature directed the SBE to consider using end-of-course (EOC) tests that could be used as an alternative to the Body of Evidence (BOE). Since the BOE is a student accountability system designed to determine if students are eligible for high school graduation, we assume that the EOC tests are expected to support graduation decisions. In this section we discuss some considerations for creating/modifying a high school graduation system.

First, we note that it is beyond the scope of this report to make specific recommendations about a student accountability system since this issue was addressed only peripherally by the Select and Advisory Committees. Rather, we outline the steps necessary for creating an EOC-based student accountability system and highlight key considerations for the Select Committee and other stakeholders. In the course of revising the current graduation system, subsequent legislation should define a process for making critical decisions about the various components of such a system. This legislation should explicitly articulate the degree to which the new legislation is replacing or working within the context of existing Wyoming graduation statutes (W.S. 21-2-304 and the State Board Chapter 31 Rules). This process should undoubtedly include key stakeholders, as part of a design committee, such as local school board members, district and school leaders, teachers, guidance counselors, businesspeople, higher education representatives, and students. These stakeholders should be guided through a process where they can wrestle with the following key components of developing a student graduation accountability system:

- Definition of a Wyoming graduate
- Knowledge, skills, and dispositions
- Accountability Decisions
- Assessment system
- Support and Interventions

What is a Wyoming Graduate?

The most critical aspect of developing a student graduation accountability system is to define a Wyoming high school graduate. The design committee should spend appropriate time developing this description and likely should solicit significant input prior to moving forward. Ideally, the goal is to develop a shared understanding of what it means to be a Wyoming high school graduate.

The next step in the process is to describe the knowledge, skills, and dispositions (perhaps) that further specify the definition of a Wyoming graduate. These are often the high school content standards in the various subject areas. But if things like dispositions (e.g., persistence) are included, the design committee should specify these non-content areas such that students, parents, and teachers are clear for what students are being held accountable. The design committee should also wrestle very important considerations such as how well the students need to perform on the standards in order to graduate and whether or not students should have to perform up to these expectations on all standards or content areas, a targeted set (core) of content areas, or some combination of these two possibilities. Of course, there are other possibilities that must be determined by this committee.

A Process for Thinking About Student Accountability

While SF 70 recommends that the State Board consider implementing an EOC system to potentially replace the current BOE system, it was silent on many important details. Before designing an EOC assessment system, the design committee, State Board, and perhaps the legislature will need to define the accountability rules of the graduation system. This follows naturally from the discussion of the required/expected knowledge, skills, and dispositions. There are many such accountability and assessment decisions to be made, including:

- What framework or approach will be used to organize the EOC exams?
- Which courses will include a state EOC exam?
- Which standards will the tests be designed to measure?
- What are the participation rules for any or all of the exams?
- At what level should the passing scores be set?
- What consequences will be associated with the results?
- Will retesting be included? How many opportunities?
- Can other sources of evidence replace EOC scores?
- Will there be an appeal process for students not meeting graduation standards on the testing system?
- How will the system address issues of student mobility?

The SBE and the design committee will first need to define a framework for organizing the EOC exams[10]. It is doubtful that the legislature intended to authorize creating EOC exams in every possible high school course. W.S. 21-2-304 and Chapter 31 required that students meet

[10] For more information on state practices and alternatives relative to using EOC tests in accountability see: Domaleski, C.S. (2011). *State End of Course Tests: A Policy Brief*. Paper commissioned by the Council of Chief State School Officers Technical Issues in Large Scale Assessment State Collaborative on Assessment and Student Standards.

standards in all nine content areas included in the "basket of goods." Even though this narrows the range of possibilities from all possible courses to an exam or set of exams in each of nine content areas, this will still be a significant expense and will require considerable resources within WDE and LEAs to successfully implement such a system. Therefore, we are interpreting SF 70 to mean that the EOC should focus on key courses within the four core subject areas of mathematics, science, social students, and English language arts.

With guidance from the Select Committee, the design committee will need to identify the courses for which EOC exams will be created. However, existing rules require that students demonstrate proficiency in five of the nine content areas. Therefore, existing statute and rules will need to be amended or these EOC exams will have to fit within the existing Chapter 31 framework. For example, all or some of the EOC exams could be required components in each district's Body of Evidence system. Having such a framework will help with decisions about whether students will be required to pass any or all of these exams in order to graduate.

The current Wyoming content standards, as well as the Common Core State Standards (CCSS), are domain-based and not tied to specific courses. However, in order develop EOC exams, it will be important to identify the eligible content and skills for each of the exams. This might mean simply identifying existing current standards that will be tested in each of the courses or developing content frameworks specific to each course. In either case, it will be critical to the validity of the exams and to the transparency of the system for the State to explicitly identify the eligible knowledge and skills for each of the exams.

Once decisions are made about the courses for which the EOC exams will be developed and what they will measure, the design committee must determine the participation rules for the various exams. For example, will all students be required to take all courses for which there is an EOC exam and/or will all students enrolled in an EOC course be required to participate in the exam?

In addition to expected consequences associated with these exams (i.e., they will count towards graduation decisions), there are other decisions to be made related to consequences. For example, will students be expected to pass the exams in order to pass the course, will the exams be required to carry a specific weight in the course grade, or will the decisions about how the EOC exams will factor into course grades be left up to locals? Any decision to count the EOC exams as any part of the course grade will have important implications for the timing of the testing window and required turnaround time for scoring. As noted above, situating these decisions within a larger framework (e.g., BOE) will lead to more coherent policy.

If there are consequences associated with individual exams (e.g., passing the course or if students are expected to pass a specific set of exams to graduate), the design committee and policy makers must deal with the issue of retesting. Essentially all states that use exam-based approaches to graduation decisions permit at least one, and often many, retest attempts. If the exams are to count in course grades, this raises many tricky logistical and fairness issues. But even if the exams are not included in course grades, the issue of retesting can be much more

challenging when dealing with EOC exams compared to a more common end-of-high school exam[11].

The issues of alternate sources of evidence and potential appeal processes are somewhat related to the retesting issue. The design committee and policy leaders will have to determine if other sources of evidence (e.g., portfolios or projects) can substitute for any or all EOC exams. If so, a design committee and policy leaders would have to decide if such alternatives should be available to all students or just certain groups of students (e.g., special education, ELL, migrant). Additionally, it will be prudent to plan for an appeal process for students who do not meet graduation requirements. Related to the alternate evidence issue, the design and policy committees will need to decide how to handle students who move into Wyoming after any or all of these exams are typically offered. A likely approach will be to use the student's transcript to provide "alternate" evidence that the student met or did not meet the graduation evidence represented by specific EOC exams. Again, it makes sense to address these major policy issues within a larger graduation requirement framework.

Relationship to the full assessment system

Current practice in Wyoming involves administering one assessment in high school for each reading, mathematics, science, and writing. If an EOC testing system was implemented, it would make little sense to continue to administer the end of domain tests as is current practice, but to rely on the EOC system to serve as the school and educator accountability assessments for high school. The Advisory committee should study and make recommendations about how best to use the EOC tests in the school and educator accountability systems.

A process note

As illustrated above, there are many thorny issues to address in the design of a student accountability system. To that end, we recommend that the current Advisory Committee, along with perhaps some additional ad hoc members, be invited to serve as the basis for a design committee that reports to the State Board of Education.

[11] Note: We are definitely not recommending a single set of end-of-high school exams, but just pointing out the contrast.

SECTION IV: SUPPORT, CAPACITY BUILDING, AND CONSEQUENCES

Support, Interventions, and Capacity Building

The Advisory Committee recognizes that an accountability system is only valuable if it leads to, or at least facilitates improvement in both student and school results. The accountability system itself cannot improve student and school achievement, but it should be designed to both incentivize the "right" behaviors and provide results that are specific and informative enough such that school leaders and other stakeholders can learn about the educational aspects under their control that might need improvement. One of the things we know well from educational psychology is that task-specific feedback is more likely to lead to improved performance than general feedback. We have no reason to believe that organizations would act differently than individuals in terms of the response to specific or general feedback. This section of the accountability framework, based on extensive discussions and input from the Advisory committee, describes some of the supports and interventions necessary to realize the type of improvement and level of achievement envisioned by Wyoming policy makers. While it is tempting to collapse all supports and interventions into a single topic, the Advisory Committee recognizes that it is important to address each of the following levels in a comprehensive support system:

- Support/intervention for low performing students
- Support/mentoring for teachers needing to improve
  - Induction for new teachers and leaders
- Support/mentoring for school leaders
- Capacity building for schools and districts with lower than acceptable levels of achievement or growth
- Capacity building for the state as a whole to support continuous improvement
- The role of institutions of higher education in building capacity and preparation especially in terms of P-16 coordination

Further, the Advisory Committee recognizes that several aspects of such a support/capacity building system are already provided for in the school funding formula. The committee, however, strongly suggests that these aspects of support/improvement be addressed comprehensively along with the development of an accountability framework.

Elmore is quite eloquent and persuasive in outlining at least one aspect of the challenges we face. While there is little talk of "stakes" in the sense of what we commonly think of as high stakes (e.g., takeovers, firing school leaders), the labels placed on schools via the reporting of accountability system results and the public dissemination of such results are seen as stakes by many in the system. Our charge is becoming clearer. We must insist on a system that allows schools to develop the capacity they need to affect the instructional core. Just as we have argued for formative assessment to help students know where they stand relative to key standards, we also need tools to assess the capacity of schools to enact key reforms and interventions. Elmore (2004) reminds us of the challenge we face in our work:

> *Hence, stakes work, if they work at all, by mobilizing and expanding capacities in high-capacity schools and creating potential demand for capacities outside the organization in low-capacity schools. In the latter case, if there are no capacities to bring to the organization, there is little reason to expect the organization to do*

anything other than to make incremental adjustments to already unsuccessful practices (p. 289).

In this 2004 chapter, Elmore goes on to outline five principles of accountability system design. While all of the principles are worth considering, the fifth principle is especially pertinent to the work of the Advisory Committee.

The fifth principle is the reciprocity of accountability and capacity—for each increment in performance I require of you, I have an equal and reciprocal responsibility to provide you with the capacity to produce that kind of performance (p. 294).

It is important to think of this as a multi-level challenge. For example, the "I" could be the teacher and the "you" could be their student(s). Similarly, the "I" could be the principal and the "you" could be the teachers, and so on. The point is clear. Each level of the system that is imposing any sort of accountability on the level below is responsible for providing the capacity for that level to succeed.

Building Capacity in Wyoming Schools

Given this framework for thinking about accountability and capacity, we discuss the multiple levels of capacity needs, starting from the students and working up to the state level. This is not the place to present a definitive plan for capacity building at all levels of the accountability system. Rather, our goal here is to outline the key considerations for each of the levels and to argue that the State convene appropriate advisory groups and relevant agency personnel to develop detailed plans (including cost ramifications) for addressing these issues in the context of a comprehensive accountability system.

Capacity building for schools and districts

Given that accountability system is focused first at the school level, improving the capacity of schools will require considerable effort and support. The accountability system itself must be designed to incentivize appropriate activities, but as importantly, must yield information that school leaders and educators can understand and use to help identify areas in need of improvement. As with students, information must be specific to the particular initiative and focal area. Information should also be presented for current and multiple years to avoid having schools act on what might not be reliable yearly information.

Further, the accountability system should be focused on the highest leverage indicators, in terms of bringing about significant improvement in the rates of college and career readiness. This does not preclude the reporting system from including a broad array of process and outcome indicators. However, the accountability system should help schools develop a clear focus on those indicators deemed to be most important. This would send a clear message to schools about what is most valued and what levels of performance are deemed acceptable. If designed well, the reporting system should allow the schools and perhaps capacity building personnel to use this additional information to help improve performance on the accountability indicators. In other words, the information included in the reporting system should be linked through a theory of action to the accountability indicators. For example, we discussed holding schools accountable for graduation rates, but including credit accumulation at the end of 9th grade in the reporting system because of its clear link to the accountability indicator.

