COLORADO DEPARTMENT OF EDUCATION

Colorado State Model Educator Evaluation System for Teachers

Baseline Study of the Validity of Professional Practice Ratings

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The Colorado Department of Education gratefully acknowledges the educators across the state who generously contributed their time, energy and expertise to the development of the Colorado State Model Educator Evaluation System (state model system). The depth of their knowledge and understanding of the ever-changing roles of teachers and principals in the development and education of students guided this work and kept it focused on students enrolled Colorado's public schools.

Very special thanks to the teachers, principals/assistant principals and district administrators in the pilot and integration districts who have worked as partners with members of the Educator Effectiveness staff at CDE since 2011. Without their support, this work would not have been possible.

Pilot Districts
Center School District 26-JT
Crowley County School District RE-1-J
Custer County School District C-1
Del Norte School District C-7
Eads School District RE-1
Jefferson County School District R-1
(Principal Evaluation Only)
Miami-Yoder School District 60-JT
Moffat County School District RE-1
Mountain Valley School District RE-1
Platte Canyon School District 1
Salida School District R-32
South Routt School District RE-3
St. Vrain Valley School District RE 1J
Valley School District RE-1
Wray School District RD-2

Integration Districts
Archuleta County School District 50-JT
Bayfield School District R-10-JT
Centennial School District R-1
Dolores County School District RE-2
Dolores School District RE-4A
Durango School District 9-R
Ignacio School District 11-JT
Mancos School District RE-6
Montezuma-Cortez School District RE-1
Silverton School District 1
Thompson School District R-2J

The San Juan BOCES, which acted in the interest of districts in southwest Colorado to engage in the pilot site work, contributed immeasurably to the pilot study and to the collection of data from nine districts. Their support enabled these districts to participate as a unified group and to benefit from training, consultation, and early access to information about the state model system.

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Executive Summary

Senate Bill 10-191, passed in 2010, set into motion the Colorado Department of Education's development of a state model educator evaluation system that districts may choose to use to evaluate their teachers, principals, assistant principals and specialized service professionals. An important component of the development process is determining the level of fairness, reliability and validity of the professional practice ratings resulting from the districts' use of the system.

Validity, as discussed in this report, is a collection of evidence about how teachers' professional practice ratings resulting from the use of the Colorado State Model Educator Evaluation System (state model system) compared to the intended purposes and uses of those ratings as articulated by Colorado's Senate Bill 10-191. The type of evaluation described in this report implies that a definitive yes/no answer is never the outcome, nor the intended goal, of a validity study. Rather, a validity study presents evidence supporting or refuting the use of professional practice ratings for the set of proposed uses addressed in the study. This means that validation is never complete, and validity studies should be revisited and supplemented over time as more data are collected about the professional practice ratings and as the proposed uses or the ratings shift over time.

To study the validity of the professional practice ratings for teachers, CDE engaged 26 school districts geographically spread across the state. These districts tested the system beginning with the earliest development processes in 2011-12 and agreed to continue their participation through the 2015-16 school year. As a part of their participation, these districts provided feedback in the form of interviews, focus groups and informal comments and suggestions based on their experiences in using the system to generate and use professional practice ratings for their teachers, principals, assistant principals and specialized service professionals.

In the interest of determining the degree of validity currently evident regarding professional practice ratings, this report examines seven (7) research questions designed to address various aspects of the system. The collective responses to these questions will provide valuable information about the degree of validity present in the state model system at this time. The data used to respond to these questions will help educator effectiveness staff members determine how to structure the next phases in the normal development process for the system. The following discussion presents the research questions, a brief summary of study findings associated with each, limitations of the study and recommendations for further study.

Research Question 1: What are the characteristics of the study sample and how well do those characteristics represent the state as a whole?

The study sample mirrored the state with respect to the locale of the school. The largest percentage of teachers in the sample came from rural areas followed by towns, suburbs and then cities. For other demographic characteristics, where differences were found, the proportion of the sample represented by each subgroup of the sample was similar to that found in the state as a whole. The typical sample teacher is a white female who has not earned an advanced degree and who works in a rural elementary school that is not served by Title I. The school is in an accredited district and is required to submit a performance plan rather than an improvement, priority improvement or turnaround plan to CDE. While the sample provides variation and differing contexts to explore contextual issues in the use of the professional practice ratings, the collection of districts is similar to the state population on the key characteristics examined by this study.

Research Question 2: Does the distribution of professional practice ratings reflect a range of teacher proficiency?

The distribution of professional practice ratings provided by evaluators for overall performance, standards and elements suggests that the rating scale allows for discrimination between and among varying performance levels. In all instances, the proportion of teachers rated basic and partially proficient was larger for element ratings than for standards. This is also true for the overall professional practice rating on which fewer than 3% of the teachers were rated basic or partially proficient.

The distribution of professional practice ratings indicates that evaluators use the full range of ratings, particularly at the element level. The largest proportion of ratings clusters at the proficient and accomplished levels. As the system stabilizes over time, it would seem reasonable to expect that more basic, partially proficient and exemplary ratings will be in evidence primarily due to the deepening knowledge about the rigor of professional practices and what is expected of them in order to demonstrate proficiency on each.

Research Question 3: Does the distribution of professional practice ratings allow for teacher growth to be measured?

Just over 35% of the teachers in the sample increased their overall professional practice ratings by at least one level between 2012-13 and 2013-14 while 11.21% of the sample experienced at least one rating level reduction. This statistic should be tracked by CDE because fluctuations in ratings may negatively impact perceptions of the credibility of the ratings and impact the validity argument. In addition, analyses indicate that only a single teacher of the 3,258 received an exemplary rating on all 27 elements. This would seem to indicate that even the highest performers have practices on which they can improve.

Research Question 4: Does the distribution of professional practice ratings vary based on key teacher and school characteristics?

Professional practice ratings distributions vary between subgroups of teachers. For the set of group comparisons, 33.58% of the differences between means were found to be statistically significant. Many of those differences were in the range of 0.10 points or less.

Standardized group means (Cohen's d) and their associated confidence intervals further indicated that there is no real difference between some of the non-standardized differences identified as statistically significant. Following this analysis, a total of 496 (30%) differences out of 1,650 were found to be greater than 0.10, to be statistically significant, and to not have zero in the confidence interval for the standardized means.

These results indicate that CDE has work to do in the future in terms of monitoring results annually to determine whether the differences between groups are growing smaller as the system matures and stabilizes. It they do not, then decisions must be made regarding the reasons for such differences and whether changes to system should be made. The impact of these changes should also be carefully monitored in order to isolate the causes of any changes in results.

Research Question 5: What is the relationship between standards and between the elements associated with individual standards?

Correlations between standards range from 0.36 to 0.52, and between elements and the standards with which they are associated range from 0.47 to 0.81, indicating that the elements within each standard contribute to the overall measurement of the standard, but that each element measures something unique about the standard. Similarly, professional practice ratings for standards indicate that each standard contributes to the measurement of teacher professional practice but each also contributes something unique to the measurement. These results are a good indication that the rubric is measuring a single construct, teacher professional practice, and that the measurement of all of the standards and associated elements is needed to gain a complete picture of the construct.

Research Question 6: How reliable and internally consistent are the professional practice ratings?

Cronbach's alpha scores indicate that the internal consistency, or reliability, is within the recommended range. The possible exception to this is the 0.94 alpha across all standards. As a general rule, alphas larger than 0.90 may be an indication of redundancy in the content of the measurement instrument. An exception to that rule is when there is a large number of items contributing to the alpha calculation. In this case, the 27 elements, considered to be quite large, contributed to the alpha calculation and therefore may be responsible for the high value of alpha.

Research Question 7: How similar are self-assessment ratings to evaluator professional practice ratings?

Self-assessment ratings for all standards and all associated elements differed from those of evaluators. Teachers rated themselves lower than their evaluators rated them on all standards and all elements. Correlations between standards and their associated elements on self-assessments are lower than those for evaluator ratings of professional practice. In terms of reliability, Cronbach's alpha for self-assessment across all standards is 0.87 compared to 0.94 for evaluator ratings.

Limitations of the Study

While it is important to assess validity through this first look at professional practice ratings, it is insufficient to make definitive statements regarding the validity of such ratings for the purposes outlined in S. B. 10-191. Much depends on how districts implement the system and the decisions they make based on the collections of professional practice ratings for teachers. It was not possible at this stage of the implementation process to assess the status of the following issues in order to move from a baseline examination to a more definitive validity judgment.

1. *Implementation fidelity* in general has not been examined through a comprehensive study that pinpoints persistent problems associated with fidelity of implementation such as how evaluators were trained, evaluators' understanding of the rubric and how closely the process was followed. This presents a serious limitation, as the myriad issues associated with fidelity have the potential to individually and collectively impact validity.

   Fidelity of implementation is a complex issue that requires the collection, analysis and interpretation of larger amounts of data than the pilot districts agreed to provide. Studying implementation fidelity also requires a great deal of time and other resources, which can make such studies cost prohibitive.

   For these reasons and others, at this time, CDE has chosen to use data already being collected from school districts such as the TELL survey, a variety of feedback strategies, approved trainings, the Colorado Performance Management System, ELEVATE, and studies conducted by external organizations to measure different aspects of implementation fidelity. Through these initiatives as well as others, a clearer picture of implementation fidelity is emerging. Additional work in this area is needed in order to thoroughly understand whether school districts and schools are implementing the system as described in the *User's Guide for the Colorado State Model Educator Evaluation System*.

2. Analysis of multi-year data proved problematic during this study. This is primarily due to the fact that, as a result of feedback from the field, the rubric changed significantly between the 2012-13 and 2013-14 school years, impacting the year-to-year analyses.

3. Since 2013-14 was the first year in which professional practice ratings have a bearing on decisions regarding non-probationary status, teachers reported being nervous about how they would measure up and whether their non-probationary status was "safe." Such a high level of concern can have an impact on the ratings.

Recommendations for Further Study

CDE would be well-advised to continue the study of the state model system through a number of activities that should be conducted annually as well as with more intensive periodic reviews of professional practice ratings validity. Recommendations for additional study include:

1. The analyses presented in this report should be repeated for data collected during the 2015-16 school year, the last year for which pilot site/sample data will be available under existing Memoranda of Understanding. 2015-16 is also the first year when professional practice ratings will be totally comparable for two (2) consecutive years because CDE will not change the rubric between 2014-15 and 2015-16.

2. Some of the data included in this report should be monitored each year to determine whether changes that represent validity threats have occurred. This is particularly true for group differences, which are a concern because some of them appear to be educationally important in addition to being statistically significant. CDE should continue its ongoing scrutiny of evaluation results to identify potential sources of bias.

3. Consider negotiating an extension to existing Memoranda of Understanding and obtaining additional districts willing to submit data for the purpose of continuously monitoring the system. Comparing current pilot and integration sites to districts that did not officially participate in the state model system until 2013-14 will provide valuable decision making information regarding:
    a. Necessary system changes.
    b. Impact of the system on districts and their educators.
    c. Whether additional time and training may help to moderate fluctuations in professional practice ratings.
    d. Differences in system implementation and teacher ratings between early adopting pilot and integration sites and the districts who delayed implementation until they were required to do so.

4. Conduct future analyses using statewide data to the extent possible. This will ensure that all districts using the state model system will be included in the analyses and will, hopefully, lead to system buy-in and more broad-based use of data.More importantly, using data from all participating districts will eliminate any error associated with sampling.

5. Continue to expand and enhance the discussion of implementation fidelity through an examination of additional data as well as the inclusion of additional external studies as they are completed in order to learn about how educators across the state honor established processes.

6. Conduct an examination of inter-rater agreement to determine the consistency of evaluator ratings of professional practice with those of highly trained master scorers who created a set of training videos to help evaluators monitor their accuracy in completing the rubric during teacher observations. Such an examination could be conducted using information gathered through ELEVATE, an online training program available to educators across the state.

7. As the state model system stabilizes and no changes to the rubric or evaluation processes are made for a number of consecutive years, a second in-depth validity study should be conducted.

8. Schedule additional studies periodically for the foreseeable future so validity can be checked as contexts, schools, and priorities change. It is generally agreed that the validity of a set of professional practice ratings is not static over time, so repeated looks at validity are in order as situations change.

9. When scores for measures of student learning (MSLs) are available, expand the discussion of validity to include both MSLs and professional practice ratings to determine teacher effectiveness ratings.

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Exhibits

Introduction

In 2010, the Colorado legislature passed ground-breaking legislation that changes the way Colorado's education workforce is evaluated and its ability to improve the quality of learning for all students across the state. Senate Bill 10-191 (S.B. 10-191), also commonly referred to as the great teachers and leaders act, established the goals of improving instruction, and measuring professional growth and development.

Since the passage of S.B. 10-191, Colorado's educators have been studying the bill's requirements and the ways in which they would be able to address them. In addition, the Colorado Department of Education, with the advice and guidance of the State Council for Educator Effectiveness, has established the Colorado State Model Educator Evaluation System (state model system) as a service to districts who do not want or have the capacity to create their own systems.

During the 2013-14 school year, the state model system was used by 170 of the state's 178 school districts. The state model system for teachers has been pilot tested since the 2011-12 school year in 25pilot sites geographically spread across the state. The districts applied and were accepted to participate in the early development and implementation phases of the state model system.

In establishing the 5-year pilot test, Colorado wanted to engage districts early in the development and use of the system to learn about things that may need to change prior to the validation studies. While planning and developing the state model system, the educator effectiveness unit at the Colorado Department of Education also planned monitoring and validation activities early in the development phase in order to address researcher recommendations that, *"it is critically important that systematic and rigorous evaluations be conducted of those systems once they are in place."* (Shepard, 2012).

2013-14 is the first school year in which all of Colorado's districts were required to evaluate educators using materials and processes that meet or exceed those outlined in S.B. 10-191 and the first year

Validity is a matter of degree rather than an all or none characteristic.

- Robert Linn
2008

the rubric stabilized. Members of the educator effectiveness team decided, therefore, to conduct a baseline study of system validity based on 2013-14 data.

This baseline study of the validity of overall professional practice ratings for teachers is the first step in conducting the rigorous and systematic evaluations recommended by Shepard (2012). While comprehensive in nature, this study stops short of providing a definitive response to the question, "Are the professional practice ratings valid?" As Linn stated in 2008, "Validity is a matter of degree rather than an all or none characteristic." This study is intended to provide a first look at the degree to which professional practice ratings are valid and the steps that need to be taken to increase the level of validity evidence through subsequent monitoring and validation work.

> **Note:** *Senate Bill 10-191 requires that both principals and assistant principals be evaluated based on the Principal/Assistant Principal Quality Standards. Throughout this document, "principal" is used as a shorthand phrase for "principal and assistant principal."*

Background

Colorado's Senate Bill 10-191 (S.B. 10-191) served as a catalyst for the improvement of the state's approach to evaluating the performance of principals, assistant principals, teachers and specialized service professionals (referred to as other licensed personnel in law and State Board of Education rules). Implementation of this new approach takes time and commitment from both the state and its school districts. S.B. 10-191 is designed to make the licensed educator evaluation process more comprehensive, professionally useful and focused on student achievement. S.B. 10-191 guides the state and school districts in the transformation of evaluation processes to be more rigorous and supportive and to provide continuous professional learning and improvement.

To support school districts in implementing the new evaluation requirements, the Colorado Department of Education (CDE) developed the Colorado State Model Educator Evaluation System (state model system),which meets S.B. 10-191 requirements and provides an option for consistent, fair and rigorous educator evaluations. The state model system is optional to use, but by adopting it rather than developing their own systems, districts have more time to provide meaningful and actionable feedback to their educators, which can translate into increased professional growth and better instruction for students.

CDE is currently piloting the Colorado State Model Educator Evaluation System for teachers in 25 districts *(Appendix A).* Results of this pilot test inform statewide implementation of S.B. 10-191 and provide data necessary to monitor and improve system use and complete this validation study. The intense and tightly focused pilot period is consistent with the timeline for implementation *(Exhibit 1)* set out in S.B. 10-191.