We must ask in terms of capacity building about additional support and capacity buildlng needs require by schools beyond those targeted for teachers and school leaders? It can be argued that schools are simply collections of individuals, so that if we focus on students, teachers, and principals, is there any need to worry about building "school capacity?" We argue that just like if both spouses in a marriage pursue counseling as individuals, there is generally still a need to pursue marriage counseling to address "system" issues. Similarly, we argue that the system issues of a school should be addressed as well.

The capacity building needs for schools could be considerable and highly varied. Therefore, an effective set of supports organized at the district, regional, and/or state level should be able to differentially respond to the varied needs of schools. This suggests a more nuanced approach than simply having all schools follow the same school improvement steps. A regional approach that included some sort of intermediate level service agency with enough capacity to adjust to the varied and multiple needs of schools could be one approach for increasing school capacity in WY. However, many states have such agencies (e.g., BOCES) and it would be worth careful study of these intermediate agencies in other states to identify the most effective organizational and educational strategies before adopting such an approach in Wyoming.

Schools have specific cultures and high functioning schools have cultures where data are used to identify goals, design interventions and strategies, create or select tools for monitoring the progress toward goals, evaluate the success at meeting the goals and then starting the cycle again. This problem identification, hypothesis testing, and evaluation is the work of high performing schools and the work that we hope becomes enculturated in all schools. The advantage of this hypothesis-testing approach is that it quickly moves away from a central focus on one size fits all solution, but helps to build the capacity so that schools and districts develop the tools and techniques to address a range of problems that might be faced by schools.

Support/intervention for low performing students

Students will perform "poorly" for a variety of reasons and conditions. The first step is to be clear about what we mean by "poor performance." Even taking a simplistic definition of poor performance, such as scoring below proficient on PAWS, leads us quickly into a myriad of possible diagnostic and intervention paths. While the information available from a summative assessment is necessarily limited in terms of student diagnosis, the inclusion of student longitudinal growth results can allow the school to determine if the student is low achieving, growing slowly (relative to peers), or both. However, schools will need considerably more fine-grained information to be able to better understand students' strengths and weaknesses if they want to implement systematic approaches for improving student learning. First, schools should not be waiting until the summative assessment results are returned at the end of the school year or in the summer to find out that students are performing below expectations. Additionally, it is highly unlikely that a two or three times per year "benchmark adaptive assessment" will provide specific and frequent enough information for diagnosing and monitoring student achievement. Schools will need to implement systematic approaches for helping students improve their performance, including (but not limited to):

- Appropriate support and interventions for special education and English language learners,

- Formative and classroom assessment tools useful for ongoing progress monitoring and interventions,
- Employing a Response-to-Interventions (RTI) or similarly systematic approach for diagnosis, intervention, and monitoring,
- Differentiated instruction within classrooms and additional support services outside of classrooms for targeted instructional areas, and
- Creating "extra time" opportunities such as after school and summer school enrichment opportunities.

Any of these approaches should work to encourage the development of student agency and metacognitive strategies so that students develop internal capacity to learn to help themselves. Of course, a discussion of supports for students leads quickly to the recognition that, as Elmore noted, high-performing schools already have the capacity to address many or all of these examples of student supports, whereas low-capacity schools do not. This can really be viewed as a problem solving or hypothesis testing enterprise in that the first step is first figure out the problems, pose strategies, and find the capacity to address the problems. This really should be seen as the work of schools and not as extra work.

Support/mentoring for teachers needing to improve

Many of the approaches highlighted above for students assume that a high quality teacher will be in place to provide such services. As Elmore indicated, unless something shifts in the instructional core, student learning is unlikely to improve. Teachers have the major responsibility for improving the quality of the core, but many need help to enact the high quality instruction needed to bring about high levels of student learning. This is especially critical if expectations are to be increased such that all students leave high school ready for college or careers. Further, if Wyoming adopts the Common Core State Standards (CCSS), the need to raise curricular and instructional expectations will be immediately apparent. The accountability system must then provide information that is specific enough to enable schools and teachers identify strengths and weaknesses for targeting improvement efforts.

The Wyoming school funding model currently includes provisions for an instructional coach at each (or most) buildings. This is certainly a good start towards building increased capacity among Wyoming's teachers. Further, while having such a resource in each building would be considered a luxury in many states, it will likely not be enough to raise performance to levels heretofore not seen in most states. It has been well documented that many or even most teachers lack the content and pedagogical content knowledge to engage students in tasks that require students to wrestle with complex subject matter. There will need to be considerable training and support to help Wyoming teachers fully understand the curricular and instructional ramifications of the CCSS. While much of this support must happen locally, it would make considerable sense to capitalize on collective resources and expertise to help meet this enormous need.

In addition to the professional development work that must occur for existing teachers, there needs to be a considerable improvement in the quality of new educators coming out of teacher education programs. Once these new teachers enter the workforce, schools and districts need to support the continued development of these novice teachers with high quality mentoring and induction systems for new teachers and leaders.

Support/mentoring for school leaders

Most school reform leaders argue that a school leader is the linchpin of educational improvement. While it is possible for schools to be somewhat effective with a less-than-effective leader, it is almost impossible for a school to be effective with an ineffective leader. Similarly, an effective leader does not guarantee an effective school, but it certainly improves its chances. To hammer this point further, KIPP Schools, the highly successful charter organization, will not open a new school unless it has a well-trained principal to lead that school. Unfortunately, public schools do not have the luxury of waiting to open schools until a high quality principal is in place. This heightens the need to ensure that current principals receive the training and support they need to become highly effective instructional leaders and to improve the pre-service training provided to principal candidates before they can lead schools.

There is a pressing need to improve the capacity of school leaders in Wyoming and in most other states. Unfortunately, there are few, high quality opportunities in Wyoming to improve the capacity of current and future schools leaders. The isolated nature of schooling in Wyoming does not help the situation. Wyoming's John P. Ellbogen Leadership and Advocacy Institute is one notable professional learning opportunity for current and future school leaders, but it is not enough. A much more systematic approach will be required to recruit, train, mentor, and support current and future school leaders. In particular, district superintendents need training on how best to identify, train, and mentor new leaders.

There are several models on which to draw, led by the work of the Wallace Foundation, Interstate School Leaders Licensure Consortium (ISLLIC), and others, but it will be important to design a school leadership training and support network tailored to Wyoming's context. Additionally, the University of Wyoming will need to be engaged as the primary institution for providing pre-service education to prospective school leaders.

Capacity building for the state as a whole to support continuous improvement

It is one thing to consider support and capacity building for individual schools, but given the goals associated with the proposed accountability system, the capacity building to meet these accountability goals will require a different form of support never seen before. Therefore, it does not make sense to operate in a reactive mode whereby the State or other provider tries to rush around the state putting out "spot fires." Rather, the state-level approach should be much more proactive by identifying the highest-leverage and highest-need topics on which to target the capacity building at the state level. If we think about the state as a system, systems get smarter at aggregating the knowledge gained. Somehow, the knowledge gained from working at both the micro (school/classroom) and macro (region/state) levels needs to be aggregated and shared so that all in the state may benefit. One way to think about a reformed capacity building approach is to take seriously Elmore's 4th and 6th principles of the Instructional Core:

> ***Principle #4:*** *Task predicts performance.*
> ***Principle #6:*** *We learn to do the work by doing the work. Not by telling other people to do the work, not by having done the work at some time in the past, and not by hiring.*

In the case of building statewide educational improvement capacity, we should think of "task" more broadly than intended by Elmore's original formulation as an instructional or assessment tasks that leads students into profound interactions with meaningful content and skills. However,

we do not need to stray from this formulation too far. The tasks could be those sorts of activities and products that bring teachers and leaders into "profound interactions" with meaningful school improvement activities such as using data to inform decisions or creating strategies for improving the quality and rigor of mathematics instruction. Elmore's sixth principle, we learn by doing, applies to adults as well as to students (perhaps even more so!). Therefore, the state needs to structure professional learning opportunities that are far removed from the typical "sit and get" professional development sessions.

One approach, that could be done regionally or at the state level, would involve creating networks of schools and districts interested in working on a particular issue or challenge. The Body of Evidence (BOE) Activities Consortium serves as one stellar example of a network of districts that came together to produce an important set of products, but more importantly, to increase the learning of the participants by doing the work! For those who do not remember or have come to the state more recently, the BOE consortium was a network that at its peak included essentially all districts as fully participating members, had full support (and leadership during the early years) from WDE, and high quality expert consultants. All three pieces were critical to the success, and we should be mindful that all pieces either need to be in place in the formation of any new networks or we should have a clear and defensible rationale for suggesting modifications to this approach. This is not to say that there is any single approach that will work well to improve system capacity, but we should be thoughtful in what is suggested, especially in terms of any apparent shortcuts. On the other hand, lest we appear too parochial, we would be wise to recognize some great success in capacity building examples from other states and countries. Massachusetts is one state that comes to mind from which we might find some good examples, but the experiences from Queensland, Australia, Ontario, Canada, and Finland all bear examining.

The main point of this discussion is that the State needs to come up with a well-conceived strategy in order to significantly raise the levels of achievement across the state. This strategy must be comprehensive and have the resources (especially in terms of expert leadership and support) allocated to support and sustain these initiatives. The Advisory Committee recommends that the State require and support a capacity-building advisory task force to help design a structure (or structures) for significantly increasing the capacity among educational personnel, institutions, and ultimately students in the state of Wyoming.

The relationship of consequences (response) and supports

As discussed throughout this document, consequences cannot bring about the change envisioned by the policy makers without serious attention to support and capacity. The nature of consequences associated with the accountability system will discussed more completely in another section of this report. The discussion here focuses specifically on the relationship between consequences and supports.

If we are building a system that is truly focused on school improvement then it has to be more than consequence driven, in the typical sense of the word. Under performing schools should be provided targeted professional development to build the skill set of the teachers and administrators first, then if that is not enough then targeted intervention programs for students

and technical assistance should be provided. When a student struggles we do not punish them, but engage them in a series of increasingly intense interventions designed to improve their performance. Why should it be any different for teachers and schools? But, just like with students any assistance provided to schools must be based upon data, and monitored for progress towards the target goals.

The Advisory Committee **recommends** that consequences should be framed in the sense of necessary supports. These consequences also should be linked with district accreditation. The Committee further **recommends** that the accountability system produce performance designation in multiple levels that are linked to increasing levels of required support. The committee is not recommending a specific number of levels—likely at least three and probably no more than five—but the levels should be tied closely to specific categories of support. However, while the general class of interventions, supports, and improvement goals should likely be specified along with the level, the committee **recommends** that specific the accreditation targets and improvement goals should be negotiated between the school (district) and the state? This approach may help develop and support more internal capacity within schools and districts and lead to greater overall capacity statewide in the long term.

SECTION V: VALIDITY AND OTHER TECHNICAL ISSUES

This section of the report encompasses several key concerns related to the development and implementation of a standards-based accountability system. The major focus of this system is on the design of an accountability validity framework. Such a framework would guide the implementation of an evaluation of the accountability to make sure that it is functioning as intended and not leading to unintended negative consequences. Further, since the proposed accountability systems are based largely on standards-based assessment, this section begins with a discussion of the desirable characteristics and important validity concerns of both standards and assessments. Even though we present this section last, it is by no means least.

Standards: The Foundation of the System

This is called "standards-based" reform for a reason. The foundation of the system is the content standards that define what students are expected to know and do and the achievement (also called performance) standards that define how well students are expected to demonstrate understanding of the content standards. The goals of the accountability system implicitly invoke the use of content standards that will allow Wyoming policy makers to determine if, in fact, Wyoming students are reaching these goals. The first goal of having Wyoming become a national leader among states demands having a valid basis for making such comparisons. NAEP is typically used as a method of such judgments. There are many shortcomings with this approach, but the major problem is that NAEP results are not available at the district or school level. Further, even if NAEP was available at the district level, one would have to evaluate whether one district scored better than another because the higher scoring district's curriculum happened to match the NAEP framework more closely or because they were truly providing a better education. Using common standards would eliminate the first potential hypothesis to explain such score differences. Therefore, if policy makers and others want to compare Wyoming's performance with that of other states, having common standards makes such comparisons more plausible.

Wyoming policy makers indicated that having students leave Wyoming high schools college or career ready was a critical goal for implementing a comprehensive accountability system. Having content standards that define college and career readiness is essential if policy makers are serious about this goal and it is unfair to expect schools to meet this goal if there were no standards to serve as a guide for where educators need to aim. Further, the Select Committee members indicated significant concern with the levels of remediation required for Wyoming students in postsecondary institutions. Having content standards that help close the expectations gap between the end of high school and the beginning of postsecondary studies is critical so that students have a clear sense of expectations and educators have a similar understanding. Therefore, the Advisory Committee unanimously recommended that the State of Wyoming adopt the Common Core State Standards (CCSS). While there might be some legitimate concerns about the lack of control over the standards, the Advisory Committee felt that any concerns were far outweighed by both the high quality of the CCSS and for the reasons mentioned above.

Assessment Characteristics

The assessment system is the next leg of the standards-based accountability system and is critical in that it provides a great deal of the data for use in the accountability system. While a valid assessment system is necessary for having a valid accountability system, it is not sufficient because of the many other sources of data and decision rules that compromise accountability systems. Nevertheless, Wyoming policy and educational leaders should strive to have the highest quality assessment system possible to support accountability decisions. Therefore, we present specific considerations and criteria to bolster the likelihood that these assessments will support valid accountability decisions. We highlight only a few considerations here, because there are other important documents[12] that should guide the development of state accountability assessments.

Technical Characteristics

There are many technical characteristics of assessments important to the development of a valid accountability system all centered on supporting the validity of the inferences we draw from test scores, but we focus primarily on alignment, including rigor, reliability, and linking.

Alignment

Alignment, or the degree to which the test adequately measures the required content, is a critical technical issue for an accountability assessment. This falls under a fairness and transparency principle because those being held accountable (students, educators, school systems) should have a clear understanding of the knowledge and skills for which they are being held accountable. Alignment can get quite complex, but basically alignment is the degree to which test questions measure specific grade-level knowledge and skills represented by the content standards that teachers are expected to teach and students are expected to learn. Moreover, the degree to which the full set of grade-level standards is appropriately sampled by the assessment should be addressed in independent alignment studies. This "two-way" approach to alignment is important because many tests may claim alignment simply because the test questions match specific content standards even though important aspects of the standards are left untested.

If the content and performance standards are designed to represent college and career ready expectations, the assessments must also represent these expected outcomes. Any content and performance standards purportedly targeted to college/career readiness, and certainly the Common Core State Standards, demand demonstrations of complex thinking from students if they are, in fact, going to be declared "ready." Therefore, the accountability assessments used in Wyoming must be able to measure students' depth of understanding much more so than they do now. Doing this will require that a significant proportion of the test questions rely on formats

[12] The Standards are considered the "bible" and are more formally known at the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association). Additionally, the United States Department of Education's Guidance for the peer review of state standards and assessment system is another important set of criteria, but based in large part on the *Standards*.

such as constructed response items and performance tasks where students are expected to generate their own responses and often provide a substantial explanation for their solution or response.

Reliability

Reliability, or the degree to which the test score can be expected to be consistent over time or over a different sample of items that represent the same domain, is a critical dimension of test quality, especially for accountability assessments. Reliability is simply the quantification of the error associated with any measurement. The *Standards* and the USED peer review guidance provide extensive detail about reliability and we will not go into great detail about reliability here. We briefly describe, instead, the importance of having a test that is fairly reliable across the full score distribution. If the main purpose of the assessment was to document whether or not students reached a specific cutscore (e.g., proficient), then it is really only important for the test to be reliable in the region of this cutscore. On the other hand, if the assessment is intended to provide useful information about all students and, most importantly, if it is designed to support growth measurement for students, the test should be fairly reliable throughout most of the score scale. This notion of reliability at specific scores is better discussed as the Conditional (conditioned on the particular test score) Standard Error of Measurement (CSEM). Tests used to support growth determinations do not have to possess equally low CSEM across the entire score distribution, but the CSEM at the high and low ends of the grade level achievement distribution should not be dramatically greater than the CSEM in the middle of the distribution. This requires that the test contain questions with a range of difficulty (the addition of open-response questions can help with this) and contains enough questions to support reliable inferences.

Scaling and Linking

While it is important that the test contains fairly low CSEM across the score scale, it is also important that the test does not have noticeable floor or ceiling effects. There is little doubt that on fix-form tests like most state assessments will have some students at the very highest and lowest scores possible. This does not pose a problem for accountability. However, it could cause challenges with growth determinations if there are noticeable percentages (e.g., 2% or more) of students scoring at the lowest or highest score on the tests. This will generally be more of a problem at the upper end of the performance distribution because as long as the test includes some multiple-choice questions, low achieving students are able to benefit slightly from chance and avoid scoring at the very lowest possible score. The range of item difficulty influences the highest and lowest possible scores, but decisions on how to scale tests can play a significant role as well. Scaling is the process of transforming the raw scores (the number of questions students answered correctly) to a scale that has more meaning across uses beyond that specific test form. Score scales are useful for communicating about acceptable levels of performance (e.g., proficiency) across test forms and occasions. Therefore, Wyoming should ensure that its tests are scaled appropriately to avoid floor and ceiling effects.

A meaningful and defensible score scale is certainly important to the success of the assessment and accountability system, but ensuring the specific test scores and/or achievement standards (proficiency) are comparable across test forms, especially across years is one of the most important aspects of the technical quality of accountability assessments. The process of linking, which represents a family of techniques that includes score equating, is how testing experts can

state that a score of 200, for example, from 2010 has the same meaning as a score of 200 from 2011 even though the students from the two years did not take the same tests. The details of linking are too complex to discuss in this report, other than to say that linking and equating are complex enough that many testing contractors make errors in equating procedures that lead to unexpected declines or improvements in performance over years. The problems with linking are usually detected in the case of these unexpected score changes. What is more troublesome are the many cases where the score changes were not large enough to raise alarms. In this case, errors could accumulate over time and seriously threaten the validity of the accountability system. Therefore, as part of any testing contract, Wyoming must ensure that equating results produced by the main test contractor are verified by another equating expert either through a review of the procedures and results (a minimal level of quality assurance) to a full replication of the equating procedure (the maximum level of quality assurance).

Other Assessment Considerations

The testing industry has developed a sound knowledge base and set of procedures to ensure that the technical quality issues raised above are addressed appropriately. Of course, a third party, such as a high-quality technical advisory committee, must verify that these issues are, in fact, being addressed. There are other issues critical to the success of both the assessment and learning systems that are not often addressed in technical evaluations. The most important issue includes the role of a summative accountability assessment as part of a comprehensive assessment system. As we discuss in more detail below, assessments generally can serve one or two purposes well. If one tries to force an assessment to serve too many purposes, it means that it will not serve any of them well. So how then can an assessment provide both accountability and instructional information? If can't! Therefore, a comprehensive assessment system is required.

A comprehensive assessment system is one that includes assessments designed to serve multiple purposes (e.g., accountability/summative, formative/instructional, predictive, evaluative) with designs tailored appropriately for each purpose (Perie, Marion, & Gong, 2009). Again, this report is not the forum to go into great detail about comprehensive assessment system, but we discuss the role of a summative, accountability assessment in such a system. First, for a system to be comprehensive and function well, it must be coherent. What do we mean by coherence when it comes to the various assessments in a system? A minimum the assessments must be targeted toward the same or at least purposely overlapping learning goals. Therefore, the summative, interim (if used in the system), and formative assessments must focus on the same learning goals or content standards. Of course, they can and should do so in different ways and with differing levels of granularity, but it must be clear that all assessments in the system are aiming at the same target. The summative, accountability assessment should go a step further and signal or represent the type and depth of learning we expect to see represented in curriculum, instruction, and in other assessments in the system. This signaling ensure coherence and helps make clear the expectation for learning, especially depth of learning, required in other parts of the system. To use a counter example, if the learning goals require students to solve complex problems and demonstrate a depth of understanding, but the accountability assessment only requires the demonstration of rote learning, it will not take long for the instruction to follow the accountability pressure and lead to teaching of low level outcomes only. Therefore, Wyoming's

summative assessment system must include the types of problems and depth of understanding that we expect to see in high performing Wyoming classrooms.

Accountability Uses of Benchmark Adaptive Assessment

Wyoming's Senate File 70 authorized the use of benchmark computer adaptive testing to measure student longitudinal growth as part of the state accountability system. Apparently the intent of this provision was to broaden the accountability indicators beyond the state assessments and to use a measure of growth that essentially all school districts in Wyoming were already using. While this makes some intuitive sense, there are many concerns with this approach, specifically:

- Using an assessment for a purpose for which it was not designed,
- Concerns with the technically quality of the particular benchmark assessment, and
- The loss of any instructional value of the benchmark assessment by shifting to an accountability use.

These three concerns are all related and we briefly touch on each concern before offering some recommendations. Further, while the law (SF 70) did not name a specific assessment company, most involved in the legislation as well as observers acknowledge that Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) was the intended product implied by the legislation. However, our remarks below are directed toward interim/benchmark assessments in general.

Purposes and Uses

Perhaps the most important axiom in test design and evaluation is that the technical quality of tests can be evaluated only in the context of the specific purposes for which the assessment is intended to be used. For example, if an assessment is designed as an early warning indicator for how students are likely to perform on the end-of-year state test, then it must be validated for that purpose. Assuming the validity evidence is positive, that does not mean that the assessment is also valid for a different purpose such as program evaluation. Validity evidence would need to be gathered for additional purposes.

Most test vendors report that their products are useful for evaluating programs, informing instruction, and several other purposes. The validity evidence supporting any one of these purported purposes may be available, but since there has been little independent evaluation of almost all of these assessment systems and their reported benefits, one cannot demonstrate conclusively that there is evidence to support claims about such assessments for instructional, predictive, and/or evaluative purposes. On the other hand, accountability generally is not one of the stated purposes of benchmark/interim assessments, especially high stakes accountability. Therefore, little evidence would be available to support the accountability uses of any of these assessments. To be fair, some of these assessments possess some qualities that could potentially allow it to be used for accountability, but as described below, there are many shortcomings that could challenge the validity of such uses.

Technical Quality

What is a minimum level of reliability required for an assessment? This is a question that technical experts often are asked about assessments, but unfortunately, the answer is rarely clear cut. Essentially all experts will note that the level of reliability depends on the uses. If the assessment results are used to determine whether or not a student graduates from high school or whether a teacher is rated as effective or ineffective, for just two examples, then the test must be highly reliable. But if the results are just part of an ongoing set of information about how to inform/modify instruction, then the results of any particular assessment are not as critical and one could get by with lower levels of reliability. This is just an example, because the reliability of many interim assessments tends to be quite adequate.

Alignment, as discussed above, ls critical for ensuring the validity and fairness of an assessment. We know of no independent alignment studies that have evaluated the degree to which any potential interim/benchmark assessments are aligned with Wyoming's content standards. For obvious reasons, independent alignment studies are much more credible than studies conducted by the test contractor. In fact, WDE and all other states were required to submit independent alignment evidence of the state assessment (PAWS) to the U.S. Department of Education as part of the federal peer review process.

The Center for Assessment has examined the alignment of state content standards (from other states) and provided technical advice on such studies in other states. In all cases, we found that claims that the test was fully aligned to the specific state's standards were considerably overblown. Further, all of the questions on most commercial interim/benchmark tests are multiple-choice. Many researchers and others have made clear that to appropriately represent the types of knowledge and skills called for by most state content standards (including WY), questions where students have to generate and supply their own responses (constructed and extended response questions) are needed. Therefore, the current crop of commercial interim/benchmark assessments will be unlikely to meet important "depth of knowledge" alignment requirements[13] as long as it remains a fully multiple choice based assessment. This problem will be exacerbated when Wyoming implements the Common Core State Standards (CCSS), because these standards require students to demonstrate considerably deeper understanding compared to most state assessments and this depth of knowledge should be assessed with items that require students to generate their own responses.