The pilot test period began in the 2011-12 school year and continues through the 2015-16 school year. By extending the pilot test period to five years, CDE is able to gauge the effects of full system implementation for at least three years. The data

> *In enacting Senate Bill 191, Senator Mike Johnston and the State of Colorado have made a bold, initial step toward a new future state for public education. The road will be long and incredibly challenging and immense perseverance will be required to sustain the journey. The rewards, however, for our students, educators, communities, state and nation will far outweigh the difficulties; the results of maintaining the status quo, or merely attempting to optimize what is already being done, are both unacceptable and unthinkable for Colorado.*
>
> **Matt Smith**
> Chairman
> State Council for
> Educator Effectiveness

collected from pilot districts during that time will be invaluable in gauging necessary system changes as well as system impacts.

Exhibit 1. *Timeline for implementation of S.B. 10-191: The Pilot Test Years*

Year One: 2011-12 Development and Beta Testing	
for Teachers and Principals	**Specialized Service Professionals**
• Develop Colorado State Model Systems for teachers and principals. • Beta-test of rubrics and tools. • Develop technical guidelines on Professional Practices and Measures of Student Learning (student growth). • Provide training and support for districts. • Populate and launch online Educator Effectiveness resources. • Develop data collection system. • Develop tools for district/BOCES implementation of system.	
Year 2: 2012-13 Pilot and Rollout	
Teachers and Principals	**Specialized Service Professionals**
• Study usability of rubrics. • Support pilot districts through resources, training, tools, etc. • Convene pilot districts to share lessons learned • Analyze pilot district data and make adjustments to materials as needed. • Train all non-pilot districts that are using the model system.	• SCEE and CDE formed a work groups for each of the nine professional groups to: • Make recommendations regarding the evaluation of specialized service professionals. • Identify how each licensed category aligns to Teacher Quality Standards. • Identify necessary changes to ensure that they provide feedback to inform practice. • Create common set of standards and elements to guided creation of professional practices for each professional group. • Develop draft rubrics for all specialized service professional groups (referred to as other licensed personnel in law and Colorado State Board of Education rules). • Provide recommendations for measures of student outcomes (the other 50 percent of the evaluation).

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Year 3: 2013-14 Full Statewide Rollout	
Teachers and Principals Hold Harmless Year*	**Specialized Service Professionals**
• Provide statewide technical assistance on rollout of teacher/principal systems. • Support all districts through resources, trainings, tools, etc. • Convene pilot districts to share lessons learned • Analyze state data and make adjustments to the system as needed. • Examine validity of professional practice ratings resulting from implementation of teacher and principal systems • Develop criteria and approve evaluation training providers.	• Pilot test evaluation system for specialized service professionals in 19 sites. • Continue to develop and pilot evaluation system for specialized service professionals.
Year 4: 2014-15 Continued Implementation	
Teachers and Principals First year for results to affect non-probationary status	**Specialized Service Professionals Hold Harmless Year**
• As necessary, finalize processes, procedures and materials for statewide implementation of teacher/principal systems • Continue support to districts with resources and training for implementation of the state model system • Ensure there are evaluator training providers throughout the state to provide training for districts and evaluators on the state model system • Analyze data and make adjustments as needed • Make recommendations for continuous improvement of the state model system • NOTE: In the spring of 2014, the Colorado legislature passed S.B. 14-165 and in doing so they provided districts the option to weight student growth as little as zero percent or up to 50% for the 2014-15 school year.	• Statewide roll out of model system for evaluating specialized service professionals. • Hold harmless year (a final rating of partially effective or ineffective will not count towards the loss of non-probationary status). • Districts have flexibility deciding how much to weight the measures of student outcomes standards in an educator's final evaluation rating.

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Year 5: 2015-16 Continued Implementation	
Teachers and Principals Second year for results to affect non-probationary status	**Specialized Service Professionals First year for results to affect non-probationary status**
• Analyze data on teacher and principal evaluations and make adjustments to rubrics, processes and materials as needed. • Make recommendations for continuous improvement of the state model system. • Continue studying and improving fidelity of system implementation across the state.	• Continued statewide implementation of specialized service professionals standards and elements, including measures of student outcome measures. • Examine validity of professional practice ratings resulting from implementation of specialized service professionals' systems.

*Hold Harmless Year: Partially effective and ineffective ratings do not count toward the loss of non-probationary status.

Colorado State Model Educator Evaluation System

The design of the Colorado State Model Educator Evaluation System is based on a number of influences that came together simultaneously: S.B. 10-191 and its associated rules, recommendations from the State Council for Educator Effectiveness, emerging research regarding this new generation of methodologies for evaluating educators and the willingness of community, business and political leaders as well as educators to collaborate to support a more rigorous, fair and valid system to evaluate Colorado's licensed educators.

Senate Bill 10-191

Senate Bill 10-191 changed the way all licensed educators (principals/assistant principals, teachers and specialized service providers) are evaluated in Colorado with the ultimate goal of continuously supporting educators' professional growth and, in turn, accelerating student learning.

Purposes of S.B. 10-191

- Emphasize that a system to evaluate the effectiveness of licensed personnel is crucial to improving the quality of education in Colorado.
- Ensure that one of the purposes of evaluation is to provide a basis for making decisions in the areas of hiring, compensation, promotion, assignment, professional development, earning and retaining non-probationary status, and nonrenewal of contract.
- Ensure that educators are evaluated in significant part based on the impact they have on the growth of their students.

Requirements of S.B. 10-191

The new evaluation requirements include opportunities for reflection, review, professional development and growth. Some of the key requirements of S.B. 10-191 include:

- Annual evaluations for all principals/assistant principals, teachers and specialized service providers.

S.B. 10-191 is designed to make the licensed educator evaluation process more comprehensive, professionally useful and focused on student achievement. S.B. 10-191 guides the state and school districts in the transformation of evaluation processes to more rigorous and supportive processes that provide for continuous professional learning and improvement. To support school districts in implementing the new evaluation requirements, the Colorado Department of Education (CDE) developed a model system as an option for districts to use. Creating a model evaluation system provides more consistent, fair and rigorous educator evaluations, saves districts valuable resources and enables them to focus on improving teaching, learning and leading. By adopting the model system, districts have more time to provide meaningful and actionable feedback to their educators, which translates into increased professional growth for educators and better instruction for students.

2014-15 User's Guide: Colorado State Model Educator Evaluation System

- Evaluation based on statewide Quality Standards defining what it means to be an effective teacher, principal/assistant principal or specialized service professional; the Quality Standards (I through V for teachers and specialized service professionals and I through VI for principals/assistant principals) account for half of an educator's annual evaluation.

- The other half of an educator's annual evaluation is based on the Quality Standard that measures student learning over time.

- No person shall be responsible for the evaluation of licensed personnel unless the person has a principal or administrator license or is a designee of a person with a principal or administrator license and has received education and training, in evaluation skills, approved by CDE that will enable him or her to make fair, professional, and credible evaluations.

- A teacher or principal whose performance is deemed to be "unsatisfactory" must be given notice of deficiencies. A remediation plan to correct the deficiencies must be developed by the district and the teacher or principal and must include professional development opportunities that are intended to help the teacher or principal to achieve an effective rating in his or her next performance evaluation.

Probationary Teachers

- Probationary teachers must receive at least two documented observations and one evaluation that result in a written evaluation report each academic year and must receive the written evaluation at least two weeks before the last class day of the school year.

Non-Probationary Teachers

- Non-probationary status (tenure) is earned after three consecutive years of demonstrated effectiveness.

- Non-probationary status is lost after two consecutive years of ineffective ratings.

- All Colorado districts and BOCES were required to implement an evaluation system that aligns with the teacher and principal Quality Standards and the State Board Rules by July 2013. (See more at: http://www.cde.state.co.us/educatoreffectiveness/overviewofsb191#sthash.l8e2qlFb.dpuf.)

Specific Requirements for Teacher Evaluation

- Standards must ensure that every teacher is evaluated using multiple, fair, transparent, timely, rigorous and valid methods.

- Fifty percent (50%) of the evaluation is based on professional practices as measured by performance on Standards I through V. The professional practices are measured by a combination of observations and other evidence documented in the form of artifacts.

- One of the standards for measuring teacher performance must require that at least 50 percent of the evaluation is determined by the academic growth of the teacher's students. Expectations for student academic growth must take into consideration diverse factors, including but not limited to special education, student mobility, and high-risk student populations.

Specific Requirements for Principal Evaluation

- Standards must ensure that every principal is evaluated using multiple, fair, transparent, timely, rigorous and valid methods.

- Fifty percent (50%) of the evaluation is based on professional practices as measured by performance on Standards I through VI.

- One of the standards for measuring principal performance must require that at least 50 percent of the evaluation is determined by the academic growth of the students enrolled in the principal's school, including:
  - Achievement and academic growth for students enrolled in the principal's school, as measured by the Colorado Growth Model; and
  - The number and percentage of licensed personnel in the principal's school who are rated as effective or highly effective; and
  - The number and percentage of licensed personnel in the principal's school who are rated as ineffective but are improving in effectiveness.

Educator Evaluation in the 2014-15 School Year

- *Districts required to:*
  - *Evaluate every teacher, principal and specialized service professional*
  - *Include both professional practices and measures of student learning/outcomes*
  - *Give all teachers, principals and specialized service professionals a final rating of either: highly effective, effective, partially effective or ineffective*

- *Districts have flexibility with how much to weight the measures of student learning/outcomes standard (weight can range from 0-50 percent)*

- *A teacher's final evaluation rating will count towards earning/loss of non-probationary status.*

Supporting Fair Implementation of S.B. 14-165

- Prohibits forced placement of teachers.

- Makes non-probationary status of teachers and specialized service professionals "portable."

- Changes non-probationary status from one that is earned based upon years of service to one that is earned based upon three consecutive years of demonstrated effectiveness.

- Provides that non-probationary status may be lost based upon consecutive years of ineffectiveness.

Senate Bill 14-165

In the 2014 legislative session, additional flexibility was passed for districts/BOCES regarding the 50 percent measures of student learning/outcomes portion of the evaluation **for the 2014-15 school year only**.

- During the 2014-15 school year, all districts/BOCES will continue to evaluate every teacher, principal and specialized service professional on all of the Quality Standards including measures of student learning/outcomes.

- Teachers, principals and specialized service professionals will receive a rating/score for each standard, including the measures of student learning/outcomes standard.

- District flexibility for the 2014-15 school year comes when determining how much weight the measures of student learning/outcomes standard counts in the educator's final evaluation rating. For example, when the professional practices (Quality Standards I-V for teachers and specialized service professionals or I-VI for principals) and measures of student learning/outcomes portions (Quality Standard VI for teachers and specialized service professionals or VII for principals) of the evaluation are combined, districts are able to weight the measures of student learning/outcomes rating anywhere between 0-50 percent.

Beginning with the 2013-14 school year, all districts were required to have evaluation systems in place that are in accordance with the adopted State Board rules and for evaluation systems, including all educators being evaluated using multiple fair, transparent, timely, rigorous and valid methods.

The passage of S.B. 10-191 ushered in a new era of support for Colorado's educators as well as new challenges for CDE and school districts charged with operationalizing the law and subsequent changes to the law. The comprehensive and broad-reaching requirements of the law, including a timeline requiring immediate action, have resulted in CDE and school districts taking quick and consistently ongoing action to understand the law's requirements, determine how to address them, and put high quality tools and materials in place to ensure the achievement of the overall goal of the law: improving student learning by having a strong educator workforce across the state.

State Council for Educator Effectiveness

Created by executive order in January of 2010, the State Council for Educator Effectiveness (the Council) was given a statutory charge to make recommendations for the next generation of teacher and principal evaluation in Colorado. S.B. 10-191 charged the State Council for Educator Effectiveness with completing four key objectives, which can be summarized as follows:

- Defining effectiveness of teachers, principals and assistant principals (principals) and specialized service professionals.
- Establishing levels of effectiveness and performance standards.
- Developing guidelines for a fair, rigorous, and transparent system to evaluate teachers and principals.
- Recommending state board rules on the evaluation, and support of teachers and principals.

One of the Council's first acts was to come to consensus on a common vision for their work: *All students in Colorado will have effective teachers in their classrooms and effective leaders for their schools. Evaluation provides teachers and principals with clear expectations for their performance and with ongoing feedback and support needed to improve performance* (State Council for Educator Effectiveness, 2011).

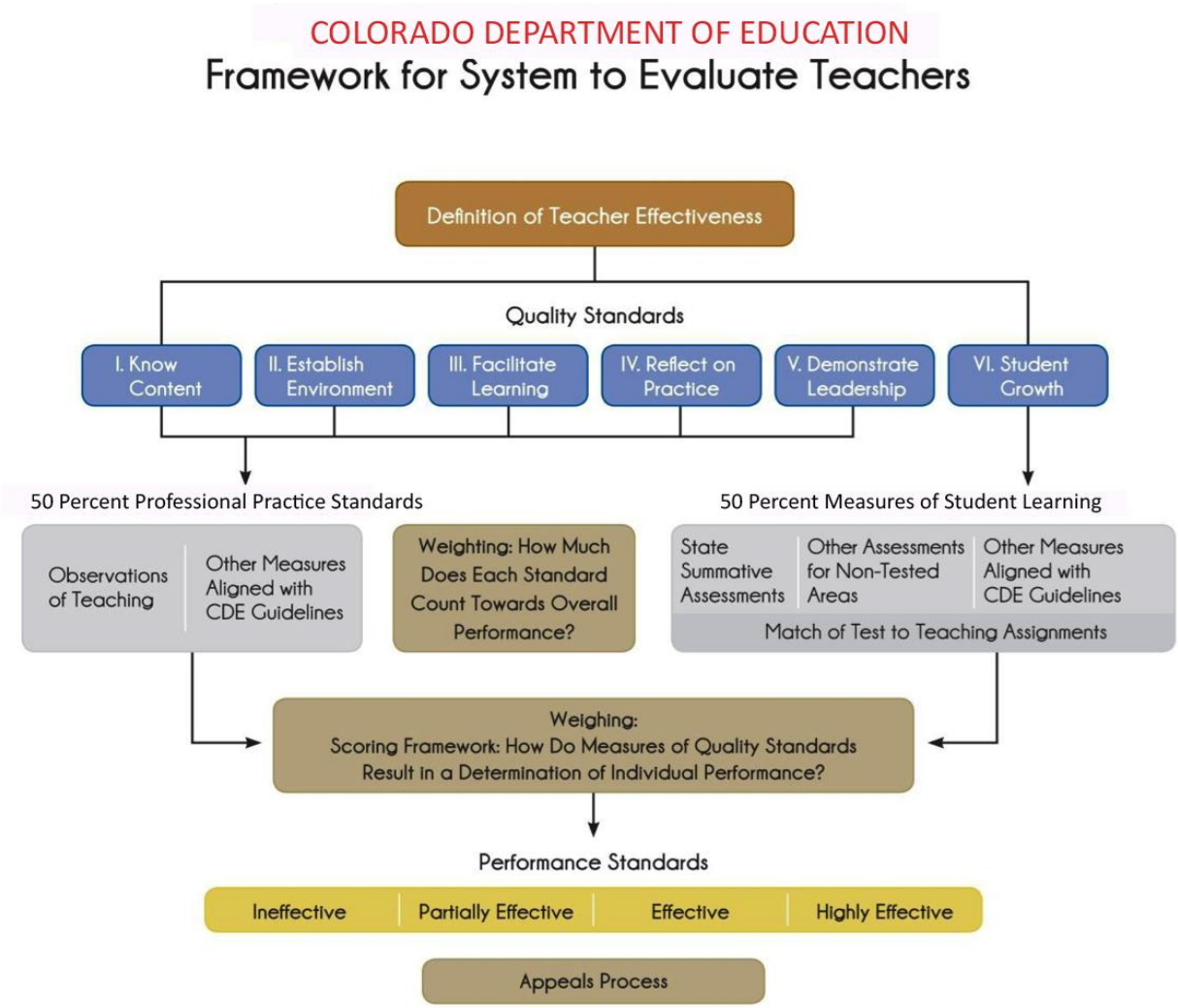
To explain their operational concept of how S.B. 10-191 should be implemented, the Council developed and widely disseminated the Framework for System to Evaluate Teachers *(Exhibit 2).* The Framework has served as the foundation the development of the state model system and serves as a visual explanation of the primary components of S.B. 10-191. Most importantly, the Framework illustrates the components of the state model system and how those components can and should work together to determine the level of effectiveness of every licensed teacher in Colorado. The definition of teacher effectiveness, Teacher Quality Standards and teacher rubric, all key system components, are in Appendix C.

The Council's teacher evaluation recommendations reflect and enhance the vision. Their attempt to provide a balanced approach to teacher evaluation is articulated in their Report and Recommendations (p. 39-40): *"To assure quality and comparability and to meet the requirements of S.B. 10-191, new teacher evaluation systems in Colorado will be anchored by a common definition of effective teaching, common teacher quality standards, and common performance standards. In addition, teacher evaluation systems must contain the components set forth in the Framework, and must use student growth to determine at least 50 percent of a teacher's evaluation. In certain complex areas, such as measuring student growth, technical quality needs to be assured through requirements established by the state. In other areas, such as choosing tools to use in measuring teacher professional practice, and determining relative weights to be assigned to performance on professional practice standards, districts are free to develop their own approaches to meet local needs and fit in a local context, within general parameters and guidelines set out by the Council."*

This balanced and flexible approach to educator evaluation has served as the foundation for CDE's efforts to develop a model system that addresses the requirements of S.B. 10-191 while providing appropriate options that enable districts to consider the context in which they work. The Council continues to advise the state's work on operationalizing the great teachers and

leaders act. Their common sense approach to addressing critical issues has enabled CDE to create and test an evaluation system that meets S.B. 10-191 requirements while concurrently considering district, school and teacher needs with respect to making clear, consistent, and meaningful change for the benefit of students. The Council understands the steep learning curve required by this challenging work and that the continuous improvement work conducted throughout the pilot test phase of the development and implementation of the state model system will continue to be important over the coming years.

Exhibit 2. *Framework for System to Evaluate Teachers*



Similar frameworks have been developed for principals and specialized service professionals. These frameworks are included in Appendix C.

Underlying Assumptions of the Colorado State Model Educator Evaluation System

The state model system is based on a set of assumptions that guided its development, testing, and implementation. Key assumptions of the system are:

A. *Teacher and Principal Quality Standards are rigorous and define appropriate research based skills and knowledge critical to delivering high quality performance and improving student learning.* The Teacher and Principal Quality Standards serve as the foundation for all aspects of the state model system. In its deliberations regarding the standards to which Colorado's teachers and principals should be held accountable, the State Council for Educator Effectiveness examined the standards from states across the United States and research related to educator effectiveness. They determined that the research-based standards developed by and for North Carolina educators were appropriate for use in Colorado and, with minor modifications, recommended their adoption. During the rulemaking and approval process, the standards were modified to incorporate issues important to the CO State Board of Education. The approved Teacher Quality Standards are included in Appendix C.

B. *The rigor of the standards, elements and professional practices is sufficient to provide opportunities for professional growth for all teachers, principals and specialized service professionals.*

C. *The annual evaluation, when conducted as a year-long process, will lead to improved educator quality and improved student outcomes.* The State Council for Educator Effectiveness eloquently stated that, *"Evaluation is a process, not an event."* Teachers' performance throughout the school year, not just on a single day at the end of the year, serves as the basis for determining the quality of professional practice. The evidence accumulated over timeboth observable and non-observable helps the evaluator make a final determination of professional practice ratings and professional growth needs.

D. *A comprehensive system of supports for teachers will help to improve the quality of the teaching workforce and therefore improve the quality and pace of student learning*.

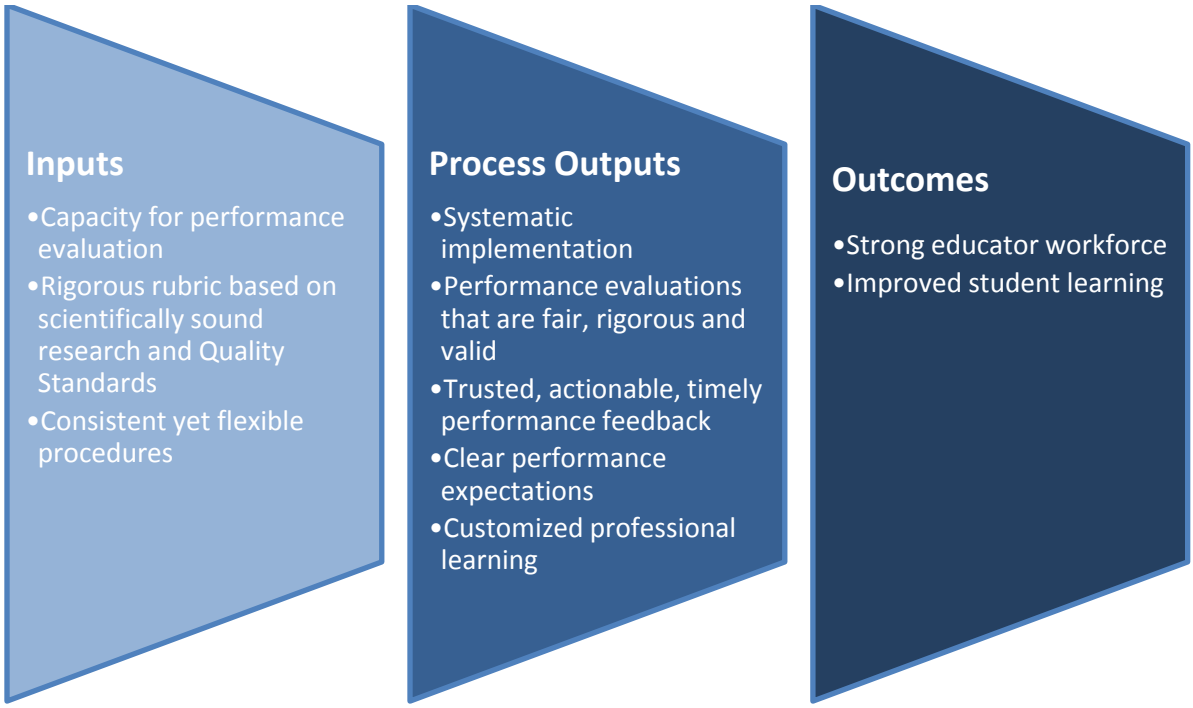
E. *Teacher proficiency on approved standards and student performance on outcome measures are equally important in making the determination of a teacher's effectiveness*.

F. *Using the observation results and mid-year reviews to provide actionable feedback will help to improve instructional strategies and thereby improve student learning.*

Theory of Action

The theory of action *(Exhibit 3)* underlying the state model system is straightforward and representative of the S. B. 10-191 requirements as well as the design of the state model system. Adapted from Clifford (2014), the theory of action recognizes the importance of system components recommended by the State Council for Educator Effectiveness as well as the need for flexibility in procedures, which are necessary in light of local control options available to all of Colorado's school districts. This theory of action will evolve as the state model system matures and as requirements and/or purposes of the state model system change.

Exhibit 3. *Theory of Action for the Colorado State Model Educator Evaluation System*



The Colorado Teacher Quality Standards

The Teacher Quality Standards *(Appendix C)* approved by the Colorado State Board of Education outline the knowledge and skills required of an effective teacher and are used as the foundation for all teacher evaluation activities in Colorado. According to S.B. 10-191, all school districts and BOCES must base their evaluations of licensed classroom teachers on the full set of Teacher Quality Standards and associated elements, or shall adopt their own locally developed standards that meet or exceed the Teacher Quality Standards and elements. School districts and BOCES that adopt their own locally developed standards shall crosswalk those standards to the Teacher Quality Standards and elements, so that the school district or BOCES is able to report the data required. The Teacher Quality Standards are foundational to providing every student with what they deserve—excellent teachers who are consistently supported in their efforts to improve their practice and influence student learning in new and powerful ways

Rubric for Evaluating Colorado Teachers

Based on the Teacher Quality Standards approved by the State Board of Education, the Rubric for Evaluating Colorado Teachers is the centerpiece of the state model system. As stated earlier, the Quality Standards are organized around six performance standards, each with a set of associated elements that serve to further explain performance expectations and expand the description of the Quality Standard. The five Quality Standards are:

I. Teachers demonstrate mastery of and pedagogical expertise in the content they teach.

II. Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.
III. Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.
IV. Teachers reflect on their practice.
V. Teachers demonstrate leadership.
VI. Teachers take responsibility for student academic growth.

These standards and their associated elements serve as the foundation and organizing framework for the state model system. It is important to note that Standard VI is not included in the rubric. Rather, Standard VI serves as the foundation for measures of student learning, commonly referred to as "the other 50%" of the effectiveness rating. This report examines evidence of validity for the professional practice ratings associated with Standards I through V.

Professional practices were derived from current research regarding the topic of the element, results of beta and pilot tests, discussions with expert panels of school and district administrators and teachers, and focus groups and interviews with key stakeholders throughout the state. All of the information obtained from these data gathering activities as well as input from CDE staff members were used to revise the rubric throughout the first three school years of the pilot test: 2011-2014. The result of such activities is that the rubric and the accompanying processes guiding its use are not only research based, but relevant from field-based educators' perspectives and a content perspective through the use of feedback from educators at every level of the system across the state. These educators have indicated that the rubric contains the appropriate professional practices needed to measure principal performance toward achieving the Quality Standards. To understand the professional practice ratings under consideration in this study, it is important to understand the features of the rubric used to determine those ratings.

Gone are the days when a principal sits in on a teacher's class every couple years, armed with a checklist of instructional requirements that rarely were associated with high quality instructional practices. In contrast, teachers are now being observed every year -- and for many, multiple times a year -- by trained evaluators using a researched-based rubric that more accurately judges instructional effectiveness. More importantly, the new classroom observations provide more useful feedback to teachers.

- Center for Public Education

Features of the Rubric for Evaluating Colorado Principals

A critical feature of the rubric is that the professional practices on which principal performance is based are

nested within the elements, which are nested within the standards. This means that the combination of professional practices related to an element determine the rating level for that element. Similarly, the combination of professional practice ratings for elements associated with a standard determine the rating for that standard, and the combination of all standard ratings for professional practice determine the final effectiveness rating. The result of this design is that it is possible to obtain ratings for individual elements as well as for individual standards and an overall professional practice rating. The overall professional practice ratings serve as the 50% of the effectiveness rating based on Quality Standards I through V. In addition, the element and standard ratings of professional practice and, in some cases, the determination of performance on individual professional practices may be used to guide professional growth and development plans for teachers, schools and districts. It also provides administrators the capability of pinpointing specific practices on which groups of teachers need professional development. This approach to collecting data once and using it for multiple purposes saves the state and school districts valuable time and resources.

In addition to using the professional practice ratings for both formative and summative purposes as well as to design professional growth activities, the rubric has a number of design features that are key to its use.

- *Both observable and non-observable items*. "Observation rubrics" include practices that are observable during a typical class period but they do not address the important teacher responsibilities that cannot be measured during a classroom observation. To measure performance against the Teacher Quality Standards it is necessary to determine teachers' performance on non-observable as well as observable items. By including both on the same rubric, CDE sends a clear message that both are important and both contribute to teacher growth and student learning. Feedback from users indicates that the items marked observable are truly observable during routine classroom observations and that even some of the non-observables are observable during other activities, such as parent conference and faculty meetings or trainings.

- *Indicators that students are learning as a result of the teacher's practices.* The ultimate goal of the state model system is to improve the quality of learning for all of Colorado's students and the ultimate measure of professional practice is whether teachers' actions adequately set the stage for learning to take place. CDE therefore decided that the accomplished and exemplary ratings for Standards I, II and III and their associated elements should be reserved for indicators that students are learning the skills and knowledge required by the state. The underlying assumption of this approach is that if the teachers do what is expected of them, the students will learn what is expected of them.

- *Cumulative in nature*. This characteristic of Colorado's rubric sets it apart from others, which typically use increasingly difficult descriptors of a single aspect of educator performance to determine rating levels. Colorado's rubric requires teachers to demonstrate high quality performance on each of the professional practices from Basic to Exemplary. The professional practices become increasingly difficult as the rating levels change from Basic to Exemplary. In addition, for Standards I, II, and III, professional practices at the Basic, Partially Proficient and Proficient levels are based

primarily on observable teacher behaviors. For those same standards, Accomplished and Exemplary professional practices are based primarily on observable behaviors that students should exhibit as a result of the teacher practices articulated in the lower levels. In other words, to be rated Accomplished or Exemplary, teachers' must be able to demonstrate that their practice has an impact on the learning of students for whom they are responsible.
Teachers are rated at the lowest level for which they have demonstrated high quality performance on all professional practices. In other words, the rigor of the process requires that teachers demonstrate high quality performance on each practice as they move from Basic to Exemplary across the row for each element. Should they not demonstrate meet such performance standards on any professional practice, they remain at that rating level until their performance improves.

Colorado's rubric exemplifies the belief that determining the depth and breadth of teachers' knowledge and skills and their ability to use those skills requires the measurement of the many facets of each of the Teacher Quality Standards and associated elements, from the most basic skill to those practices that characterize truly masterful teachers. CDE's approach to doing this is to identify the practices that are most important to demonstrate quality performance for each element and to place those practices along a scale ranging from basic to exemplary. Evaluators must determine whether the teachers' performance on each practice is of high quality. The collection of high quality practices determines the teacher's score on the element. By providing a more comprehensive set of practices on which teachers are evaluated, this system also provides greater opportunity for deep, rich and comprehensive performance discussions.

- *Evidence used as it is gathered throughout the year for providing formative feedback.* Pre- and post-observation conferences provide a forum for teachers to share their plans with evaluators and for evaluators to share their impressions of performance. By conducting these conferences immediately before and soon after the observations, it is possible to provide feedback that is relevant and can be used through the rest of the year to guide improvement in practice.

- *Results in a range of professional practice ratings from foundational practices expected of every teacher (Basic) to those one would expect of master teachers (Exemplary).* The rating scale is anchored at proficient with two levels (basic and partially proficient) below and two levels (accomplished and exemplary) above. Definitions and focus of rating levels are included in Exhibit 4.

- *Includes many opportunities to determine the level of involvement of parents, other significant adults in the lives of students and members of the school community.* Throughout the rubric, teachers are judged on their level of collaboration with other adults who have a role in educating their students. In addition to the built-in measure of involvement and collaboration, teachers are encouraged to gather and use feedback from their stakeholder groups.

- *Uses multiple measures.* Because the non-observable items may be measured through artifacts and because teachers and their evaluators may use any information they deem appropriate to demonstrate the accuracy of their ratings, multiple measures are a built-in feature of the professional practices measures. Artifacts are an important component of the state model system because they provide teachers and their evaluators opportunities to contextualize the ratings and make evaluative decisions based on the unique circumstances surrounding the teacher's work.

- *Emphasizes teachers' professional responsibilities as well as their teaching responsibilities.* Many of the professional practices, particularly those associated with Standards IV and V, reflection and leadership respectively, are measures of teacher responsibilities. These are at least in part the result of existing research on distributive and teacher leadership which demonstrates that schools tend to perform better when teachers are engaged in leadership activities and when the administrators share (distribute) their leadership responsibilities with teachers.

Exhibit 4. Definition and Focus of Rubric Rating Levels

Rating Level	Definition	Focus
Basic	Educator's performance on professional practices is significantly below the state quality standard.	The focus of the Basic rating is on the foundational elements of teaching. The educator rated as Basic is typically performing at a foundational level and does not meet state Quality Standards. Every educator is expected to perform Basic professional practices in their day-to-day work.
Partially Proficient	Educator's performance on professional practices is below the state quality standard.	The focus of Partially Proficient and Proficient levels is what educators do on a day-to-day basis to achieve state performance standards and assure that students are achieving at expected levels.
Proficient	Educator's performance on professional practices meets state quality standard.	
Accomplished	Educator's performance on professional practices exceeds state quality standard.	The focus of Accomplished and Exemplary ratings shifts to the outcomes of the educator's practices, including expectations for staff, students, parents and community members, as a result of practices exhibited under Basic, Partially Proficient and Proficient rating levels.
Exemplary	Educator's performance on professional practices significantly exceeds state quality standard.	