Perhaps the most significant concern with the technical quality of most commercial interim assessments is the generally low quality of the actual test items (questions). Adaptive tests are those where the computer program selects the items for the students to answer based on prior responses. The test stops according to a specific set of rules, but generally when the program has honed in on an accurate estimate of a student's achievement. Because it is critical to be confident in the pre-established item difficulty and the degree to which the items fit the theoretical model underlying the computer algorithm in this type of testing environment, the specific statistical properties of the item are often privileged over other aspects of item quality. In the past, commercial interim assessments have been criticized for low item quality (e.g.,

[13] We recognize that the SF 70 requirement to eliminate all constructed response questions from PAWS creates alignment problems from the state assessment as well.

Shepard, 2006; Marion 2006), and while there is a chance that the item quality has improved, the constraints around item development for the huge pool of items required for an adaptive test, will likely mean that these assessments will suffer from lower quality items than custom designed large-scale assessments. Some might argue that these concerns about Item quality are overblown, but if a test is to be used for accountability, especially educator accountability, policy leaders do not want to have to defend justifiable complaints about low quality test items.

Campbell's Law and Corruptibility

Much of what has been written above questioned the quality of the commercial benchmark assessments for many reasons, but mostly for their use as a potential accountability assessment. Even if we take at face value that these assessments provide instructional benefits—and there is no doubt that many school and district leaders report this to be the case—then a quick way to reduce any teaching and learning benefits of these assessments is to move them into an accountability context. This is not to say that assessments lose all instructional potential if they are used for accountability, but the fall-to-spring growth calculation used by some of these benchmark test vendors could easily be corrupted if educators are held accountable for these gains. Currently, educators have no vested interest in their students' performance on the fall test, but if educators and schools were accountable for the change in performance from fall to spring, they would actually have an interest in having their students perform poorly on the fall test so they could realize larger gains (all things being equal) on the spring test. This is just one example. There are many other possibilities for corruption and the loss of instructional usefuiness if the benchmark assessments are employed for accountability purposes. To be fair, this caveat applies to any accountability design built on fall to spring measures of learning gains.

Recommendations

The following two major recommendations flow logically from the concerns expressed above.

- Do not use any commercial interim assessment as an accountability test.
- Allow districts to purchase interim/benchmark or formative products if they choose, but do not require the use of a single product. Districts should be able to choose based on needs and uses.

It should be clear by now that assessments designed for purposes other than accountability should not be used for accountability decisions unless the assessment can be validated for such uses. Interim and benchmark test vendors are generally not very specific about the intended purposes of their assessments in order to appeal to as broad a market as possible, but even still, very few, if any, interim/benchmark tests are marketed as accountability tests and validated for these uses. Further, by using such tests for accountability, the users run the considerable risk of giving up on the purported instructional benefits of these assessments. Therefore, there is little rationale for having the State support (i.e., pay for) the using of a common benchmark or interim assessment product.

The second recommendation follows directly from the first. The policy makers should certainly allow district leaders to use their block grant funds to purchase an interim/benchmark assessment program, support formative assessment initiatives, or create their own common assessment program. There is a fair body of research supporting the use of formative assessment practices

for improving student learning, but there no such corpus of research supporting the use of interim/benchmark assessments for these purposes. Considering this lack of research, it makes little sense to advocate a specific interim assessment product or a particular model of use (e.g., administered three times per year). Rather, districts should be free to select the model that they think will work best for their context and needs, evaluate the efficacy of such a model in their districts, and adjust the testing program if necessary.

Evaluation of the Accountability System

In addition to evaluating the technical characteristics of the assessments, it is critically important to evaluate the accountability system. We cannot overstate the importance of a comprehensive investigation prior to implementation and ongoing monitoring and support following implementation in order to maximize the likelihood that the state's objectives will be met.

Following, we present key claims that should be investigated in the evaluation process along with exemplar studies to inform each. Although not comprehensive, these components are intended to capture the core areas that should be examined to evaluate the suitability of the model.

Evidence Supports Claims in the TOA

This claim addresses the supports and structures that must be in place to bolster the integrity of the information in the model and to improve the likelihood that actions based on information derived from the accountability model will promote intended outcomes.

This broad claim connects to many aspects of Wyoming's education system including:

1. The content standards and resulting curricular frameworks are designed around a credible learning progression and they represent the knowledge, skills, and abilities necessary to promote college or career readiness.
2. State assessments provide reliable and valid scores.
3. Academic growth information based on state and/or other assessments is credible and technically defensible.
4. Educators have access to the right information and have the knowledge, skills, and support necessary to improve student learning.

Results are Reliable

Reliability refers to the consistency or stability of a measure. In this case, we are interested in the reliability of the measures of schools or teacher/leader outcomes. Reliability is challenging in this context due to the error in both achievement measures and growth measures.

Additionally, reliability is impacted by sampling error. Sampling error refers to fluctuations in school or class outcomes scores that can be unrelated to actual school performance. In fact, Hill and DePascale (2002) emphasize that sampling error, "contributes far more to the volatility of school scores than measurement error." Sampling error can work to both the advantage and disadvantage of schools on reported accountability determinations, but the goal is still to minimize the effects of sampling error on school results.

There are multiple statistical approaches to evaluating the reliability of school or class determinations. However, at a minimum it is advisable to track the consistency of outcomes for various levels (e.g. schools, subgroups) within and across years. Although not without exception, it is expected that results will be well correlated for similar school types within year and for the same schools across years. Dramatic shifts in either classification of schools or characteristics of the distribution will signal a troubling lack of stability that will erode the credibility of the outcome.

Results are Valid

If reliability addresses the extent to which the model provides a consistent answer, validity asks, "Is the answer correct?" Stated another way, to what extent are the results credible and useful for the intended purposes? At a minimum, an investigation of the validity of the model should address the following:

1. Is the model appropriately sensitive to differences in student demographics and school factors?
2. Are the results associated with variables not related to effectiveness or generally those not under the control of the school, such as the socioeconomic status of the neighborhood?
3. Are the classifications credible?
4. Are negative consequences mitigated?

The first question addresses the extent to which the model differentiates outcomes among schools and/or classes. A model in which very few schools differ with respect to results (i.e. all ratings are high) will likely be out of sync with expectations and the credibility of the results will be suspect. Therefore, it is important to examine the distribution of results to determine if the outcomes are sensitive to differences and if the dispersion is regarded as reasonable and related to expected differences in school quality as documented from other means.

Second, it is important to examine the distribution of scores with respect to variables that should not be strongly associated with outcomes. For example, if there is a strong negative relationship between student poverty and school scores (i.e. lower poverty= higher scores) this suggests that effective schools are only those in which relatively affluent students are enrolled. Similarly, if there is a strong positive relationship between a student's prior year achievement and a rating of educator effectiveness, this indicates that the most effective teachers are those in classrooms where the students started out as high performing. Such findings are implausible and erode credibility of the model.

The third question calls for examination of classifications with respect to external sources of evidence that should be correspondent with quality. For example, one would expect a higher percentage of teachers who have been certified by the National Board of Professional Teaching Standards to be classified as effective compared to those who are not. Similarly, high schools with higher graduation rates or higher college-going rates should, in general, receive more favorable outcomes that schools struggling in this area. It should be clear that if the school accountability model is intended to identify and reward those schools that are preparing students

for college and career, the validity evaluation will be incomplete without including data that reaches beyond K-12 and provides an indication of the post-secondary outcomes for graduates.

Finally, a validity evaluation should address the extent to which unintended negative consequences are mitigated. If potentially troubling consequences such as narrowing the curriculum, reduced professional cooperation, educator transition/attrition, or cheating on standardized tests occurs, the validity of the system is threatened. Some of these threats could be examined via survey data or focus groups, while others may be explored with extant data. Importantly, ongoing initiatives to gauge the extent to which positive outcomes outweigh potential negative side effects will bolster the consequential validity of this initiative and provide a mechanism to promote continuous improvement.

References

Conley, D. (2005). *College knowledge: What it takes students to succeed and what we can do to get them ready*. San Francisco: Jossey-Bass.

Data Quality Campaign. (2010a). Strengthening the teacher-student data link to inform teacher quality efforts. Retrieved from: www.DataQualityCampaign.org/resources/947.

Data Quality Campaign. (2010b). Developing a definition of teacher of record. Retrieved from: http://dataqualitycampaign.org/files/Teacher%20of%20Record.pdf.

Domaleski, C.S. (2011). *State End of Course Tests: A Policy Brief.* Paper commissioned by the Council of Chief State School Officers Technical Issues in Large Scale Assessment State Collaborative on Assessment and Student Standards.

Domaleski, C.S. & Hill, R. (2010). Considerations for Using Assessment Data to Inform Determinations of Teacher Effectiveness. Retrieved from: http://www.nciea.org/papers-UsingAssessmentData4-29-10.pdf

Betebenner, D.W.(2009). Norm- and criterion-referenced student growth. *Educational Assessment: Issues and Practices, 48* (4),pp. 42-51.

Betebenner, D.W. & Linn, R. L. (2010). Growth in student achievement: issues of measurement, longitudinal data analysis, and accountability. Exploratory Seminar: Measurement Challenges Within the Race to the Top Agenda. Center for K-12 Assessment and Performance Management. Retrieved from: www.k12center.org/rsc/pdf/**BetebennerandLinn**PolicyBrief.pdf

Briggs, D. & Domingue, B. (2011). Due diligence and the evaluation of teachers: A review of the value-added analysis underlying the effectiveness ranking of Los Angeles Unified School District teachers by the Los Angeles Times. Boulder, CO: National Education Policy Center. Retrieved from: http://nepc.colorado.edu/publication/due-diligence

Glazerman, S., Goldhaber, D., Loeb, S., Raundenbush, S., Staiger, D. and Whitehurst, G. (2011). Passing muster: Evaluating teacher evaluation systems. Brown Center on Education Policy at Brookings. Retrieved from: http://www.brookings.edu/reports/2011/0426_evaluating_teachers.aspx.

Hill, R.K., & DePascale, C.A. (2002). Determining the reliability of school scores. Portsmouth, NH: The National Center for the Improvement of Educational Assessment Inc. Retrieved from: www.nciea.org

Linn, R. L. (2008). Educational accountability systems. In The Future of Test Based Educational Accountability, pages 3–24. Taylor & Francis, New York.

Marion, S.F. & Buckley K. (2011). Approaches and considerations for incorporating student performance results from "Non-Tested" grades and subjects into educator effectiveness determinations. Retrieved from: www.nciea.org

McCaffrey, Daniel F., Daniel Koretz, J. R. Lockwood and Laura S. Hamilton (2003). Evaluating Value-Added Models for Teacher Accountability. Santa Monica, CA: RAND Corporation. Retrieved from: http://www.rand.org/pubs/monographs/MG158

National Research Council. (2010). Getting value out of value-added. H. Braun, N. Chudowsky, and J. Koenig (eds.). Washington, DC: National Academy Press.

Perie, M., Marion, S.F., & Gong, B. (2009). Moving towards a comprehensive assessment system: A framework for considering interim assessments. *Educational Measurement: Issues and Practice, 28, 3*, 5-13.

Raudenbush, S. (2004). Schooling, statistics, and poverty: Can we measure school improvement? (Technical report). Princeton, NJ: Educational Testing Service. Retrieved from: www.ets.org/Media/**Education**_Topics/pdf/angoff9.pdf

Rothstein, J. (2009). Student sorting and bias in value-added estimation: Selection on observables and unobservables. *Education Finance and Policy*, 4(4), 537–571.

Rothstein, J. (2010). Teacher Quality in Educational Production: Tracking, Decay, and Student Achievement. *Quarterly Journal of Economics, 125*(1), 175–214.