Determining Professional Practice Ratings

Determining final professional practice ratings is a multi-step process that lends itself to using results from each step for formative, just-in-time, actionable feedback. Throughout the school year, the evaluator and teacher discuss past performance, performance expectations, and the status of the teacher's progress toward meeting expectations. These discussions may result in adjustments to expectations and/or the teacher's professional growth plan based on the context and the teachers progress.

1. *Professional Practice*. The first step in determining professional practice ratings is to determine the practices on which the teacher has demonstrated proficiency. If the evaluator observes or has other evidence that the teacher has mastered the practice, the practice is marked. There are no options for partial achievement of individual practices, only an indication that the practice has been achieved with an acceptable level of quality. Once the professional practices have been marked, all other ratings determinations are aggregations of information based on which practices are marked.

2. *Element Ratings* are determined by aggregating the professional practice ratings for each element. Because of the cumulative nature of the rubric, the teacher's rating for an individual element is the lowest score for which all practices are marked and all practices below it are marked.

3. *Standard Ratings* are based on the ratings for individual elements and the number of elements associated with the standard. As a service to districts, CDE developed online systems to automate the calculation of element, standard and overall professional practice ratings. The Colorado Performance Management System and an in-house developed system based on Excel have proven to be great timesavers for both CDE and districts as their use generates accurate professional practice ratings that can be analyzed without worrying about systematic or data entry errors.

4. *Overall Professional Practice Ratings* are a function of ratings on standards and are again based on a mathematical formula outlined in the user's guide. These ratings become the final professional practice ratings which make up the 50% of the teachers effectiveness ratings to be combined with measures of students learning as the other 50%.

These ratings are the result of evaluators and the principals they are evaluating implementing the performance evaluation process specified in the state model system.

About this Study

This Baseline Study of the Validity of Professional Practice Ratings for Teachers is the first look at validity issues in the state model system for teachers (a similar report for principals is forthcoming). CDE plans to use these results as baseline information to guide further decisions about system modifications. It is anticipated that a second study will be conducted in the near future and that study will build upon this one in terms of the amount and type of data available as well as the types of comparisons that are made possible. CDE plans to keep the system as stable as possible until the second study is conducted in order to have comparable year-to-year data on which to base decisions.

Study Team Members

Members of the Educator Effectiveness Unit at CDE determined that it would be possible for them to complete an accurate and objective study of the validity of teacher evaluation professional practice ratings if the Executive Director for Educator Effectiveness, the report author and the researchers could establish and agree to honor a set of roles and responsibilities that would ensure the study's transparency, objectivity, and credibility. To that end, the four primary contributors agreed to the following set of roles and responsibilities:

Katy Anthes, Executive Director of the Educator Effectiveness Unit

- Serve as the point person for all discussions of the validity study and its accompanying report.
- Ensure that all aspects of the validity work honor the intent of the roles and responsibilities agreement by maintaining the independence of the researchers and report writer.
- Approve the research and analysis plan.
- Encourage communication between and among all involved Educator Effectiveness staff members by establishing regular meetings at which issues would be discussed.

Britt Wilkenfeld, Assistant Director of Research

- Provide advice and guidance regarding validity study plan and its implementation.
- Develop and maintain databases containing all educator evaluation data.
- Review and confirm accuracy of data analyses.

Philip Perrin, Research Analyst

- Develop and maintain databases containing all educator evaluation data.
- Conduct the data analyses.
- Provide results of analyses to Williams, Wilkenfeld and Anthes for review.
- Maintain confidentiality of all data other than reports required by the approved research and analysis plan.

Jean Williams, Evaluation Design Specialist

- Write the baseline validity study.
- Write the research and analysis plan.
- Receive data analysis reports from Perrin.
- Review and confirm accuracy of data analyses.

- Communicate problems and questions regarding analyses and request corrections if necessary.
- Keep all team members informed of progress on the report.

Note: While data use in the completion of this study were available on the CDE server, Williams did not access the raw data or any interim analyses at any time before, during or after the study. All data included in the report were analyzed by Wilkenfeld and Perrin. Anthes oversaw the process to ensure the integrity and objectivity of the study.

CDE also engaged the services of an external research team to provide advice about study design and review the report for accuracy, consistency, and overall quality. Following the research team's independent review of the final draft of this report, the team made recommendations for improvement based on answers to the following questions:

- *Analyses* – Were the most appropriate analytic techniques used given the data available?
- *Findings* – Are narrative descriptions of issues related to data supported by the data and are the findings reported accurately and appropriately based on analyses presented?
- *Limitations* – Are all study limitations reported and described as accurately, thoroughly, openly and transparently as possible?
- *Recommendations for further study* - Are all recommendations reasonable given the status of the system, appropriate for responding to questions of validity, and comprehensive enough that when the studies are carried out, CDE will have higher quality information to guide decisions related to necessary system adjustments.

CDE is committed to ensuring that openness and transparency are the cornerstone of the Educator Effectiveness Unit's work. To that end, the datasets used in the completion of this report will be made available to researchers interested in replicating, expanding, or enhancing analyses if they are approved through CDE's internal review board (IRB) process and are granted access to the data.

Data Collection and Analysis

To complete the analyses included in this report, it was necessary to draw data from a variety of databases housed at CDE and to combine them with evaluation data provided by pilot sites. Data were submitted to CDE via Excel spreadsheets, Bloomboard online system and the Colorado Performance Management System. Once received, research staff members (Wilkenfeld and Perrin) cleaned and organized the data to make the analyses more accurate and easy to conduct.

Analyses were incorporated into a working draft of this report, which was then sent to stakeholders within CDE and to an external research organization to verify not only the findings but also the conclusions and recommendations resulting from the findings. Where necessary, the draft report was revised to address reviewer concerns and help ensure the accuracy and utility of the report.

Presentation of Analyses

Every attempt has been made throughout this report to objectively and consistently present findings in such a way that the reader is able to draw conclusions from the presentation of actual data as well as from the variety of statistical procedures used to complete analyses. To answer each question, data tables and, where appropriate, charts and/or graphs are used to present the data. Background information regarding the research question and the data and type of analyses used to answer the question are always present first, followed by the actual data and discussions of findings as follows:

1. Actual differences are discussed first. It is important to consider the practical/educational importance of the findings. (King, Schmmitz, Seaman, Carver, 1978). The actual results are discussed and interpreted with respect to the research question and attention should be paid to the size of the effect, whether it is statistically significant or not. This is particularly important because although tests of statistical significance are an important consideration for determining validity of the scores resulting from the use the state model system, they do not provide information about the practical importance of the results or the likelihood of obtaining similar results in the future (Kruger, 2001).

2. A p-value of less than was .05 used as the standard for determining statistical significance for this study. Tests of statistical significance provide an indication of the probability of obtaining results of this size in the general population if there is no difference between the sample and the general population (Carver, 1978). In other words, $p<.05$ resulting from a statistical significance test indicates that there is less than a 5% likelihood of getting similar results if there is no difference between the two groups being compared.

3. A final consideration in interpreting the group differences results is the size of the sample. *"Statistical significance ordinarily depends upon how many subjects are used in the research. The more subjects the researcher uses, the more likely the researcher will be to get statistically significant results."* (Carver, 1978). The sample sizes for these comparisons are relatively large (StatSoft, 2015) and therefore may result in statistically significant findings due to sample size alone.

All of the data presented in response to each research question should be considered as a collection of evidence. Each type of evidence describes a different facet of the data, and the facets collectively provide the best response given the information available at this time.

Research Questions

The remainder of this report deals with a set of research questions designed to collectively address whether the professional practice ratings resulting from the use of the Colorado State Model Educator Evaluation System (state model system) are valid for the purposes for which they are intended. Each question addresses a unique facet of this issue. The questions to be addressed are:

1. **What are the characteristics of the study sample and how well do those characteristics represent the state as a whole?** The answer to this question is particularly important because the study sample was not randomly selected and it is therefore possible that the characteristics of the sample would differ in important ways from the populations to which the findings should be generalizable. It is important to understand that the professional practice ratings are not just a function of the rubric but also of the context in which the rubric is used and the people using it.

2. **Does the distribution of professional practice ratings reflect a range of teacher proficiency?** Central to the purpose of S.B. 10-191 is the idea that it is possible to discriminate between different levels of proficiency based on the Teacher Quality Standards as measured by the Rubric for Evaluating Colorado Teachers. To do this, all five of the rating levels should be used and it should be possible to discriminate between and among the proficiencies described for each level. If all levels are not used, system developers should consider making revisions to the system.

3. **Does the distribution of professional practice ratings allow teacher growth to be measured?** S.B. 10-191 articulates that improvements in the quality of the education workforce is one of the two outcomes expected to result from fair, rigorous and valid evaluations. The other outcome is improvements in student learning. This question speaks to the intent of the law regarding having a rigorous system that is able to measure teacher proficiency along a continuum of practices ranging from the most basic, or foundational, skills that every teacher should be able to demonstrate to demonstrating that students are able to apply the lessons they have learned as a result of the excellent teaching they have experienced.

4. **Does the distribution of professional practice ratings vary based on key teacher and school characteristics?** The extent to which differences in professional practice ratings between and among groups based on variables unrelated to performance may be an indication of fairness and/or bias within the system. Such bias may stem from any of a number of sources, including variations in training, level of reliability and/or inter-rater agreement among evaluators, systemic issues associated with equity of resources, rubric content, the evaluation process itself and many other issues.

5. **What is the relationship between standards and between the elements associated with individual standards?** The relationships between and among ratings provides an indication of whether the dimensions (professional practices, elements, standards) of the rubric measure various components of a single construct: the quality of teacher professional practice related to the Teacher Quality Standards. This question also deals with whether there is overlap between elements and/or standards in terms of what they measure.

Components of a well-designed rubric will have some overlap with each other, but each will also measure something unique about the construct.

6. **How reliable and internally consistent are the professional practice ratings?** Highly related to the prior question, reliability takes the standard and element relationship issue one step further by determining the reliability of professional practice ratings. This step is critical to a determination of validity because the ratings cannot be valid if they are not reliable.

7. **How similar are self-assessment ratings to evaluator ratings of professional practice?** All educators who are evaluated using the state model system must complete a self-assessment annually within the first few weeks of school. The results of the self-assessments, when compared to evaluator ratings, provide information about teacher growth within a single year as well as highlight potential problems in a teacher's or evaluator's perception of the level of performance. Comparisons between teacher and evaluator ratings may also point out potential concerns about the fairness of the professional practice ratings.

Each question is addressed individually, with a summary of the findings following the discussion of the final question.

Validity

"*Validity refers to the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests. Validity is, therefore, the most fundamental consideration in developing and evaluating tests"* (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 1999 and 2014, p. 9). Validity, however, is not a property of the test itself, rather it is an evaluation about how test scores are interpreted compared to the intended purposes and uses of those scores. This type of evaluation implies that a definitive yes/no answer is never the outcome (nor the intended goal) of a validity study. Rather, a validity study presents evidence supporting (or refuting) a test use for the set of proposed uses addressed in the study. This means that test validation is never complete, and validity studies should be revisited and supplemented over time as more data are collected about the test scores and as the proposed uses shift over time.

It should be noted that the terms test and scores are used throughout this report when referring to recognized practices for validation. This report follows the rigorous process established for test validation. Readers should be aware that the term "test" in this report refers to the use of the Rubric for Evaluating Colorado Teachers and that "score" refers to the professional practice rating resulting from use of the rubric. For the state model system, "validity" is used to describe the evidence that has been accumulated related to the use of the professional practice ratings for the purposes established by S.B. 10-191.

The Colorado Department of Education's Educator Effectiveness Unit collected and analyzed data on the teachers involved in this study. Participating teachers work in pilot and integration districts during the 2013-14 school year *(Exhibit 5)*:

1. Whose superintendents volunteered to serve as pilot sites during the development and initial roll-out of the state model system, or
2. Which were selected to be integration districts by the Colorado Education Initiative (CEI; formerly the Colorado Legacy Foundation). These districts received additional resources in the form of CEI-sponsored activities and

> *Validity refers to the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests. Validity is, therefore, the most fundamental consideration in developing tests and evaluating tests. The process of validation involves accumulating relevant evidence to provide a sound scientific basis for the proposed score interpretations.*
>
> **Standards for Educational and Psychological Testing**, 2014

monetary funding to support a variety of activities.

The teacher study sample was drawn from 14 pilot and 11 integration districts spread across Colorado. Superintendents in the sample districts volunteered to have the educators employed by the district participate in the development, testing, review, and revision of the state model system. They made a 5-year commitment to work with the CDE by:

- Participating in state-sponsored trainings.
- Evaluating district educators using each annual iteration of system components.
- Providing feedback on the quality of documents, including the rubric, and how well they work within their system.
- Submitting performance evaluation data to CDE on all district educators to enable state staff members to monitor how well the system works in order to make revisions. Data submitted includes professional practices marked as being in evidence; element, standard and overall performance ratings; and self-assessment ratings. Additional CDE data were also included (e.g., information on teacher, school and district characteristics). The data these districts submitted serve as the basis for this study.

***Exhibit 5**. 2013-14 Pilot and Integration Districts for the Teacher System*

Pilot Districts	Integration Districts
Center School District 26-JT	Archuleta County School District 50-JT
Crowley County School District RE-1-J	Bayfield School District R-10-JT
Custer County School District C-1	Centennial School District R-1
Del Norte School District C-7	Dolores County School District RE-2
Eads School District RE-1	Dolores School District RE-4A
Miami-Yoder School District 60-JT	Durango School District 9-R
Moffat County School District RE-1	Ignacio School District 11-JT
Mountain Valley School District RE-1	Mancos School District RE-6
Platte Canyon School District 1	Montezuma-Cortez School District RE-1
Salida School District R-32	Silverton School District 1
South Routt School District RE-3	Thompson School District R-2J
St. Vrain Valley School District RE 1J	
Valley School District RE-1	
Wray School District RD-2	

While 25 districts agreed to serve as pilot sites for the teacher evaluation process in the 2013-14 school year, only 23 of those districts submitted evaluation data. Therefore, analyses presented in this report are based on the 23 districts for which data were available.

What are the characteristics of the study sample and how well do those characteristics represent the state as a whole?

The extent to which professional practice ratings are generalizable across population groups, settings, or contexts is a persistent and perennial problem. This is the main reason that validity is an evolving property and validation a continuing process (Messick, 1995). Validity is addressed by examining the extent to which the context in which the study data were collected conforms to the context in which the processes will be used. This section examines the extent to which data for the study sample (the teachers for whom final professional practice ratings were submitted for 2013-14) and the school or district (the setting or context) characteristics represent the population which will ultimately use the materials and processes under consideration. This section provides a detailed description of the teachers, schools and districts involved in this study and compares the sample to the state as a whole. Key demographic characteristics such as race/ethnicity, gender, and education level of the participants are described. Likewise, district and school characteristics such as Title I eligibility and turnaround status are discussed.

Validity is not a property of the test or assessment as such, but rather of the meaning of the test scores. These scores are a function not only of the items or stimulus conditions [the rubric], but also of the persons responding as well as the context of the assessment. (p. 6)

Messick (1994)

An examination of differences between and among groups can be a complex and arduous process. To simplify the process no tests of statistical significance are reported to answer this research question. Instead, discussions in this section emphasize:

1. The size of the differences between average ratings for individual groups being compared. Such an examination helps the reader determine the practical, or educational, importance of such differences.

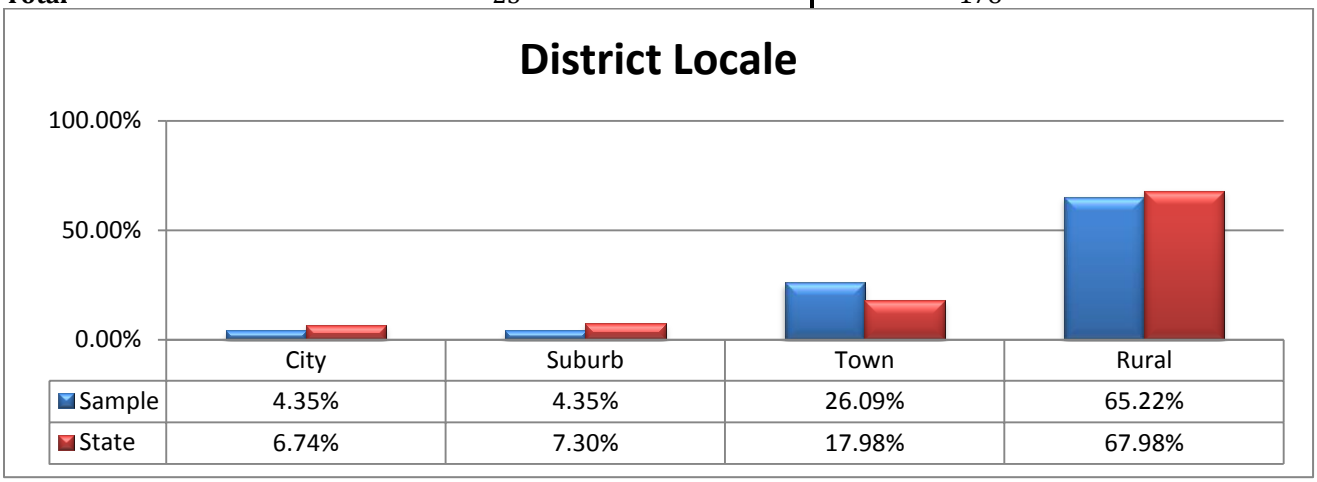
2. The rank order of the individual groups when compared to each other. For example, a look at Exhibit 6 illustrates that the number of districts for the sample and the state are in the same order, from smallest to largest, indicating the two groups are similar with respect to the proportion of districts in each group.

The teacher professional practice ratings under consideration are a function of the context, the schools and districts involved in this study, in which the ratings are generated as well as the teachers and their evaluators. To clearly understand the nature of study findings, it is necessary to understand the people and contexts involved in generating the ratings. It should be noted that all data presented in this section are based on the 2013-14 school year.

District Locale. A summary of the sample and state populations by the locale in which the districts are located is presented in Exhibit 6. The sample of 23 districts that submitted teacher evaluation data is quite similar to the state as a whole based on this analysis. The largest difference is between towns. The proportion of towns in the sample is 8.11% higher than that for the state as a whole.

Exhibit 6. *Districts by Locale Codes*

Locale	Sample		State	
	N	%	N	%
City	1	4.35	12	6.74
Suburb	1	4.35	13	7.30
Town	6	26.09	32	17.98
Rural	15	65.22	121	67.98
Total	23		178	



Source: https://nces.ed.gov/ccd/districtsearch/

The ***District Performance Framework*** and the ***School Performance Framework*** serve to:

1. Hold districts and schools accountable for performance on the same, single set of indicators and measures; and
2. Inform a differentiated approach to state support based on performance and need, by specifically identifying the lowest performing schools and districts[1].

[1] Retrieved from http://www.cde.state.co.us/accountability/performanceframeworks.

These aims are critical to enabling the state to better support district evaluation, planning, decision-making, and implementation in improving schools. To support the various state, district and school uses of the performance frameworks, both district and school performance frameworks are provided to districts annually at the start of the school year.

The performance frameworks measure attainment on four key performance indicators:

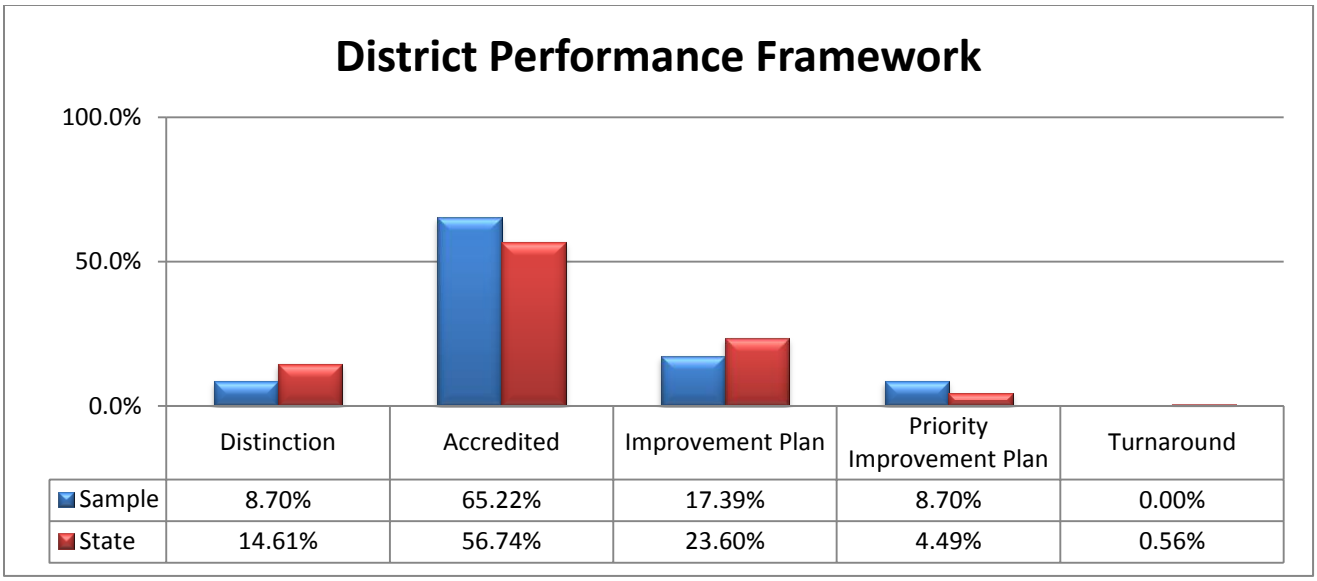
- academic achievement,
- academic longitudinal growth,
- academic gaps and
- postsecondary and workforce readiness.

State-identified measures and metrics for each of these performance indicators are combined to arrive at an overall evaluation of a school's or a district's performance. For districts, the overall evaluation leads to their accreditation. For schools, the overall evaluation leads to the type of plan schools will implement.

Information regarding District and School Performance Frameworks is provided here as a way of comparing the sample to the state on the level of performance of the schools and districts in which participating teachers work. The sample and state *(Exhibit 7)* differ by at least 4.21% on all district performance categories except turnaround districts. There were no turnaround districts in the sample and only a single turnaround district in the state. The largest difference between the sample and the state is for accredited districts for which an 8.48% discrepancy exists between the sample and the state as a whole, with the state having a smaller proportion of accredited districts than the sample.

Exhibit 7. *Districts by Improvement Status*

District Performance Framework	Sample		State	
		%	N	%
Distinction		8.70	26	14.61
Accredited	5	65.22	101	56.74
Improvement		17.39	42	23.60
Priority Improvement		8.70	8	4.49
Turnaround		0.00	1	0.56
Total	23		178	

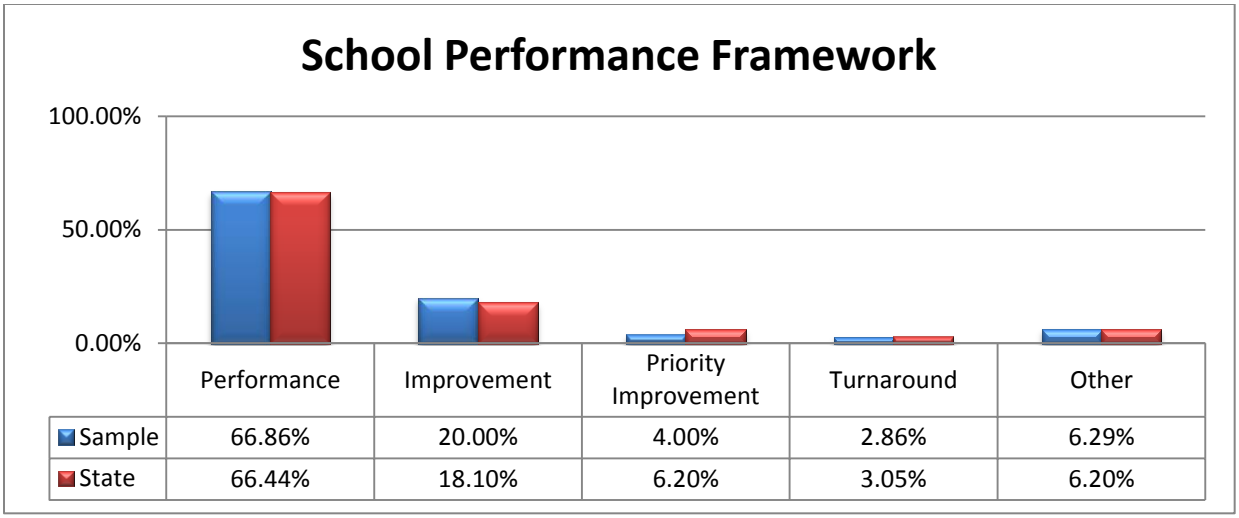


Source: https://www.cde.state.co.us/accountability/cde2014districtaccreditationratings20102014

School Performance Framework data *(Exhibit 8)* reveal that the sample and state are similar with respect to improvement status. The largest differences between the sample and the state is for schools required to submit an improvement plan (1.90%) and for schools required to submit a priority improvement plan (1.80%). Differences between the other categories is less than 1.0%

Exhibit 8. *Schools by Improvement Status*

School Performance Framework	Sample		State	
	N	%	N	%
Performance	117	66.86	1,178	66.44
Improvement	35	20.00	321	18.10
Priority Improvement	7	4.00	110	6.20
Turnaround	5	2.86	54	3.05
Other*	11	6.29	110	6.20
Total	175		1,773	



	Performance	Improvement	Priority Improvement	Turnaround	Other
Sample	66.86%	20.00%	4.00%	2.86%	6.29%
State	66.44%	18.10%	6.20%	3.05%	6.20%

*(Alternative Education Campus, School Closed)
Source: https://www.cde.state.co.us/accountability/performanceframeworkresults

Title I Status. Title I, Part A, of the Elementary and Secondary Education Act (ESEA) provides resources to help ensure that all children have the opportunity to receive a quality education, resulting in their attainment of high academic standards[2]. Title I targets resources to districts and schools whose needs are the greatest. The United States Department of Education (USDE) allocates funds based on poverty rates.

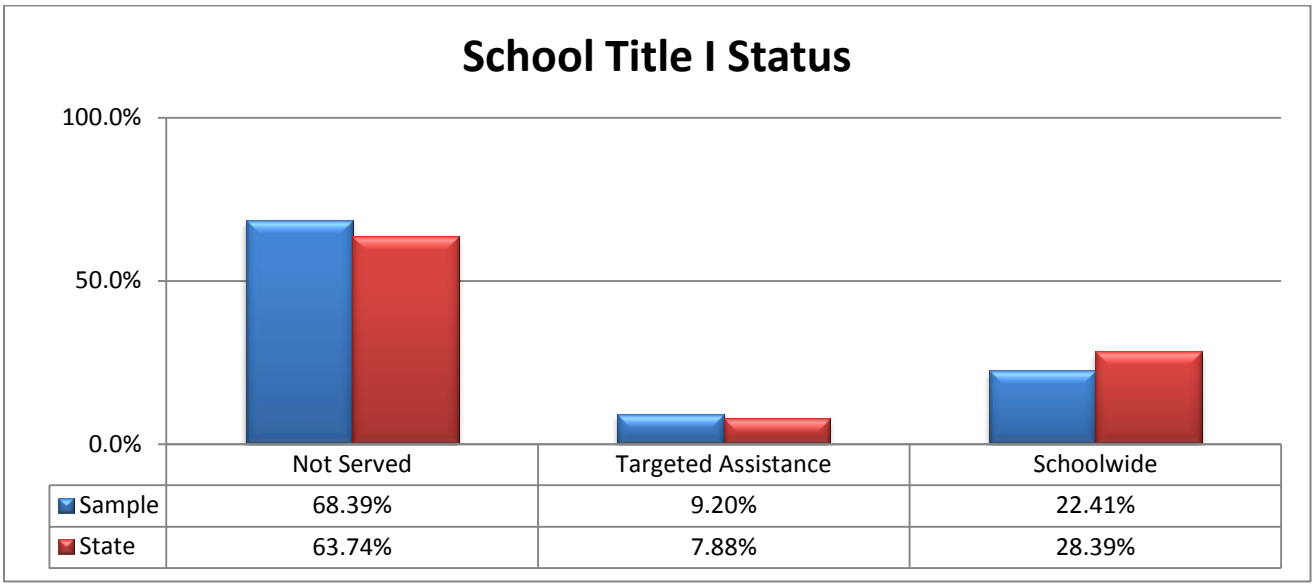
Two types of Title I services are provided in Colorado: targeted assistance and schoolwide programs. Districts determine how to allocate their Title I funds in order to provide the most children the greatest opportunity for improving their learning. As Exhibit 9 illustrates, during the 2013-14 school year, 22.41% of sample schools and 28.39% of schools across the state received funds to establish or maintain schoolwide programs, an opportunity to use Title I funds for all children rather than targeting funds directly toward low-income students. The opportunity to establish schoolwide programs is reserved for schools with the highest concentrations of low-income children. In addition, 9.20% of sample schools and 7.88% of schools across the state received funds to provide targeted assistance to their neediest students. The largest difference between the sample and the state as a whole is between the percentage of schools that did not receive Title I funds. While 68.39% of the sample schools did not receive Title I funds, 63.74% of schools across the state did not receive funding through Title I, a difference of 4.65%. This would seem to indicate that the sample schools serve fewer low-income students than the statewide average.

[2] See more at: https://www.cde.state.co.us/fedprograms/ti/index#sthash.D5QzeVCq.dpuf.

Exhibit 9: *Schools by Title I Services Received*

Title I Status	Sample		State	
	N	%	N	%
Not Served	119	68.39	1,125	63.74
Targeted Assistance	16	9.20	139	7.88
Schoolwide	39	22.41	501	28.39

Source: https://www.cde.state.co.us/fedprograms/dper/tiaschlst.asp



Participant Characteristics

A critical consideration in determining the validity of teacher professional practice ratings is how well the sample population reflects demographic and other characteristics of the general population, all teachers who are required to be evaluated under the requirements of Colorado's Senate Bill 191. The more similar the two populations are, the more confident users of the state model system may be that these results are representative of all teachers in the state.

The 3,258 teachers included in the sample were obtained by matching the 3,436 teachers for whom evaluation data were submitted by the pilot districts with educator identification numbers and demographic data available through CDE. Teachers who had incorrect or missing educator identification numbers as well as those for whom no demographic data were available were eliminated from the dataset. In addition, some teachers were eliminated from the sample due to incorrect codes. To the extent possible, missing codes were obtained by cross-referencing district-provided data with CDE's human resources data to obtain any available demographic information. Only teachers with correct educator identification codes and a complete record of demographic information were included in the study sample.