Rubin, D. B., Stuart, E. A., and Zanutto, E. L. (2004). A potential outcomes view of value-added assessment in education. Journal of Educational and Behavioral Statistics, 29(1):103–116. Retrieved from: www.ucce.ucdavis.edu/files/workgroups/6798/**Rub**inEtAl.pdf

Benchmark Adaptive Assessments in Wyoming:

A Preliminary Report on The Pilot Study Required in SF 70

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Introduction

The possible use of a benchmark adaptive assessment for schools in Wyoming was initially raised in Enrolled Act 90 (SEA0090/Senate File 70), the state educational accountability law enacted by the legislature in the 2011 general session. The pertinent section of the Act is reproduced below.

Section 5.

(a) The state board of education, through the state superintendent and the department of education, shall pilot a statewide benchmark adaptive assessment during school year 2011-2012 in accordance with requirements prescribed under W.S. 21-2-304(a)(vii) and W.S. 21-3-110(xxix). Assessment results from the pilot administratian under this subsection shall be used to establish student achievement level alignment with the statewide summative assessment and student performance target levels for implementation in the 2012-2013 school year. Reports on progress under this section shall be provided by the state board to the select committee on education accountability created under section 4 of this act during benchmark adaptive assessment development and implementation. A final report shall be provided to the select committee on or before December 1, 2011. The select committee shall provide necessary enabling legislation for assessment implementation in school year 2012-2013.

The legislation directed the Wyoming Department of Education to pilot a "benchmark adaptive assessment" during the 2011-2012 school year, and further specified that a final report on the pilot shall be provided to the joint select committee on or before December 1, 2011. Further specified is the expectation that enabling legislation will be passed that mandates implementation of a benchmark adaptive assessment in school year 2012-2013. Whether this requirement will remain in legislation that emerges from the 2012 legislative session is not clear at this time.

The specific purposes of a pilot benchmark adaptive assessment are specified in the excerpt from Section 5 of EA 90 above. They are:

1. Assessment results from the pilot administration under this subsection shall be used to establish student achievement level alignment with the statewide summative assessment, and
2. [establish] student performance target levels for implementation in school year 2012-2013.

This report is a preliminary document on the status of the pilot efforts, with a final report to follow later. The delay in the completion of the final report will be described in more detail later in this document, but rests on the fact that Measures of Academic Performance (MAP) data for the fall administration sent to the Northwest Evaluation Association (NWEA) by the districts, and subsequently sent to WDE, arrived in an incomplete fashion, thus delaying the fall data analysis.

The Pilot Administration Design

Following the passage of the legislation WDE began the pilot planning process. Decisions about the design elements of the pilot had to be made quickly if data were to be collected in the 2011-2012

school year. Similarly, data management activities were planned to handle the data that were anticipated from the pilot administrations.

WDE's initial response to the requirement for the pilot administration of a benchmark adaptive assessment was to evaluate the availability of a pilot assessment instrument to use to collect student performance data.

Due to its availability and wide use in Wyoming schools, the MAP assessment, published by the NWEA, was selected for use as the data collection instrument.

WDE worked with the school districts to plan the data collection for the 2011-2012 school year. Numerous activities characterized the preparations for data collection.

As of this writing, student performance data have arrived at WDE from the NWEA, and are being cleaned and evaluated for accuracy and completeness.

Preparation for the Fall 2011 Pilot Administration

On July 26, 2011 the Wyoming Department of Education published a Superintendents Memo outlining the implementation and administration of the MAP pilot program. The memo required all districts to attend one of two, two hour WEN video session that covered the topics for:

- Fall and spring testing windows
- Measures to be given
- Accommodations and inclusion
- Reporting and other protocols
- Question and Answers

Dr. Laurel Ballard, Charlene Turner and Sean Moore from the Department chaired the WEN video sessions and provided logistical planning and technical assistance, and addressed concerns from district personnel. Additionally, the Department created a FAQ document as well as a MAP rubric to help address and align the Early Literacy Initiative, EA90, and the Bridges Summer School Programs. The MAP testing window opened at the beginning of 2011-12 school year and closed October 14, 2011.

In addition to the training provided by WDE, two sets of training were provided by Northwest Evaluation Association (NEWA).

1. MAP for Primary Grades (Kindergarten-Grade 2) Survey w/Goals covered:
   - Early Assessments for Reading and Math
   - Introduction to primary grades teachers and proctors outlining the features of computerized testing. The training provided an overview of how to administer the MAP for Primary Grades tests to early learners. In addition, participants learned how to access and apply the test results.
   - The training was one (1) hour and accessed via the link provided. http://www.nwea.org/support/course/map-primary-grades-administration
   - The recorded online training was self-paced via facilitator-led recorded sessions.

2. MAP Standard (Grades 3 – UP) Survey w/Goals covered:
   - A ½ (half) hour recorded online training was self-paced via facilitator-led recorded sessions via the link provided. http://www.nwea.org/support/course/map-proctor-training
   - After viewing the training, participants were prepared to serve as proctors for their school(s) and had the ability to share with colleagues in their district the basics of the MAP system, an understanding of how the test works, what a Rasch unIT (RIT) score is, and how to know which test to give.
   - Documentation was provided for download within the presentation. Participants accessed the training and print materials prior to viewing.

Data Collection for the Fall 2011 Pilot Administration

The preparatory activities discussed above were intended to smooth the way for an efficient and accurate MAP data collection, first in the fall 2011 and then in the spring 2012. The scheduled administration of the MAP took place, and district data were transmitted to NWEA, who in turn submitted the data to WDE. As soon as the data were examined by WDE staff, it became clear that there were serious problems with the data.

Issues encountered with the NWEA MAP data file(s). There were numerous issues WDE faced with the fall MAP data received from NWEA. These included:

- Duplication issues
  - Multiple schools for same student
  - Multiple IDs for same student
  - Identical records
- School Name Issues
  - inconsistent school names
  - non-existent school names
- Results Record Issues
  - Results were provided but were associated with unidentifiable students
- WISER ID Issues
  - Many records did not contain the student's WISER ID number. When there is no WISER ID given, it creates the inability to accurately identify students due to mismatched birthdates, name spelling, and other associated characteristics

These issues made it very difficult to confirm the validity of the data. WDE staff spent a substantial amount of time cleaning the data, creating a clean, usable data file, and conducting final quality control measures so that the data were prepared for the analysis phase. Currently, WDE appears to have received all of the WISER IDs from the districts, and is in the process of final file cleaning and creation. Preliminary data analysis should start by the first of the year.

In summary, the data collection for the fall 2011 administration had some problems. The problems appear to have been largely remedied and will be directly addressed as plans for the spring 2012 data collection are put in place.

Expected Outcomes of the Data Collection

The first expected outcome, based on the legislation, is "*... to establish student achievement level alignment with the statewide summative assessment.*" The goal here is to be able to relate test scores on the MAP assessment with performance levels on the PAWS assessment. Establishing such a relationship would potentially allow districts to know whether a student is progressing through the performance levels and give an early indication of which performance level a student will fall in when PAWS is administered.

The NWEA conducted a study in 2010 that documented the statistical relationship between PAWS and MAP. The results are contained in a report published in February 2011. As the report indicates, NWEA was able to establish a statistical relationship between the instruments using both a fall and spring administration of their instrument. This statistical relationship establishes a match between scores on MAP and the PAWS scores that most students with a given MAP score will likely make on PAWS but does not establish a relationship between what MAP measures and what PAWS measures.

For example, in the NWEA report referenced earlier, a scale score of 214 on the spring administration of the 5th grade MAP mathematics test is equivalent to being classified as "proficient" on the PAWS 5th grade test. The expectation is that MAP and PAWS data gathered in the 2011-2012 school year could also evaluate the statistical relationship between the two instruments and relate MAP scores to PAWS achievement levels.

This statistical relationship is but one desirable characteristic of an adaptive test that could be used in Wyoming. In addition to the statistical relationship, using adaptive test results to target instruction based on strengths and weaknesses obtained from test scores should also be a characteristic of any adaptive test used in the state. [1]

For example, predicting from an adaptive test that a student may be "proficient" on PAWS based on a statistical relationship does not provide sufficient information about what a student may know and be able to do. With such knowledge, targeted instruction can be planned. A scale score of 214, for example, does not imply that a student knows or can do the content that defines "proficient"

[1] Note that, strictly speaking, a benchmark test is not equivalent to a formative test (assessment) that can provide diagnostic information to the teacher on-demand. However, diagnostic information from any source should be consistent with the content of interest.

on PAWS. The content relationship is important to understand, so that test users can make valid interpretations of test scores.

The second expected outcome of the pilot study is indicated in the bold section of the text below.

*"Assessment results from the pilot administration under this subsection shall be used to establish student achievement level alignment with the statewide summative assessment and **student performance target levels for implementation in the 2012-2013 school year."***

Slightly restated, the second outcome can be seen as:

Assessment results from the pilot administration under this subsection shall be used to establish ... student performance target levels for implementation in the 2012-2013 school year.

The exact meaning of this part of the legislation probably needs elaboration so that the current pilot analysis can address the intent of the legislation.

Should the Pilot be Redesigned?

The current pilot design appears to be able to statistically relate scores on an adaptive test with scores on PAWS, thus addressing one purpose for administering the adaptive test. The capacity of the current pilot design to produce test results that can help teachers understand student strengths and weaknesses vis-à-vis Wyoming content is an open question.

As the pilot study now stands, it appears that the statistical relationship between PAWS and MAP can be re-estimated and some measures of average growth on the MAP scale from fall to spring can be obtained and related to PAWS performance.

A statistical relationship is a necessary but not sufficient characteristic for test instruments when one purpose of the test administration is to obtain results that can inform instruction. A case can be made that informing instruction may be at least as important a desired characteristic of a benchmark assessment as is benchmark statistical data. Therefore, a new focus and a new set of pilot activities are called for if there is interest in the possible implementation of an adaptive interim assessment that can truly help teachers help students achieve. But before examining what a refocused pilot design might look like, some of the major reasons for a refocus need to be examined.

An Important Additional Purpose for Benchmark Adaptive Testing. One purpose of benchmark adaptive assessments is surely to monitor achievement over time, whether it is over a semester, a school year, or between years. Another purpose of such an assessment is to use it as a surrogate for a statewide summative assessment such as PAWS. Combining these two purposes allows districts to evaluate the amount of growth they are seeing in their students and allows them to get some early indications of how students will perform on the statewide summative test. Accurate and timely student performance information permits targeted instructional interventions that can result in increased student performance.

As reviewed earlier in this paper, while the adaptive test used in the current pilot test may be adequate for monitoring growth on some numeric scale and for statistically relating its scores to PAWS scores, it does not appear to provide sufficient information that allows effective, targeted instruction consistent with Wyoming content standards. *This is a mandatory purpose for a benchmark assessment that is intended to support effective instructional intervention.*

Instruction in Wyoming must primarily focus on the Wyoming content standards. PAWS, of course, is completely based on the Wyoming content standards. While there are important instructional outcomes that go beyond the state outcomes, and teachers are free to include them in their instructional programs, the primary instructional focus must be on state standards. Effective instruction on the state standards will be reflected in increased student achievement as measured by PAWS. Therefore, any assessment of student achievement used in Wyoming must rest on state content standards and must provide test results and score interpretations that are not just statistically based, but that are content referenced to Wyoming content standards.

One example might illustrate this point. A WDE staff member was recently visiting a local school district, and an instructional leader related a story about assistance she provided a teacher on planning instruction to a 3rd grade student based on benchmark adaptive results from the fall administration. The test results indicated that based on the obtained scale score the student in question needed additional help in phonics-related outcomes. The instructional leader and the teacher then collaborated on an instructional plan for the student that emphasized phonics-type activities. While these types of skills may play a role in the instructional program of some students, they do not play a prominent role in Wyoming content standards. Certainly, test results based on Wyoming standards will give teachers informational priorities consistent with important Wyoming outcomes.