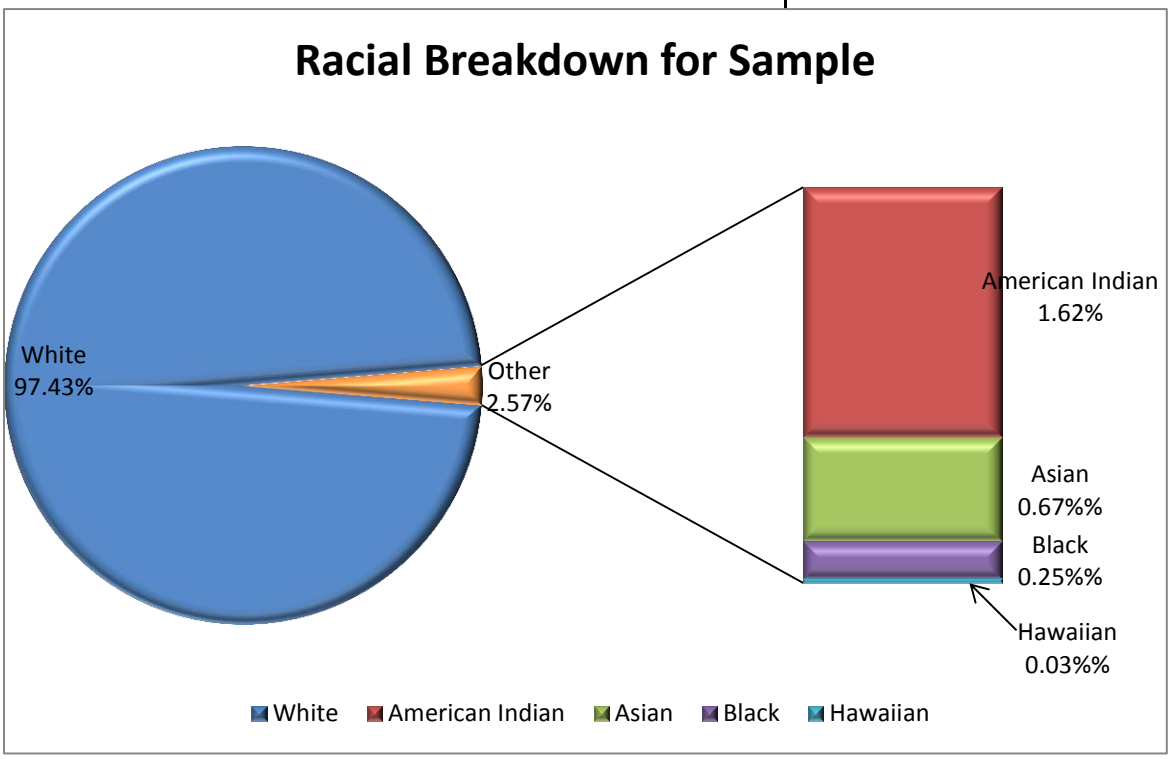
The 51,527 teachers used for the state comparison group were obtained from CDE's 2013-14 human resources data. All educators with valid teacher job codes and demographic information were included in the state comparison group.

***Race/Ethnicity*:** As Exhibit 10 illustrates, the majority of the sample participants (97.58%) are white, with each of the other racial groups representing less than 1.0% of the sample. The pilot site staff members' racial/ethnic make-up is similar to that of the state. Each of the non-white teacher groups represents less than 2.0% of the total population. The discrepancy between the percentage of non-white and white teachers is large for both the pilot sites and the state, with 97.58% of the pilot sites and 96.27% of the state teachers reported as white.

The pilot districts are also quite similar to the state population in terms of the ethnicity of teachers. The proportion of sample teachers who reported their ethnicity as Hispanic or Latino is 1.2% smaller for the sample than for the state. An important consideration for race/ethnicity data is that respondents may report that they belong to any combination of racial categories. Additionally, they may report that they are of Hispanic/Latino descent. This means the percent of race/ethnicity categories reported may sum to more than 100.

Exhibit 10. *Comparison of State and Pilot Sites based on Race*

Race & Ethnicity		Sample		State	
		N	%	N	%
Race	Asian	22	0.67	803	1.34
	Black	8	0.25	884	1.69
	Hawaiian	1	0.03	162	0.31
	American Indian	53	1.62	875	1.67
	White	3,179	97.43	49,605	94.79
Total Staff by Race*		**3,263**		**52,329**	
Ethnicity**	**Hispanic**	**169**		**3,289**	



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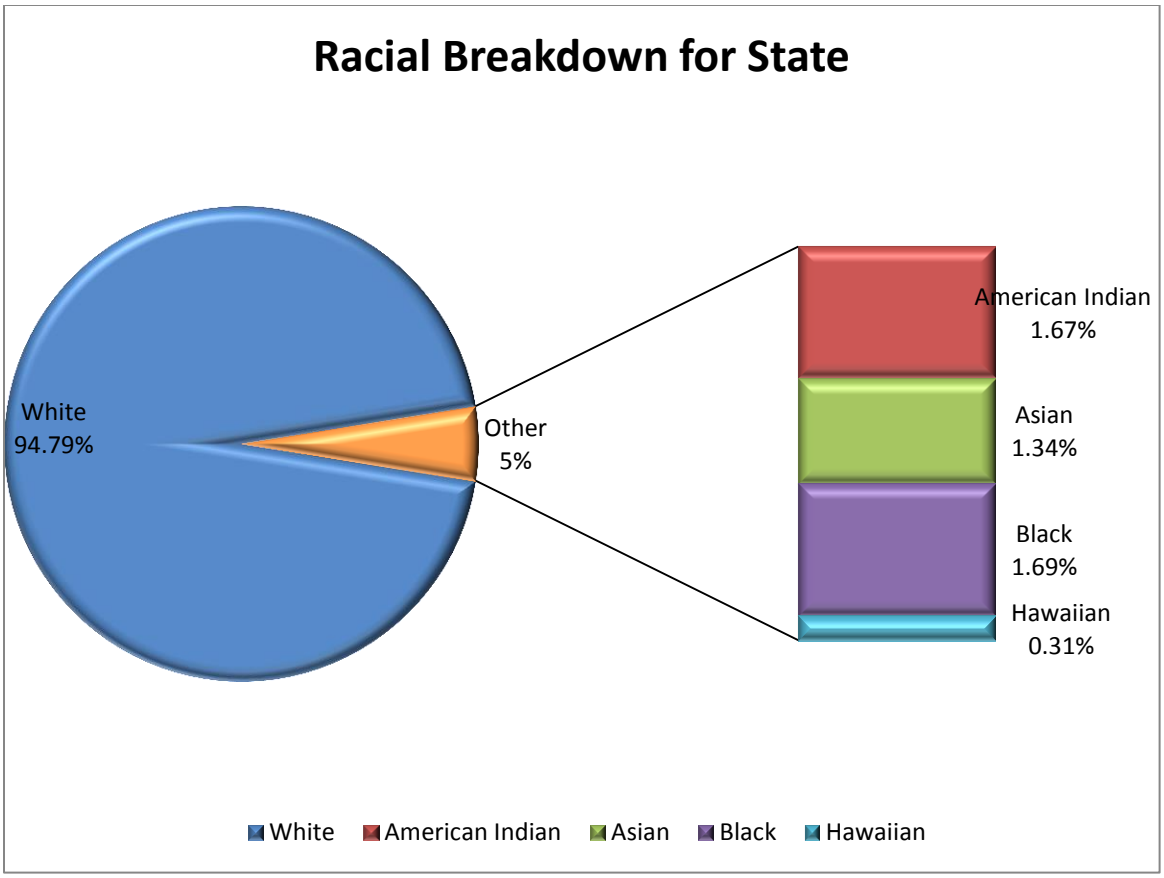


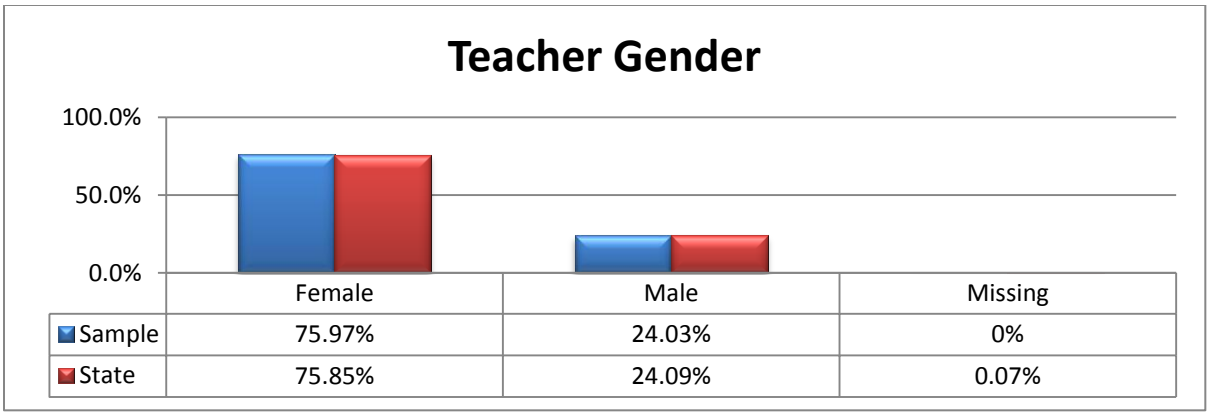
** Colorado educators may report multiple racial categories. Therefore, the "Total Staff" numbers reported here differ from other tables in which the number of teachers in the sample is 3,258 and the number in the state is 51,527. This table reports the number of staff by racial category and is larger than the actual number of staff members because some staff members reported multiple racial categories (e.g., Asian **and** Black).*

***Ethnicity is reported separately from the racial categories because it is possible for an individual to report multiple racial categories as well as an ethnicity category.*

***Gender*:** The proportion of male and female teachers *(Exhibit 11)* is almost identical for the sample and the state.

***Exhibit 11:** Comparison of State and Pilot Sites Based on Gender*

	Sample		State	
Gender	**N**	**%**	**N**	**%**
Female	2,475	75.97	39,081	75.85
Male	783	24.03	12,411	24.09
Missing	0	0.00	35	0.07
Total	3,258		51,527	



***Education Level*:** The education level of teachers as it relates to student achievement has been the topic of research studies for many years, with some studies touting the need for teachers to have Master's or advanced degrees in order to provide more effective education experiences for their students. Still others have shown that other factors are more important. Regardless of the research on which one relies, it is important to understand the differences in highest education level attained by teachers. The sample and state populations *(Exhibit 12)* are quite similar with respect to education level. The largest discrepancies are between those with Bachelor's (3.51% difference) and Master's (3.76% difference) degrees. While 49.45% of the sample teachers report their highest education level to be a Bachelor's degree, 44.94% of the state report the same. The proportions are "flipped" for Master's degrees with 54.49% of the state reporting they have a Master's compared to 49.53% for the sample. Both the sample and the state report having fewer than 1.00% of their teachers with advanced degrees.

Exhibit 12. *Comparison of State and Pilot Sites Based on Highest Education Level*

	Sample		State	
Education Level	**N**	**%**	**N**	**%**
Bachelor's	1,611	49.45	23,155	44.94
Master's	1,617	49.63	27,508	53.39
Advanced	25	0.77	486	0.94
Unknown/Other	5	0.15	378	0.73
Total	3,258		51,527	

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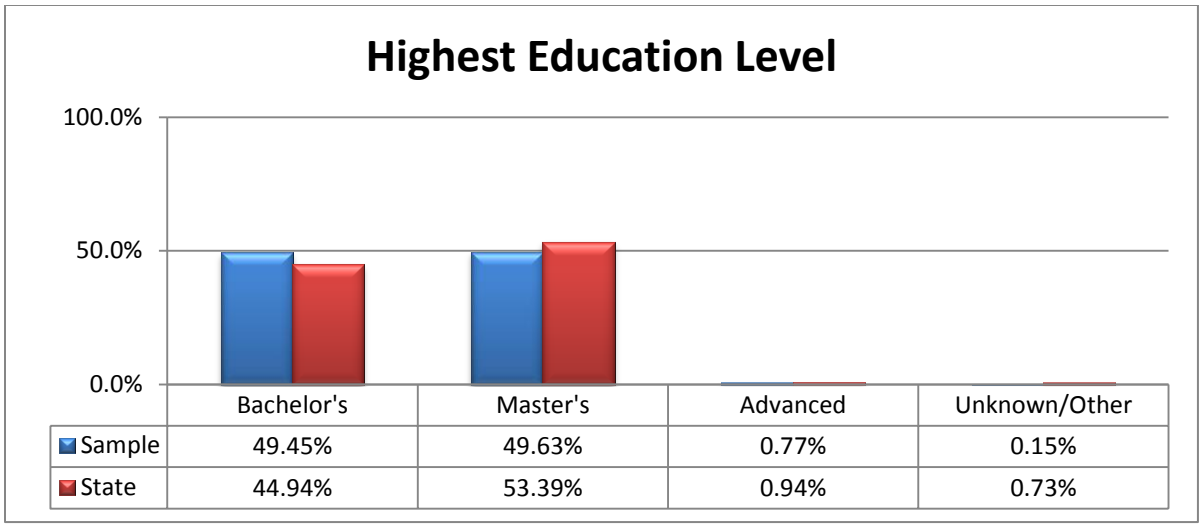
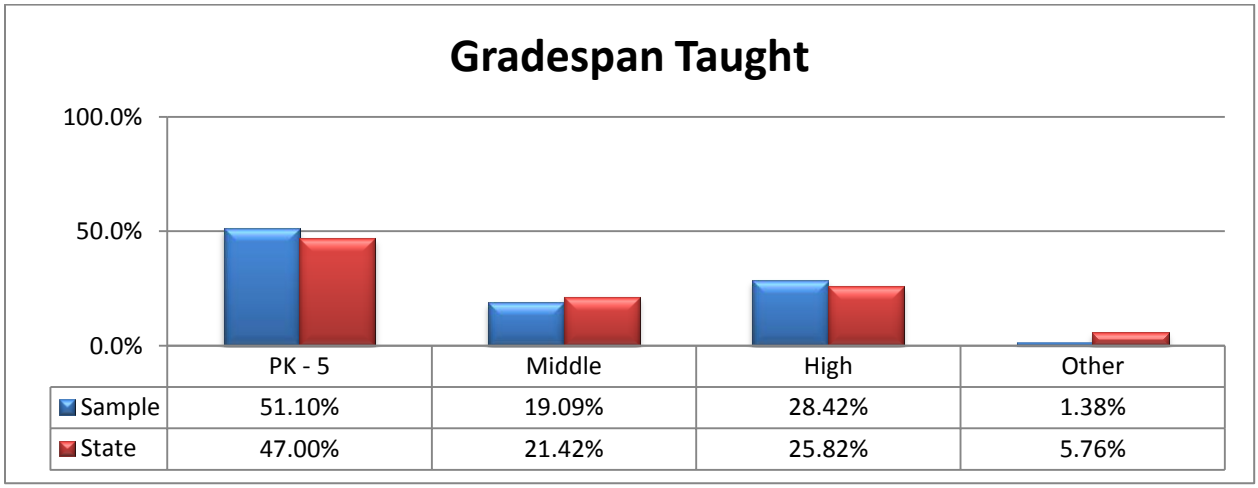


Grade Span: As Exhibit 13 illustrates, the largest percentage of teachers in the sample (51.10%) worked in elementary school settings while the remainder of the sample was split among middle schools (19.09%), high schools (28.42%), and other assignments (1.38%), which may include work in central offices and across school levels. The grade span distribution of the sample is similar to that of the state. For both groups, there are more elementary school teachers than either middle or high school teachers. The smallest number of teachers is found in the "Other" group which represents teachers whose assignments don't fall into the grade span categories.

Exhibit 13. *Comparison of State and Pilot Sites Based on Grade Span Taught*

	Sample		State	
Grade Span	**N**	**%**	**N**	**%**
Elementary (PK-5)	1,665	51.10	24,216	47.00
Middle (6-8)	622	19.09	11,036	21.42
High (9-12)	926	28.42	13,305	25.82
Other	45	1.38	2,970	5.76
Total	**3,258**		**51,527**	

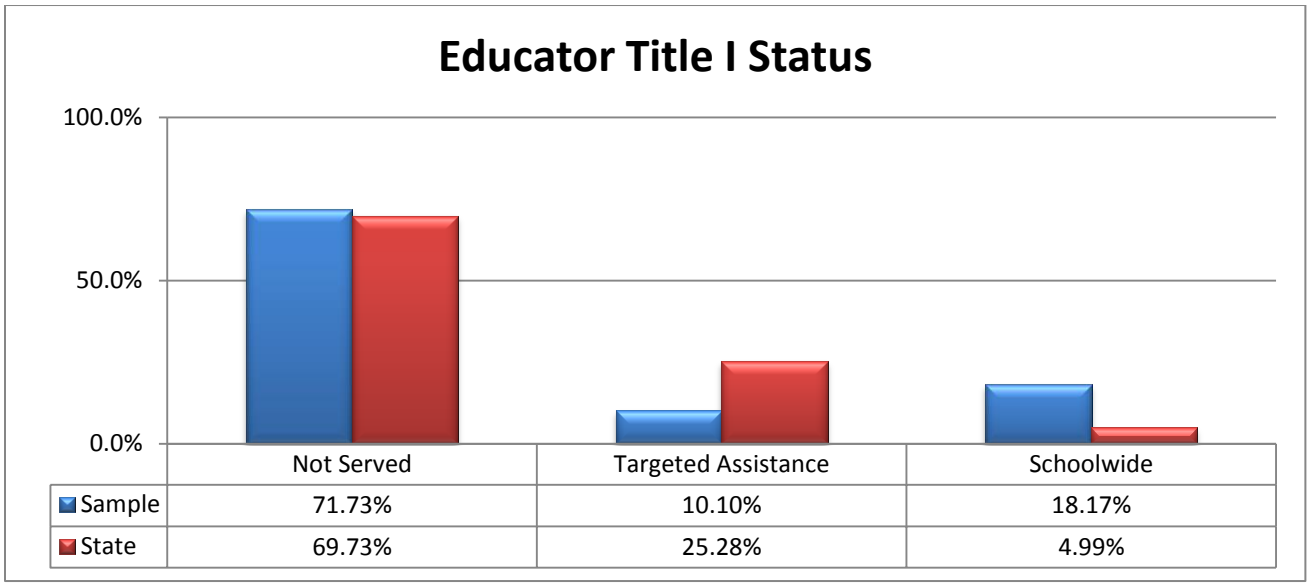


Teachers in Title I Schools: Title I funds are allocated to schools with large concentrations of low income children. Schoolwide programs provide flexibility to schools with the highest concentrations of eligible students to use Title I funds to serve all students in the school, whether eligible or not. Targeted assistance schools use their Title I funds to support eligible children only.