A Technical Digression. Understanding why an adaptive test that is not sufficiently based on relevant content standards has some difficulty providing on-target diagnosis will illustrate why it is so important to have an adaptive test that, in addition to being statistically related to PAWS, is also completely congruent in terms of its content definitions. The issue here is the central issue in educational measurement: the content validity of the assessment.

How is the content congruence between an adaptive test bank and the statewide content standards established? If an item bank is developed specifically based on a state's content standards, and the match of the items to standards is validated, then when the adaptive test is put in place the resulting content-referenced information will reflect student performance relative to the state standards.

If items are written or obtained for the bank that represent a set of wide-ranging content standards, then the resulting scores will reference those standards, and not necessarily the standards that are of specific interest to a state and the focus of teachers' instructional efforts. Test publishers frequently assert their tests are content valid with any given state or district's content standards, whether paper and pencil or computer delivered. The evidence for this claim usually comes from content matches conducted by the publishers between their standards and items and a client's

standards. While these studies can be very valuable, the important thing is to have the match to standards done by a third party that has no vested interest in the outcome of the matching study. Absent such a study there is just no way to know whether suggestions of congruence between test instruments and state standards are valid. With a large enough item bank the appearance of congruence can be achieved, but unless there are a sufficient number of content-valid bank items located at the right areas of the achievement scale, the apparent fit may be a statistical result with little or no substantive or content validity. *An adaptive test for Wyoming must have the items in the bank independently evaluated for congruence to the state content standards.*

The way a computer adaptive test selects test items to administer can be driven by desired content characteristics and statistical characteristics of items and examinees. Adaptive tests present students with selections of items primarily based on student responses. A statistical algorithm selects alternately easier and more difficult items and presents them to the student until the computer decides it can stop presenting items because it "knows" how to calculate a student's scale score. As the sequence of item presentation proceeds, the statistical difficulty of the items gets narrower and narrower. Just as the difficulty of the items presented to the student gets narrower, so does the range of content the student sees in the items.

Not only is content narrowed for each student, but students who are "low" scorers may be presented with a meaningfully different set of items than a "high" scorer. In fact, to some degree, each student will be presented with a unique set of items.

The point here is that the set of items a student receives in the pilot study may have a highly variable relationship with Wyoming content standards because the bank from which the items are selected may have an unknown relationship with the Wyoming content standards, and therefore an unknown content relationship with PAWS.

Additionally, there could be an "interaction" between the difficulty and content coverage of the items in the bank and student level of achievement. For example, it is possible that all of the items in a large bank that are content-valid with Wyoming standards are predominantly at the "easier" end of the difficulty spectrum, or they could be at the "harder" end of the spectrum. If the items in the bank are clustered in terms of their difficulty at places in the bank where they will not be selected for Wyoming students, then our students will instead receive items that define content that we do not emphasize. This could be why the student in the earlier example received "phonics-type" items when they are not content valid for a Wyoming student.

The possibility exists that the student referenced earlier did not even respond to any phonics-type items at all, yet still received a report that said help was needed in phonics. This can happen as follows: based on the scale score obtained by the student, the computer will look at sets of items that have been grouped together based on an *a priori* content similarity (not necessarily tied to any particular jurisdiction's content standards) and it will estimate the proportion of those items the student would have answered correctly *had the student actually been administered the items*. While technically speaking this estimate of performance could be accurate, the estimate is being made on the wrong test

content for Wyoming's purposes. *In Wyoming we do not want to know how a student would have done on a set of items they might not have actually taken and that do not necessarily measure Wyoming content, we want to know how a student* ***actually*** *did on items that* ***directly*** *measure Wyoming content standards.*

Content congruence between test instruments can be manifested in multiple ways. One way that of the strength of the association between the pilot test instrument and PAWS can be illustrated is to calculate correlation coefficients between scores on the two instruments. The higher the correlation coefficient between the pilot instrument and PAWS the more likelihood is that the instruments may be measuring the same construct. The lower the correlations the less likely it is that the instruments are measuring essentially the same thing.

Correlations have been calculated between the pilot instrument and PAWS scores based on 2010 data. These correlations are presented NWEA's "Linking Study" published in February 2011. The correlations between the MAP and PAWS for grades 3-8 mathematics are reported respectively as: .659, .684, .650, .712, .688, and.564. Note that these correlations are between two instruments intended to measure essentially the "same thing," mathematics. Higher obtained correlations between the instruments might give more confidence about the strength of the relationship between them. Fundamentally, less than half of the variation in the PAWS scores is accounted for by the statistical association between the instruments.[2] Even if the correlations between the instruments had been higher, a simple statistical relationship is not enough to completely document the association between the test scores. Rather, the content similarity between the tests is the fundamental building block necessary to enhance the meaning of the statistical relationship.

There are other technical characteristics of a benchmark adaptive assessment that should drive design considerations. Many professional disciplines have their established professional standards that members are expected to follow. Assessment has its professional standards, as well, jointly published by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (a shorthand reference is used here referring to them as the AERA/APA/NCME Standards, or "The Standards"). All testing programs are expected to scrupulously follow The Standards. For example, Wyoming has strict requirements for following The Standards for PAWS, writing, and PAWS-Alt. The federal peer reviewers also follow the Standards very closely in the peer review process.

There are twenty-four standards on validity in The Standards. Test developers must strive to meet as many of the validity standards as possible, knowing that not all of The Standards can be equally met. For example, the first three validity standards deal with:

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[2] The standard procedure for determining how much two tests share in common is to square their correlation coefficient. For example, if two sets of test scores have a correlation coefficient of 0.70, their shared variance, or how much they have in common, is 0.49, or 49%.

1. A rationale should be presented for each recommended interpretation and use of test scores, together with a comprehensive summary of the evidence and theory bearing on the intended use or interpretation.
2. The test developer should set forth clearly how test scores are intended to be interpreted and used. The population(s) for which a test is appropriate should be clearly delimited, and the construct that the test is intended to assess should be clearly described.
3. If validity for some common or likely interpretation has not been investigated, or if the interpretation is inconsistent with available evidence, that fact should be made clear and potential users should be cautioned about making unsupported interpretations.

In the case of the "phonics-type" interpretations introduced earlier in this paper, if the nature of those intended score interpretations are reviewed against the validity standards above, a reasonable question might be raised about whether those types of interpretations are fully consistent with the intent of the professional validity Standards.

As a short aside, the third validity standard is important to keep in mind if any student performance data is used as part of a teacher evaluation system – whether an adaptive test or not. Some school districts are using benchmark adaptive scores as a component of teacher evaluation. Evidence regarding the valid use of MAP scores for this purpose has not been examined nor published in Wyoming. Since student performance is being used for this purpose right now, for educational and legal reasons any future use of benchmark adaptive tests for teacher evaluation must be validated for that purpose, regardless of the test format.

The capacity of the MAP to fully meet all applicable professional standards for the purposes it is being used in Wyoming has been addressed in a recent document prepared by Scott Marion for this committee ("Considerations Regarding Accountability Uses of Benchmark Computer Adaptive Tests, November 23, 2011). In that paper Dr. Marion goes into great detail discussing many important characteristics of MAP use in Wyoming that would benefit from closer scrutiny. WDE fully agrees with and supports Dr. Marion's conclusions in his analysis.

Based on the discussion points presented above, and the characteristics of an adaptive test that could best support instruction, the design of a future valid benchmark adaptive assessment for use in Wyoming will require some design and schedule changes.

Where Should We Go Next?

Given that the fast start to the pilot study may have led to some gaps in the planning of the pilot, and given that the use of a pilot instrument that has more content-valid diagnostic characteristics would have been desirable, the following recommendations are proffered assuming that a computer adaptive, benchmark test is still under strong consideration.

1. Terminate all current work on the pilot study, including the spring 2012 data collection of MAP data as well as the suggested possible mid-year data collection. There does not appear to be any

substantial value-added information beyond what was collected in 2010 that could be learned from the current pilot.

2. Instruct WDE to create a comprehensive plan for legislative and Board review and approval that will clearly state the purposes for which a computer adaptive benchmark test is desired and will provide a plan, schedule, and budget for achieving the goal of a pilot evaluation of an adaptive test prior to any decision about whether an operational adaptive test will be implemented.

   For example, one purpose of an effective adaptive test will likely be that good diagnostic information is provided. But even more than that, any test must demonstrate that the diagnostic information it provides is consistently reported from one form (administration) to another. This is the type of test characteristic that must be demonstrated for any adaptive test we may develop or adopt. Another adaptive test characteristic that should be considered is whether any system for Wyoming should be capable of administering constructed-response items.

3. One major part of the revised plan for a pilot study should be the issuance of an RFI so that WDE and the legislature can avail themselves of the thinking of the most experienced companies and persons.
4. After legislative and Board approval of the pilot plan, begin work immediately to complete a comprehensive pilot study.
5. Take the time necessary to do a high quality investigation of the best adaptive assessment approach for Wyoming's educators, parents, and students. A realistic schedule might look something like:
   a. Complete revised pilot plan by February 1, 2012
   b. Receive approvals to proceed with the plan March 1, 2012
   c. Receive RFI responses May 1, 2012
   d. Complete final pilot plan and receive approvals July 1, 2012
   e. Conduct pilot study September 2012-October 2012
   f. Final Pilot report December 2012
   g. Make final decision on whether to install an adaptive test January 2013
   h. Conduct procurement February– May 2013
   i. Full implementation September 2013

Delaying an original schedule is not easy. When expectations are high that a new component of an important program like PAWS may be able to happen in the short-term there is momentum for it to happen on schedule. But quality cannot be sacrificed for convenience or because of a need to meet short-term schedule requirements. The stakes are too high, not just for PAWS but for the likely accountability system that the legislature will install for Wyoming's schools.

Should a critical need to accelerate the suggested schedule presented above emerge, it is possible to truncate the pilot phase by closely examining how other states have implemented adaptive tests that meet statistical and content criteria. At least four states have been successful implementing an operational, content valid, computer adaptive assessment system; they are: Oregon, Delaware,

Hawaii, and Minnesota. These states are sharing items that are content valid and share a similar web-based adaptive platform.

The desire to use an extant instrument is understandable. MAP is popular with the districts, and it is in widespread use because it is easy, fast, modestly priced, and believed to be a "good" instrument. But quality requirements that districts may have for test use within their district are much less than those requirements states have for the use of test instruments in higher stakes environments. Wyoming must utilize test instruments that provide summative, benchmark, and diagnostic information so that on-target instruction can be provided Wyoming's students. Re-specifying the pilot test plan will better ensure that an effective and valid adaptive assessment will ultimately be produced for improving instruction and learning in Wyoming.

Future Possibilities for Writing Assessment

In Wyoming

Prepared for:

Select Committee on Statewide Education Accountability

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Introduction

Writing assessment and instruction hold prominent places in Wyoming schools and classrooms. Like many other states, Wyoming sees the wisdom of including important writing content standards in its definition of what is important for students to know and be able to do. By any measure, Wyoming's content standards reflect important outcomes for teachers to teach and students to learn.

The importance of writing extends past the classroom and into the statewide assessment program. The PAWS writing assessments for grades 3-8 and 11 are based squarely on the Wyoming Writing Content Standards. The goal of the writing assessment is to assess student learning relative to the Wyoming Writing Content Standards. The teaching of writing is focused on the standards, thus establishing a strong link between assessment and instruction. This assessment/instructional paradigm works well where there are valuable and comprehensive outcomes to be measured, and high quality assessment instruments to evaluate what students know and can do relative to the content standards.

Historically, the results of the writing assessment made their way into district, school, and classroom instructional programs. Teachers are using writing test results to plan instruction and elevate student proficiency consistent with Wyoming's Writing Content Standards.

The writing results also play a role in AYP reporting under the federal NCLB program. Through the 2011 test administration, writing contributed 40% to the combined reading and writing (Language Arts) score reported for each school, district, and the state as a whole.

Both Wyoming's content definitions and assessment structure are undergoing review. The outcome of this process will have an impact on teaching, learning, and assessment design and implementation.

Given that possible content and assessment changes will come under consideration by the State Board of Education, the legislature, and WDE, the Select Committee on Statewide Education Accountability, by motion on November 15, 2011, requested that WDE present its thoughts about possible futures for the writing assessment component of PAWS and present those thoughts to the Joint Select Committee on Education.

This document is WDE's response to the Select Committee motion.

The following topics are presented:

- a short history of writing assessment in Wyoming
- a brief overview of what some other states are doing in the area of writing assessment
- a basic comparison of extant Wyoming standards for writing and the CCSS
- recommendations for a writing assessment design for 2013 and beyond.

A Short History of Writing Assessment in Wyoming

Statewide direct writing assessment began in Wyoming with the Wyoming Comprehensive Assessment System (WyCAS) as early as 1999. On this assessment, students in grades 4, 8, and 11 wrote for 45 minutes to respond to one prompt, producing a "good rough draft." The student responses were scored using a 6-trait rubric, providing feedback to teachers in each of the trait areas. In 2005, when Wyoming switched to a new testing contractor and test design, WyCAS became the Proficiency Assessment for Wyoming Students (PAWS). A field test was completed, and in 2006 the PAWS writing assessment became operational in grades 3-8 and 11.

The PAWS writing assessment was untimed, and students were required to write to two different modes of writing (two prompts), expository and expressive. For each mode, the students produced a rough draft, then subsequently (usually on the next day) returned to the rough draft to produce a final draft version. The administration of the two prompts was often spaced out during the PAWS testing window to give students ample time between each prompt so that they could freshly approach the writing task. Estimates of the time needed for students to complete the current PAWS writing assessment range from 45 minutes to 2 ½ hours for each of the four days it takes to respond to the two prompts.

Through 2009 the students' responses were scored using a six-trait scoring guide; for the 2010 and 2011 administrations, the six traits were collapsed into a four-trait scoring guide. While the number of score points in the scoring guide was reduced, all of the content elements found in the six-trait guide were retained in the four-trait guide.

A Brief Overview of Writing Assessment In Other States

In considering possible future designs for the Wyoming Writing Assessment, it seems prudent to review what is being used and working well in other states across the nation. A brief study of the National Assessment of Education Progress (NAEP) state-by-state writing assessment data from 2008 was conducted, and subsequently a close look at the states that had a higher average writing scale score at grade eight than the nation as a whole were identified. States in this category include Wyoming,

Connecticut, New Hampshire, Massachusetts, Vermont, Washington, New Jersey, Rhode Island, Colorado, and Florida. WDE staff also looked at writing programs in Oregon (which did not participate in the NAEP writing assessment) and Texas, a state at the low end of the performance scale.

Of the states above, each has a testing program with a significant writing component. Three of the states, Colorado, Connecticut, and New Jersey, assessed writing in grades 3-8 and 11. Colorado administers constructed responses (short answer) and extended responses at grades 3-8 and 11. The other states generally assessed student writing at three benchmark grades – 4 or 5, 7 or 8, and 10 or 11.

The number of prompts and time of test administration varies from state to state. All of the states use one prompt at most grade levels; NJ requires two prompts at grade 3, and three prompts at grade 4 (a more extensive measure of proficiency is administered at grade 4) and two prompts at grade 11. Students in RI, VT, and NH take the New England Common Assessment Program, which requires students in grades 5-8 to write to one prompt, and students in grade 11 to write to two prompts. Of the states reviewed for this report, only Wyoming has implemented direct writing assessments at seven grade levels (3-8 and 11) with two prompts in each grade level assessed.

A common trend noted in many of the states that were reviewed is that the writing assessments are supported through district level assessment systems. Many states have either mandated curricular aims which require defined writing tasks, or have district level assessment programs supported at the state level through training in prompt and rubric development, scoring, and released items and anchor papers.

A Basic Comparison of Current Wyoming Standards for Writing and the CCSS

Interest has been shown about the relationship between current Wyoming content standards for writing and the CCSS. The following information is presented to illustrate the overall relationship between the two.

The CCSS require students to write in three different modes of writing: opinion/argumentation, informative/explanatory, and narrative. The opinion/argumentation and informative/explanatory modes directly relate to the PAWS writing expository mode, and the narrative mode in the CCSS directly relates to the expressive mode in PAWS.

The table below summarizes the writing expectations in PAWS and the CCSS:

Grade Level	Mode and Task-PAWS		CCSS – Writing Expectations		
	Mode (a): Expressive	Mode (b): Expository	Mode (a) Opinion/ Argumentation	Mode (b) Informative/ Explanatory	Mode (c) Narrative
	Task	Task	Task	Task	Task
Grade 11	Reflective Narrative	Persuasive Essay	Argumentation	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 8	Fictional Narrative	Expository Essay	Argumentation	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 7	Personal Narrative	Problem/Solution Essay	Argumentation	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 6	Fictional Narrative	Directions or Procedures	Argumentation	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 5	Personal Narrative	Report	Opinion	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 4	Personal Narrative	Formal Letter	Opinion	Examination of a topic through varied tasks	Real or Imagined Experiences
Grade 3	Personal Narrative	Letter Written to a Topic	Opinion	Examination of a topic through varied tasks	Real or Imagined Experiences

- The CCSS explicitly define increasing expectations for student learning as students progress through grade levels. Increasing expectations in each of the trait areas means prompts and scoring guides, as they are developed, will make increasing demands upon the writer as grade level increases.
- The CCSS articulates the three modes of writing across all grade levels, shifting from opinion writing in grades 3 - 5 to argumentative writing in grades 6 – 12; currently in Wyoming, opinion or persuasive writing is assessed only at grade 11. In the informative/explanatory mode found in the CCSS the examination of a topic through varied tasks provides the flexibility to address all of the tasks currently assessed in grades 3-8 on the PAWS. Narrative writing in CCSS, including writing about either real or imagined experiences in grades 3 – 12, encompasses each of the narrative type of tasks currently assessed on PAWS.
- The CCSS and the WyCPS also address literary analysis and research writing; Wyoming has determined that these two types of writing, while important, are more conducive to a classroom assessment, and therefore are not currently assessed on PAWS. It appears that the CCSS framework provides the structure for literary analysis and research writing to appear on CCSS-based tests.
- The CCSS calls for students to "write routinely over extended time frames and shorter time frames, for a range of discipline-specific tasks," thus reinforcing the need for long-term writing projects as well as on-demand and intensely focused writing experiences. Clearly, the long-term writing projects are best completed at the classroom level, while the on-demand tasks are suitable for large scale assessments.

- Both documents emphasize the writing process. Revision and editing is explicitly addressed in both; the CCSS specify using outside sources such as peer and adult editors to strengthen student writing; CCSS also calls for the use of technology in the writing process across the grades.
- Both the WyCPS and the CCSS include the six traits typically viewed as critical elements in writing instruction (i.e., idea development, organization, sentence structure, voice, purpose, and conventions). For scoring in Wyoming, the six traits have been collapsed into four. However, all six traits are still evaluated in student writing.
- CCSS documents address mechanics and conventions in the language standards portion of its standards document; the WyCPS address mechanics and conventions in the writing standards portion of its standards document. Both documents specify conventions are to be learned at specific grade levels.

Many similarities and much overlap exists between the current Wyoming Content and Performance Standards and the Common Core State Standards. Both address the modes of expository and expressive writing, including literary analysis and research; both value the writing process as essential to the development of good writers; and both emphasize common foundational traits.

Some differences that will emerge if Wyoming adopts the CCSS include a greater level of specificity regarding what is to be taught at each grade level. This "grain size" determination of specific writing skills provides a framework for teachers, students, and parents to understand the grade level expectations. Teachers will have clear guidelines for the content and skills which must be covered in each grade level to prepare students for future writing instruction. Building grade upon grade, the CCSS have been designed with the clear goal of college and career-readiness by the time a student completes the grade 11-12 standards. The current WyCPS allow for much latitude in the choice of the content and depth of writing instruction a student will receive by the end of a high school career.

Recommendations for the Future

More than anything else, what to measure in writing, and how to measure it, are driven by the content definitions that are in place at the time a testing instrument is designed and developed. For the purposes of this document, the assumption is made that Wyoming may likely adopt the CCSS, and recommendations herein rest on that assumption. The assumption is also made that any large scale writing assessment in Wyoming will be based on the Wyoming state standards, and will be both instructionally supportive and informative about student growth and achievement in writing.

Should these assumptions appear to be premature, at the conclusion of this paper a short discussion of possible futures without the CCSS in place is presented.

Given the assumption that the CCSS may likely be adopted, and given the assumption that future assessments in Wyoming may of necessity become increasingly consonant with those content standards, what should be done to reestablish a writing assessment program in Wyoming, and when should certain benchmark events take place?

The fundamental design characteristics of Wyoming's future writing assessment must be postulated. These characteristics include:

1. creating an enduring and consistent assessment design
2. building on what we already have, and
3. ensuring instructional efficacy.

Creating an Enduring and Consistent Assessment Design. As the decision processes move forward regarding the future of writing assessment in Wyoming, there must be a common vision that the design to be adopted will be one that will endure for a reasonable amount of time. Stability in the content to be measured and the instruments used to measure that content is mandatory if ultimate instructional efficacy is to be achieved.

Knowing what is to be measured, and how it is to be measured, is essential to instructional planning. Teachers must know what to teach, and how to teach it consistent with assessment designs, if they are going to be able to have the results of their good instruction reflected in increased test scores. Maintaining valued instructional targets and stabilizing the assessment designs are mandatory for ensuring that effective instruction is reflected in improved test performance.

The decision on what is to be measured (the writing content standards) must be made soon if the spring 2012 field test is to reflect the most up-to-date content requirements.

New prompt development for the spring 2012 field test cannot begin in earnest until the content standards are established. Should the approval of the revised standards occur after the drop-dead date for prompt development, the 2012 field test will, of necessity, include prompts that reflect the current, and not the newer, content standards. In effect, much of the potential of the 2012 field test to tryout prompts and scoring guides reflective of newer content standards will be lost if the standards are not approved and fully in place by the time of contract approval.[1]

Building on What We Already Have. Wyoming can be proud of the content standards that are assessed, the instructional program that reflects those standards, and the assessment design that has been used over the past assessment years; the standards are worthy instructional outcomes, WDE supports the districts in their instructional efforts, and the assessment design has provided valid and reliable results upon which to plan instruction.

The writing test design has included the administration of two writing prompts at each grade, each taking two sessions spread over two days. The sessions are untimed. The first day of testing included student production of first draft writing, and the second day included the completion a final draft writing product.

Given that multiple possibilities must be artfully balanced as plans are conceived for the near- to mid-term design of the Wyoming writing assessment, the following recommendations are made consistent with what is known now and with the possible scenario that, a) Wyoming may adopt the CCSS, and b) Wyoming will either have its own CCSS-based assessment or it may evaluate the possible use of a consortia-published instrument.

1. As part of a consensus process described later in these "recommendations," a dialog should begin regarding the grades to be assessed in a future program. Specifically, the issue of whether to retain our current grade assignments for future assessments needs to be finalized as soon as is practical. Through the 2011 administration, Wyoming assessed writing at seven grades. Are seven grades too few or too many?

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[1] The exact drop-dead date for beginning prompt development cannot be precisely estimated because the Board must yet authorize an award and authorize the initiation of contract negotiations with the next vendor. The exact amount of time the negotiations will take, and the amount of time it will take to obtain contract approval, is not certain at this time.

The choice of the number of grade levels at which to test rests on competing assumptions about maximizing instructional time for writing versus testing time, program cost, and the burden on teachers and students.