The percentage of sample teachers who worked in Title I schools *(Exhibit 14)*, either schoolwide or targeted assistance (28.27%) is 2 percentage points lower than the 30.27% for the state as a whole, indicating that these two groups are quite similar with respect to their placement in Title I schools.

Exhibit 14. *Comparison of State and Pilot Sites Based on Title I School Placement*

	Sample		State	
Educator Title I Status	**N**	**%**	**N**	**%**
Not Served	2,337	71.73	35,930	69.73
Targeted Assistance	329	10.10	13,024	25.28
Schoolwide	592	18.17	2573	4.99
Total	**3,258**		**51,527**	



In summary, the teachers in the sample are primarily white females who work in schools required to develop a performance plan. They are fairly evenly split between those whose highest education credential is a Bachelor's degree and those who have earned a Master's. Most teach in elementary schools rather than middle or high, and 71.73% work in schools not served by Title I. As CDE continues to monitor educator evaluation results, attention should be paid to school districts in close proximity to cities to ensure that results for those districts do not vary significantly from those of the sample and/or the state as a whole.

An important consideration for comparing the sample to the state population is that the sample districts self-selected into the process. All districts involved in pilot activities applied to be a part of the work and signed Memoranda of Understanding with CDE agreeing to take part

in all pilot activities, including provision of data for this study. This self-selection may contribute to the small differences previously described.

Does the distribution of professional practice ratings reflect a range of teacher proficiency?

The Rubric for Evaluating Colorado Teachers is a standards-based instrument, which means teachers are rated in terms of their performance on specifically defined performance standards: Colorado's Teacher Quality Standards. When conducting personnel evaluations, final professional practice ratings should accurately and adequately capture the performance of the person being evaluated. Because each person is assessed individually to determine how well their performance meets or exceeds the specifications of the standards, the shape of the ratings distribution is dependent on the performance of the sample participants. Performance reflected at each score level should differ distinctly from those at other score levels (Lane and Stone, 2006). To examine if this difference is present for sample participants, standard and element ratings as well as the overall professional practice ratings are reported based on the five possible rating levels*: Basic, Partially Proficient, Proficient, Accomplished* and *Exemplary.*

The overall professional practice rating is determined by the aggregation of professional practice ratings to element and then standard ratings and finally the overall rating. This final rating is discussed during the end-of-year performance discussion at which time the ratings are confirmed by the data collected throughout the year, including evaluator/teacher conferences regarding performance feedback and expectations for changes in professional practice. Performance data as well as artifacts and observation information contribute to the discussion of the final ratings.

Element and standard ratings as well as overall professional practice ratings were examined to determine whether all performance levels of the rubric were used in evaluating teachers.

Findings

All rating levels were used to describe the performance of the teachers in the study sample (*Exhibit 15*). Evaluators rated teachers' performance across the full range of rating levels for all standards, elements and overall professional practice. With few exceptions, standard ratings and the overall professional practice ratings clustered at the proficient and accomplished levels. The least frequently used rating level is basic, with percentages of teachers rated at that level ranging from 0.09% to 6.66%.

Exhibit 15. *Percent of Sample Participants Scoring at Each Rating Level by Standard and Element*

	Percent of Teachers at Each Rating Level in 2013-14					
Standards and Elements	**Basic**	**Part. Prof.**	**Prof.**	**Acc.**	**Exemp.**	**N**
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	***0.21***	***4.51***	***52.96***	***38.19***	***4.11***	***3,257***
Element A: Pedagogical expertise in content.	1.84	2.03	50.60	35.19	10.35	3,257
Element B: Student literacy development.	2.52	8.54	64.06	20.65	4.24	3,255
Element C: Mathematics.	3.84	11.88	51.13	26.48	6.68	3,233
Element D: Disciplines.	0.80	6.57	59.90	27.94	4.79	3,257
Element E: Interconnectedness of content areas/disciplines.	1.63	6.08	46.08	34.99	11.21	3,255
Element F: Relevant instruction and content.	0.89	10.47	36.85	43.59	8.19	3,246

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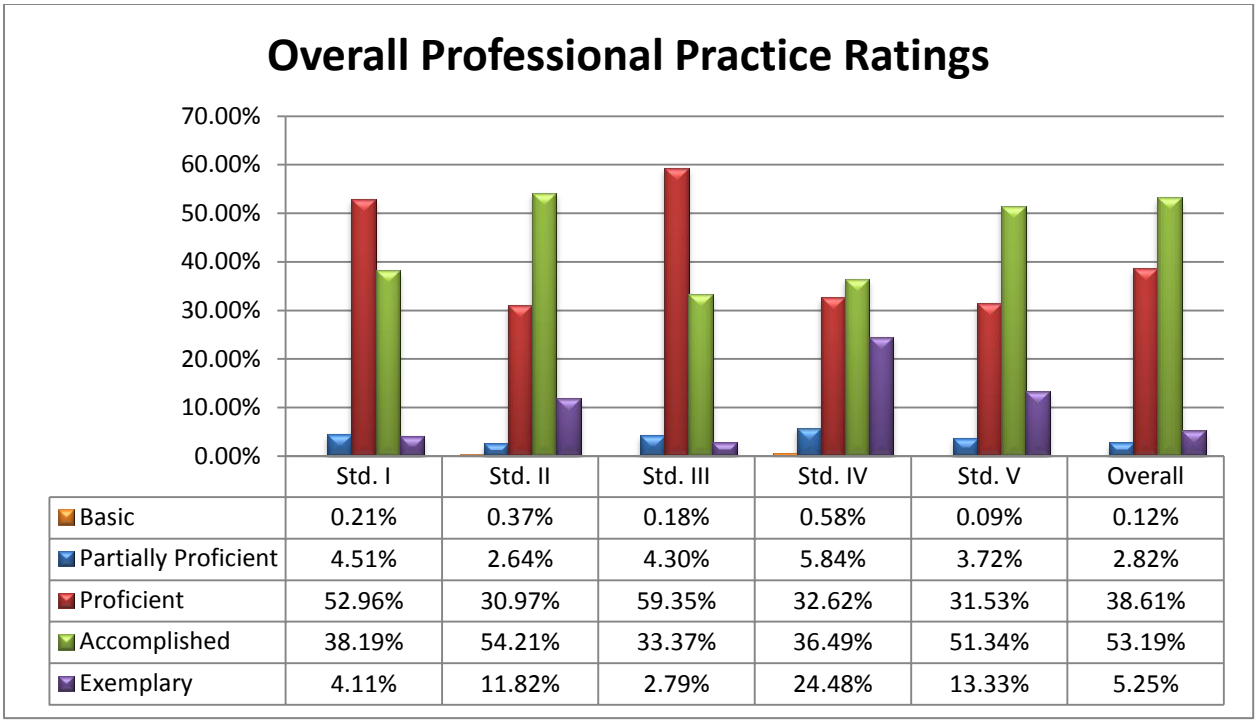
Standards and Elements	Percent of Teachers at Each Rating Level in 2013-14					
	Basic	Part. Prof.	Prof.	Acc.	Exemp.	N
Standard II: **Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.**	***0.37***	***2.64***	***30.97***	***54.21***	***11.82***	***3,258***
Element A: Predictable and nurturing learning environment.	1.01	2.27	17.65	30.29	48.77	3,258
Element B: Commitment to and respect for diversity.	0.77	3.44	31.23	54.15	10.41	3,256
Element C: Engagement of students as individuals.	6.66	5.53	32.68	41.58	13.54	3,256
Element D: Adaptation of teaching to benefit all students.	1.47	3.53	62.90	24.48	7.62	3,256
Element E: Proactive, clear and constructive feedback.	2.49	6.42	46.61	22.04	22.44	3,257
Element F: Student behavior, use of time and intervention strategies.	1.20	4.83	35.92	37.77	20.28	3,249
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	***0.18***	***4.30***	***59.35***	***33.37***	***2.79***	***3,257***
Element A: Knowledge of current developmental science	3.19	7.12	59.56	25.64	4.48	3,257
Element B: Instruction based on student assessments.	2.00	6.30	67.77	20.43	3.50	3,255
Element C: Knowledge of research on instructional practices.	1.41	4.92	44.46	23.06	26.14	3,252
Element D: Integration and use of technology.	1.60	13.29	63.14	17.27	4.69	3,242
Element E: High expectations for all students.	1.47	14.46	63.89	17.22	2.95	3,257
Element F: Working in teams and developing leadership qualities.	0.46	5.16	53.01	28.67	12.69	3,254
Element G: Effective communication.	0.37	2.86	44.62	29.81	22.34	3,254
Element H: Appropriate assessment methods.	4.06	8.48	68.15	14.57	4.73	3,253
Standard IV: **Teachers reflect on their practice.**	***0.58***	***5.84***	***32.62***	***36.49***	***24.48***	***3,256***
Element A: Use of student learning analyses to improve practice.	1.35	2.98	39.93	19.44	36.30	3,256
Element B: Professional growth linked to goals.	2.52	10.07	27.00	40.33	20.09	3,256
Element C: Response to complex, dynamic environment.	1.29	9.47	31.41	24.06	33.77	3,254
Standard V: Teachers demonstrate leadership.	***0.09***	***3.72***	***31.53***	***51.34***	***13.33***	***3,257***
Element A: School leadership.	1.50	3.47	28.77	39.18	27.08	3,257
Element B: Professional contributions.	4.05	32.65	29.45	25.68	8.17	3,256
Element C: Advocacy for schools and students.	5.94	7.85	55.56	19.88	10.77	3,249
Element D: Ethical standards.	0.65	0.40	12.03	33.56	53.37	3,251
Overall	*0.12*	*2.82*	*38.61*	*53.19*	*5.25*	*3,258*

Explanation of Color Coding for Ratings

	Smallest percentage of ratings for the standard or element
	2nd smallest percentage of ratings for the standard or element
	3rd smallest percentage of ratings for the standard or element
	2nd largest percentage of ratings for the standard or element
	Largest percentage of ratings for the standard or element

Note: Percentages may not sum to 100 because final ratings were not reported for all participants on all standards.



	Std. I	Std. II	Std. III	Std. IV	Std. V	Overall
Basic	0.21%	0.37%	0.18%	0.58%	0.09%	0.12%
Partially Proficient	4.51%	2.64%	4.30%	5.84%	3.72%	2.82%
Proficient	52.96%	30.97%	59.35%	32.62%	31.53%	38.61%
Accomplished	38.19%	54.21%	33.37%	36.49%	51.34%	53.19%
Exemplary	4.11%	11.82%	2.79%	24.48%	13.33%	5.25%

Evaluator ratings of professional practice represent a broader range to describe teacher performance for individual elements *(Exhibits 16-20)* associated with the standards. This is because some of the specificity provided when professional practices are rated is lost when those ratings are aggregated to determine element ratings. Similarly, some of the specificity of element ratings is lost when they are aggregated to determine standard ratings. The same is true for overall professional practice ratings when standard ratings are aggregated.

The majority of element and standard ratings are clustered at the proficient and accomplished levels. Basic and partially proficient professional practice ratings were used more frequently for elements than at the standard level and the difference between the number of exemplary ratings and those for basic and partially proficient is smaller for elements than for standards. This is most likely a result of the fact that standard ratings are determined by the collection of ratings for their associated elements. In other words, the rating for the first standard is determined by the six ratings for elements associated with that element.

Using an example from the 2014-15 User's Guide for the Educator Evaluation System (*p. 44*), the ratings for individual elements may be:

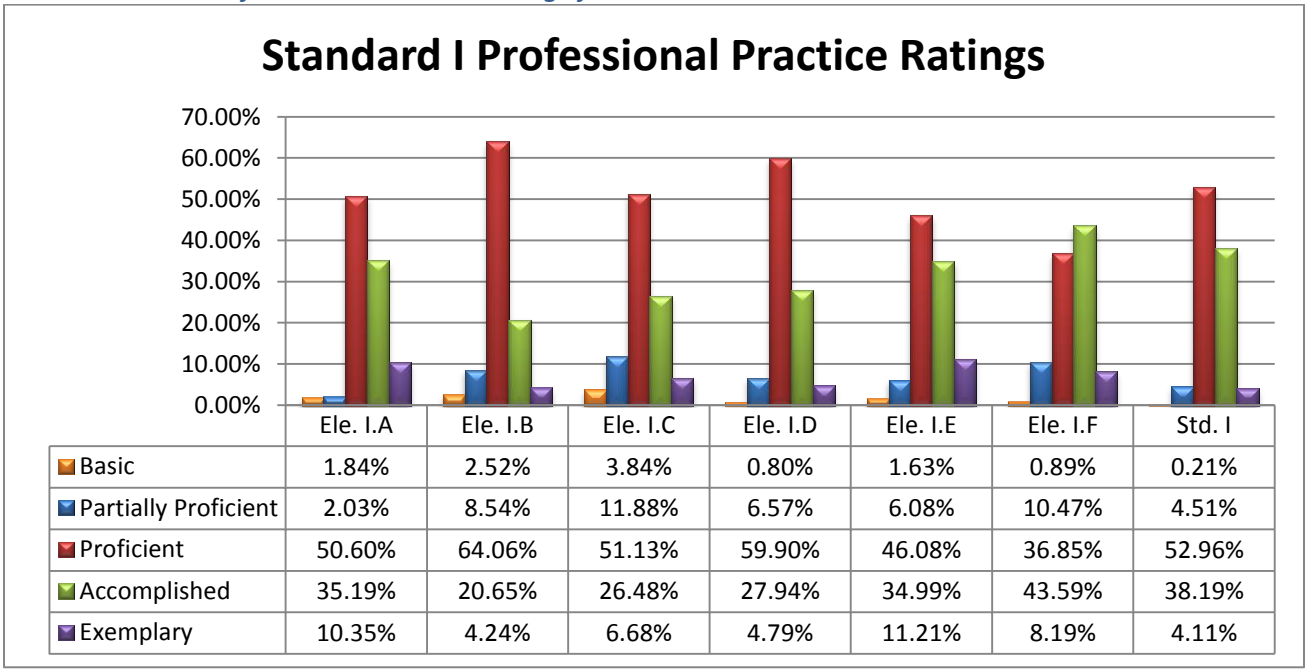
Element A: 2 (Proficient)
Element B: 3 (Accomplished)
Element C: 1 (Partially Proficient)
Element D: 2 (Proficient)
Element E: 3 (Accomplished)
Element F: 2 (Proficient)

To determine the rating for Standard I, the points for the element ratings are totalled. In this case, the total is 13. The total points for all elements associated with a standard are converted to a standard rating using the following scoring structure:

0 to 2 points	Basic
3 to 8 points	Partially Proficient
9 to 14 points	Proficient
15 to 20 points	Accomplished
21 to 24 points	Exemplary