Pending a possible consensus process, a good place to begin the discussion of the number of grades to assess in Wyoming is grades 4, 6, 8, and 11 – assuming that programmatic incentives can be implemented that maintain the importance of writing in Wyoming classrooms regardless of assessed grade. The National Assessment of Educational Progress (NAEP) assesses writing at grades 4, 8, and 12. The proposed grades will allow for direct comparisons between Wyoming student writing performance and performance of students in the nation and with the states that participate in "State NAEP." While grades 4, 6, 8, and 11 are good places to begin a discussion on the number of grades to test, the ideal is to maintain our currently assessed grades, if possible.

2. Prompts and scoring guides currently in the Wyoming bank will be evaluated for consonance with the CCSS by the next contractor. The banked prompts should be modified, as necessary for establishing consonance with new content standards. Current scoring guides will need to be reevaluated should prompt design undergo any modifications, with a focused intent upon maintaining the current 4-trait scoring guide. It is possible that some of the current guides may need to be "elaborated" to ensure their consistency with any revised content.

   As much as possible, the integrity and structure of current scoring guides should be reflected in any "elaborated" versions. This is a plausible goal, given the substantial similarities between current Wyoming writing standards and the CCSS.

3. The non-administration of the 2012 writing assessment may generate a gap in score trend interpretations between the 2011 and the 2013 administrations. Should no solution for bridging this gap eventuate, there will be a need to create a new trend line beginning with the 2013 administration of the revised writing assessment. If a new trend line is begun, a new standard setting will be required. Attempts should be made, however, to evaluate if the 2013 scale can be linked back to the 2011 scale in order to maintain cut scores, longitudinal values and reflect the good work that has been done across the state since the writing assessment began.
4. New prompt development should focus on possible content gaps between the current bank and the CCSS. The new prompts should use the updated, elaborated scoring guide yet to be developed.
5. Field tests should begin to include the three types of prompts that are contained in the CCSS. It appears that since there is much similarity between the current Wyoming content standards and the CCSS, the inclusion of CCSS modes of writing in field tests would not represent a meaningful change in content direction.
6. WDE should sponsor broad-based meetings of educators and the public to receive suggestions regarding prompt and scoring guide characteristics reflective of any revised Wyoming content standards. Consensus building across the state will ensure that teachers, parents, and communities are aligned toward a common assessment objective. Ideally, this input would be received as early in the prompt development process (winter 2012, perhaps) as possible.
7. Beginning in 2013, the recommendation is that each student respond to two of the possible three types of prompts reflected in the CCSS. Two of those prompt types already exist in the current design of the Wyoming writing assessment. As prompts are "spiraled" over the next several years, students will be exposed to all three modes of writing in varying combinations of two prompts per year.

8. A minimum of two prompts per student are necessary if stable longitudinal comparisons are to be maintained.
9. The number of test sessions should be reduced to decrease testing time without compromising student capacity to fully represent writing achievement. As a general rule, each writing prompt should be administered on one day in two sessions - the first session designed to be about forty-five minutes long should be used for first draft writing, and the second session of about one hour should be used for final draft writing. Instructional support and preparation for this approach would need to be implemented so students would be well versed in a single day, two-session format for each prompt.[2]
10. A new standard setting, which requires operational test data, will likely need to take place in the early summer, 2013, so performance standards can be brought into line with the new writing content definitions and test scale, should a new scale be required. Such a standard setting would delay the return of score reports until the results of the standard setting could be incorporated into the score reporting system. The current procurement does not include the resources for a standard setting workshop.
11. Funds should be made available to conduct a pilot computer administration of the writing assessment at all assessed grades in spring, 2014. The pilot must evaluate both the technological infrastructure's capacity to provide error-free computer administration as well as the capacity of all students to create their best writing using a keyboard. Scoring using Artificial Intelligence procedures should also be evaluated during the pilot. Investigating these technological solutions is consistent with where the field appears to be going in the next few years.

Ensuring Instructional Efficacy. The current PAWS assessment system is composed of clear, high-value instructional outcomes, assessments that reflect those outcomes, and instructional support approaches that endeavor to align instruction with both the high-value outcomes and the assessment instrumentation. This alignment must be maintained as future writing assessments are designed and implemented.

Specifically, one major component of a new statewide accountability system will be the creation of a comprehensive infrastructure intended to provide multiple types of support to districts and schools that may not meet specified standards of performance. Clearly, instructional support systems will be included as a part of the broader accountability infrastructure system. Therefore, as design decisions move forward regarding the writing (and all other) assessments, exactly how the instructional/assessment programs will fit into the broader accountability system must be made explicit. This is a critical decision, since the only way growth and achievement can be improved and reflected in the accountability system, is if the assessment system is tightly interrelated and designed so that effective instruction is reflected in greater growth and achievement.

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[2] PAWS is, and should remain, an untimed assessment. An untimed test does not imply that an infinite amount of time could or should be allowed. Timing guidelines are used throughout statewide assessment programs that ensure students have more than adequate time to complete their work.

Non Adoption of the CCSS. The above recommendations provide guidance assuming the CCSS are adopted; If they are not, the following recommendations still remaln for the development of a future Statewide Assessment of Student Writing:

1. Maintain the currently assessed grades, If possible. If that is not possible, consider changing the grades assessed to 4, 6, 8, and 11, at a minimum.
2. Attempt to maintain trend between the 2011 and 2013 assessments. If this is not possible a new trend llne should begin wlth the 2013 administration. A new trend llne will require a new standard setting.
3. Renew prompt development efforts based on current content standards and scoring guides.
4. Administer two prompts per student each year, as was done for the 2011 and earlier assessments.
5. Reduce testing time for each prompt as described in bullet 9 above.
6. Conduct a pilot computer administration as described above in bullet 11.
7. Accelerate planning for explicit instructional support efforts that are specifically designed to support the instructional infrastructure likely to be designed into future statewide accountability systems.

Summary

Currently, some uncertainty exists regarding the writing standards to be assessed. There is also some uncertainty regarding Wyomlng's future involvement with the consortia developing CCSS-based assessment instruments of their own. Wyoming must consider an assessment system for the 2013, 2014, and 2015 school years that bridges the somewhat uncertain present with the somewhat uncertain future. The optimal way to accomplish this aim is to refine the assessments we now have so that they maintain the strengths of our current system and yet begin to include part of what might emerge in future revisions of content standards.

The recommended refinements presented in this document, should they be accepted, will require additional resources to implement, since the current procurement for the writing assessment is predicated on the administration of just one prompt per year, beginning with the spring 2013 administration, with no accompanying systematic instructional support efforts. Said recommendations could be incorporated into the Scope of Work during contract negotiations with the new vendor.

Tab D

MATTHEW H. MEAD
GOVERNOR

THE STATE OF WYOMING

STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

December 14, 2011

State Board of Education
2300 Capitol Avenue
Hathaway Building, 2nd Floor
Cheyenne, WY 82002

State Board of Education:

On November 23, 2011, my office received a corrected copy of a proposed amendment to the Department of Education Chapter 31 rules, a section titled, "Graduation Requirements." I understand that part of the proposed amendment is incorporation of the Common Core State Standards in the areas of Language Arts and Mathematics. As you know, Section 5(b) of Chapter 1 of the Secretary of State rules, entitled "Rules on Rules," states that "[p]roposed rules and the Statement of Reasons must be sent to the Governor's Office for initial approval a minimum of ten (10) working days prior to the start of the public comment period." The agency may only publish the rules for public comment "[u]pon approval from the Governor's Office."

On December 7, 2011, before 10 working days had elapsed and while I still had the option to disapprove the proposed rules, the Wyoming Department of Education issued a press release stating, among other things, that "[t]he Department will be accepting public comment from December 12, 2011, through January 25, 2012." After learning of this press release, I decided to take no action, and permit these rules to proceed to the public comment phase. However, neither the State Board of Education nor any other person should take my decision as approval or disapproval of the substance of these rules.

In addition, I have some concerns about the format of the rules, particularly about public transparency. Appearing as they do in Chapter 31, "Graduation Requirements," the content and performance standards are not easily accessible by a member of the public who may be searching for them. I believe that the content and performance standards should appear in their own chapter to make them readily available to the public. In addition, I believe that the State Board of Education and Department of Education should ensure that the substance of the content and performance standards, currently incorporated into the rules by reference, should be easily available to all members of the public.

Finally, my office has received some feedback from concerned legislators. Briefly stated, these concerns are that the Common Core State Standards are driven by the federal government, and that the federal government can change the standards, thereby altering the standards for

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Wyoming students. I respectfully request that the State Board of Education reserve time on the agenda of its next meeting so that a representative of my office and any concerned legislators may address the Board and express their views.

I appreciate the work you are undertaking in ensuring the future of Wyoming's educational system, and I look forward to an open dialogue about these matters.

Sincerely,

Matthew H. Mead
Governor

Wyoming Department of Education

Cindy Hill, Superintendent of Public Instruction
Hathaway Building, 2nd Floor, 2300 Capitol Avenue
Cheyenne, WY 82002-0050
Phone: 307-777-7673 Fax: 307-777-6234 Website: edu.wyoming.gov

December 22, 2011

State Board of Education
2300 Capitol Avenue
Hathaway Building, 2nd Floor
Cheyenne, Wyoming 82002

State Board of Education:

In light of the recent letter from Governor Mead about the pending revision to the Content and Performance Standards, I would like to inform the State Board of Education of certain additional facts that may help put the letter in context. My comments address the four major areas of concern that the Governor has raised: 1) the press release issued on December 7, 2011, 2) whether adoption of the Common Core standards are the best policy choice for Wyoming, 3) proper access to the substance of the proposed standards, and 4) the concern over the content and performance standards being in their own chapter.

First is the matter of the press release. According to the rulemaking process, the Governor had 10 days to review the rules, and the last day was December 9, 2011. My office issued a press release on December 7, 2011 stating that the public comment period would begin on December 12, 2011. This press release was premature and we have taken steps to prevent a repeat of this error. Nevertheless, the Governor still had the option, through December 9, 2011, to deny permission to proceed with the rule-making process.

Second is the related question of whether the Governor agrees that the Common Core should be adopted in Wyoming. His letter states that by permitting the rulemaking process to proceed, he was expressing no opinion about the substance of the rules. This, of course, is the case for any rule submitted to the Governor for his review before the public comment period. At this stage the Governor is merely consenting to allow the rule-making process to continue.

Third, the Governor expresses concern that the public have full access to the substance of the proposed Common Core standards. I would like to reassure the Board that the standards are available. In addition to being available for review at the Department of Education, the standards are posted on the Department's website, and the front page of the website includes a prominent link that allows the public to both review the standards and submit a comment online. The Notice of Intent filed with the Secretary of State's office on December 12, 2011, includes a direct link to the relevant part of the Department's website. In addition, the Department has made significant affirmative efforts to inform the people of Wyoming that these rules are being proposed, and how to submit comments. It is my opinion that the proposed standards are, and will continue to be, easily accessible to interested members of the public.

Finally, the Governor raises the issue of whether the content and performance standards should be set apart in their own chapter, not in Chapter 31, entitled "Graduation Requirements." This is a question that the Board has considered in the past, most recently during the special meeting on December 8, 2011. This question is one for the full Board's consideration, but I would like to offer more background as it relates to the period leading up to that meeting. As the Board is aware, all prior concerns on this topic were raised by the Legislative Service Office, and the Governor had expressed no opinion. On the morning of that meeting, December 8, 2011, my counsel John Masters spoke with Carol Statkus, the Governor's General Counsel. During that conversation, he told her that if the separate chapter issue was significant, certainly the rulemaking process could be restarted, which would cause a short delay in the beginning of the process, but the Board would still be able to consider the rules and the comments during its April meeting. There was no indication from Ms. Statkus that this issue was a significant concern. It is unclear whether or not the Governor is aware of that conversation.

I hope that this additional background helps the Board as it considers its response to Governor Mead's letter and any response it may wish to give. The question of reserving time in the February agenda to hear from the Governor or a representative of his office and any legislators who are concerned about the substance of the standards should be considered by the full Board.

Sincerely,

Cindy Hill
Wyoming State Superintendent

cc: The Honorable Matthew Mead, Governor