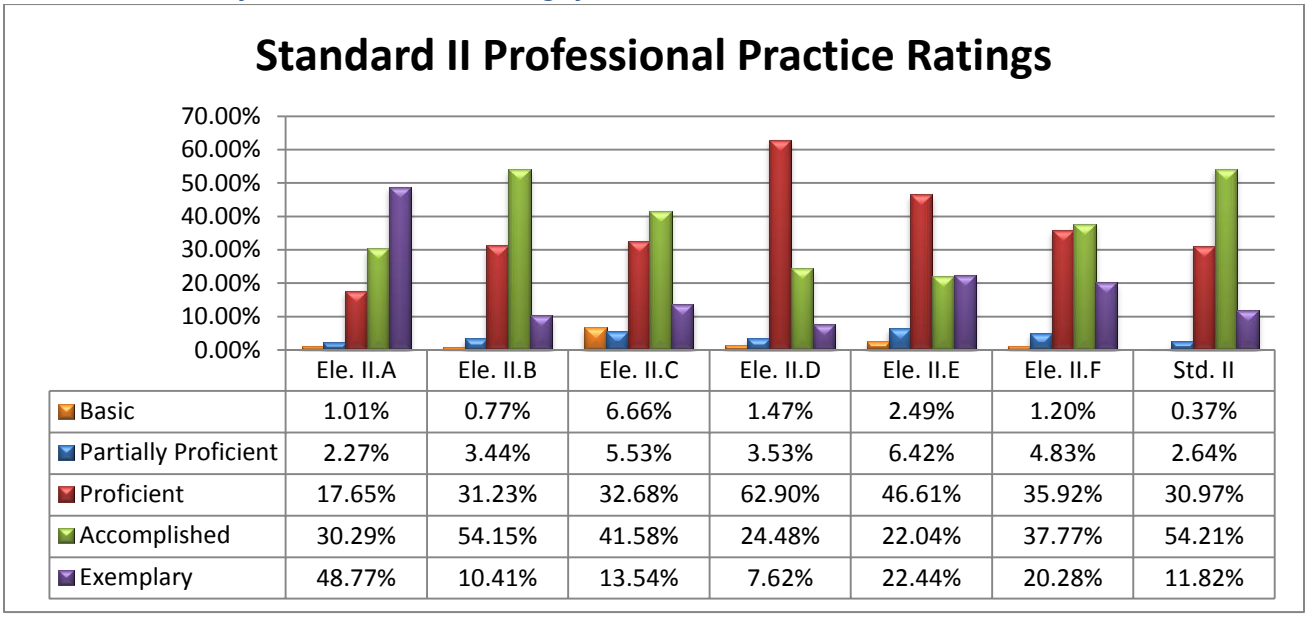
For this example, the teacher would receive a rating of Proficient for the standard as a whole based on individual element ratings, even though some of the element-level ratings were above and below Proficient. For additional information, see "Rating the Elements and Standards, p. 34, 2014-15 User's Guide: Colorado State Model Educator Evaluation System.

Exhibit 16. *Professional Practice Ratings for Standard I and Associated Elements*



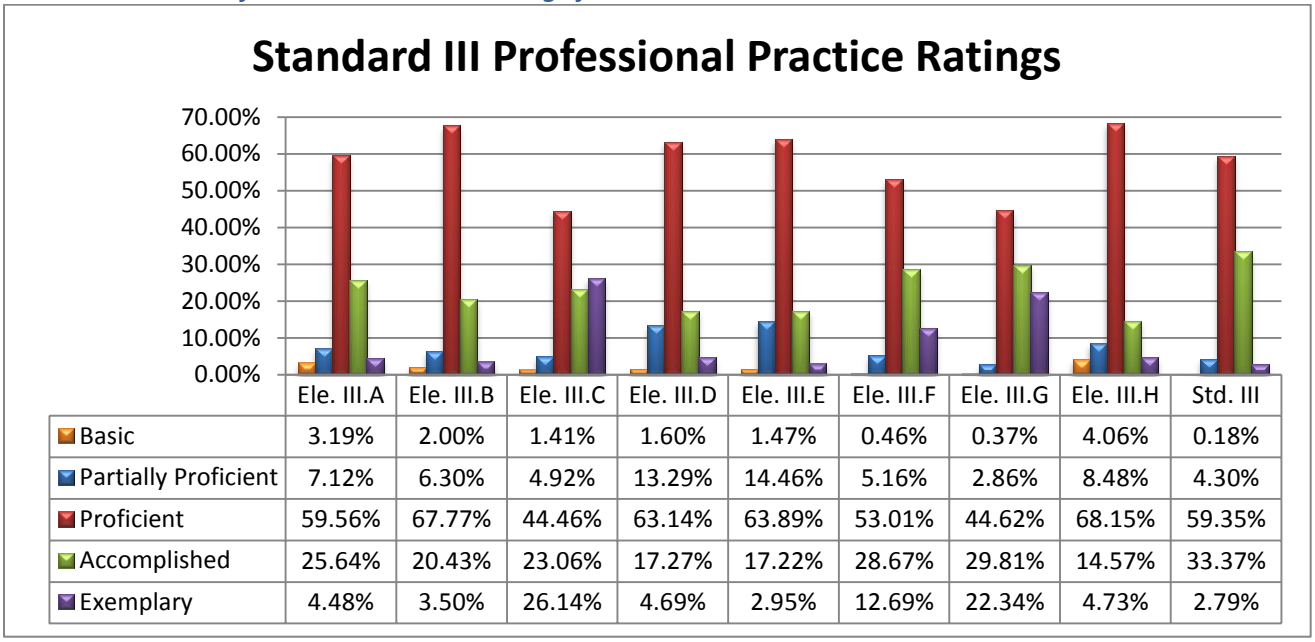
	Ele. I.A	Ele. I.B	Ele. I.C	Ele. I.D	Ele. I.E	Ele. I.F	Std. I
Basic	1.84%	2.52%	3.84%	0.80%	1.63%	0.89%	0.21%
Partially Proficient	2.03%	8.54%	11.88%	6.57%	6.08%	10.47%	4.51%
Proficient	50.60%	64.06%	51.13%	59.90%	46.08%	36.85%	52.96%
Accomplished	35.19%	20.65%	26.48%	27.94%	34.99%	43.59%	38.19%
Exemplary	10.35%	4.24%	6.68%	4.79%	11.21%	8.19%	4.11%

Exhibit 17. *Professional Practice Ratings for Standard II and Associated Elements*



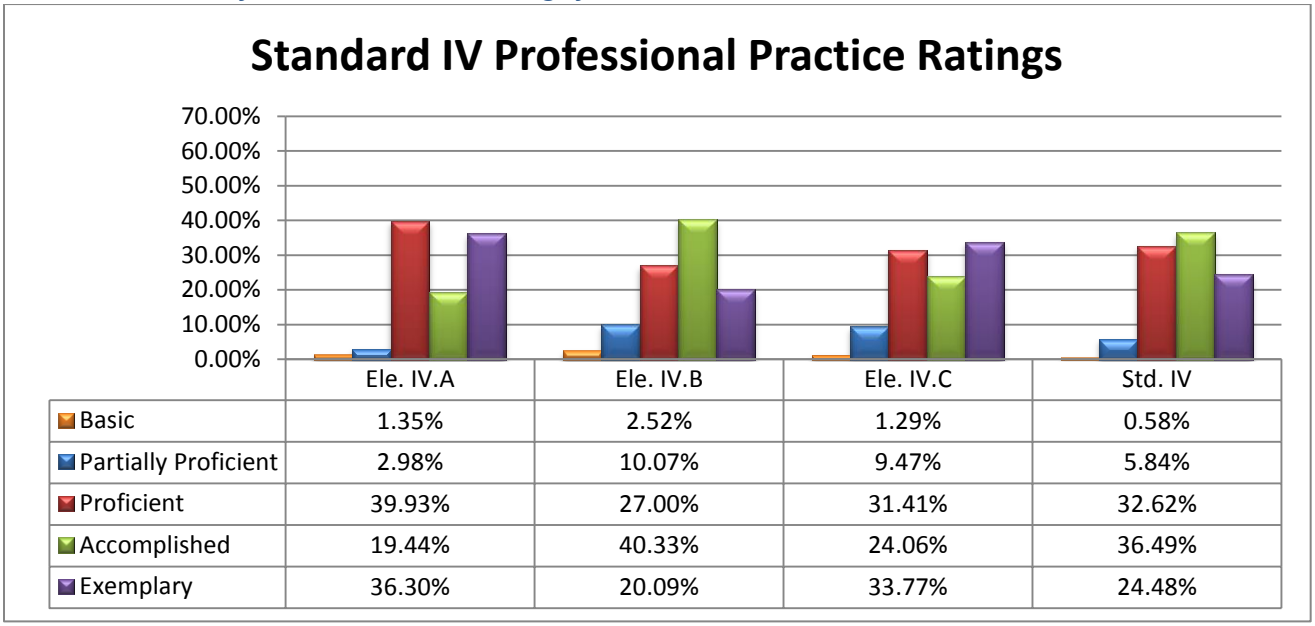
	Ele. II.A	Ele. II.B	Ele. II.C	Ele. II.D	Ele. II.E	Ele. II.F	Std. II
Basic	1.01%	0.77%	6.66%	1.47%	2.49%	1.20%	0.37%
Partially Proficient	2.27%	3.44%	5.53%	3.53%	6.42%	4.83%	2.64%
Proficient	17.65%	31.23%	32.68%	62.90%	46.61%	35.92%	30.97%
Accomplished	30.29%	54.15%	41.58%	24.48%	22.04%	37.77%	54.21%
Exemplary	48.77%	10.41%	13.54%	7.62%	22.44%	20.28%	11.82%

Exhibit 18. *Professional Practice Ratings for Standard III and Associated Elements*



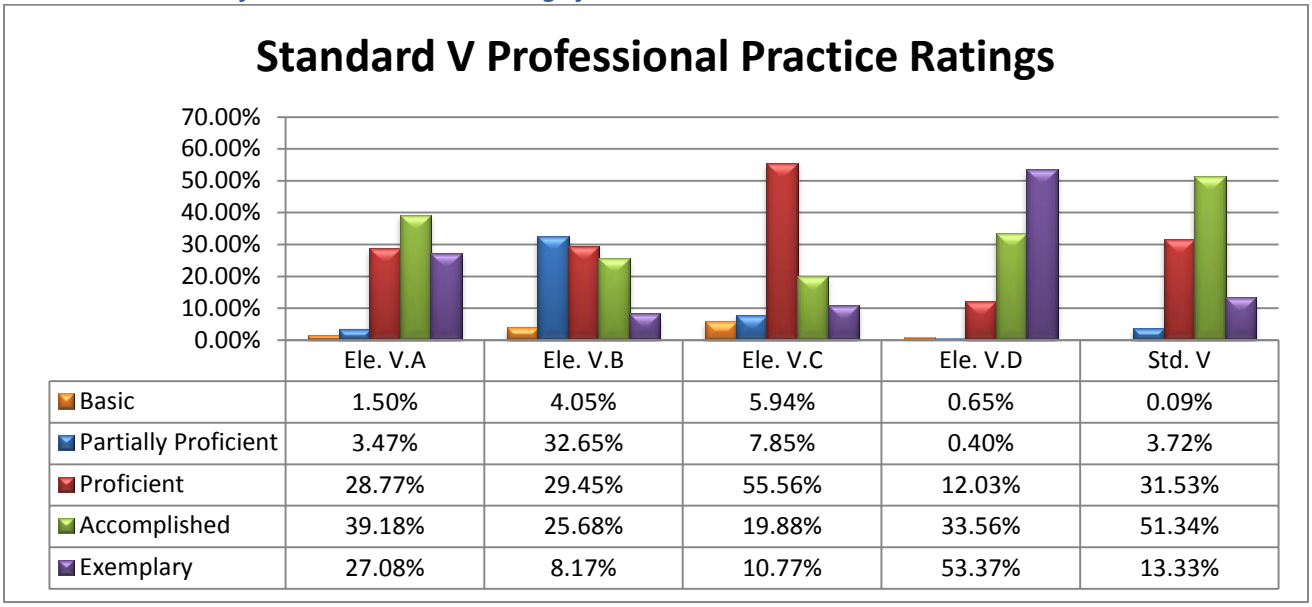
	Ele. III.A	Ele. III.B	Ele. III.C	Ele. III.D	Ele. III.E	Ele. III.F	Ele. III.G	Ele. III.H	Std. III
Basic	3.19%	2.00%	1.41%	1.60%	1.47%	0.46%	0.37%	4.06%	0.18%
Partially Proficient	7.12%	6.30%	4.92%	13.29%	14.46%	5.16%	2.86%	8.48%	4.30%
Proficient	59.56%	67.77%	44.46%	63.14%	63.89%	53.01%	44.62%	68.15%	59.35%
Accomplished	25.64%	20.43%	23.06%	17.27%	17.22%	28.67%	29.81%	14.57%	33.37%
Exemplary	4.48%	3.50%	26.14%	4.69%	2.95%	12.69%	22.34%	4.73%	2.79%

Exhibit 19. *Professional Practice Ratings for Standard IV and Associated Elements*



	Ele. IV.A	Ele. IV.B	Ele. IV.C	Std. IV
Basic	1.35%	2.52%	1.29%	0.58%
Partially Proficient	2.98%	10.07%	9.47%	5.84%
Proficient	39.93%	27.00%	31.41%	32.62%
Accomplished	19.44%	40.33%	24.06%	36.49%
Exemplary	36.30%	20.09%	33.77%	24.48%

Exhibit 20. *Professional Practice Ratings for Standard V and Associated Elements*



	Ele. V.A	Ele. V.B	Ele. V.C	Ele. V.D	Std. V
Basic	1.50%	4.05%	5.94%	0.65%	0.09%
Partially Proficient	3.47%	32.65%	7.85%	0.40%	3.72%
Proficient	28.77%	29.45%	55.56%	12.03%	31.53%
Accomplished	39.18%	25.68%	19.88%	33.56%	51.34%
Exemplary	27.08%	8.17%	10.77%	53.37%	13.33%

In summary, the distribution of professional practice ratings for elements, standards and overall performance suggests that the rubric allows for discrimination between and among varying performance levels. In most instances, the proportion of teachers rated basic and partially proficient was larger for element ratings than for standards. This is also true for all standards and the overall rating on which fewer than 3% of the teachers were rated basic or partially proficient.

Does the distribution of professional practice ratings allow teacher growth to be measured?

To determine whether the state model system makes it possible for teachers to grow professionally from one year to the next, baseline data collected during the 2012-13 school year were compared to 2013-14 data. This year-to-year analysis was conducted to determine whether evaluators' ratings of professional practice, when aggregated to element, standard and overall professional practice ratings, resulted in the use of all rating levels, but also changed teacher ratings from one year to the next. By examining year-to year score changes it is possible to determine whether evaluators consider growth or lack thereof from one year to the next. Multi-level changes may also indicate that evaluators do not feel constrained by the previous year's professional practice ratings and they are willing to "wipe the slate clean" each year in order to judge the quality of the current year's performance.

To respond to this question, the final overall professional practice ratings were examined for teachers for whom final ratings for both 2012-13 and 2013-14 were available. Of the 3,258 teachers in the sample, two consecutive years of data were available for 1,361. Pairs of ratings for individual teachers were compared to determine changes between the two years and to identify patterns and trends.

Findings

A review of data comparing 2012-13 final overall professional practice ratings to those of 2013-14 *(Exhibit 21),* provides an examination of year-to-year overall professional practice ratings for the 1,303 teachers who work in one of the pilot districts and for whom two years (2012-13 and 2014-15) of data were available. Slightly more than 11% of the teachers experienced ratings decreases while just over 35% moved up one or more levels. Overall professional practice ratings stayed the same for 53.65% of the teachers.

Exhibit 21 shows that four (4), or 0.31%, of the 1,303 sample teachers who had professional practice ratings for both years were rated at the basic level in 2012-13. All of the 4 teachers who were rated basic in 2012-13 improved their performance in 2013-14. In fact, no teacher rated basic in 2012-13 was rated either basic or partially proficient in the subsequent year, meaning they increased their ratings by two or more levels. Similarly, of the 73 teachers rated partially proficient in 2012-13, only eight (8) maintained that rating the next year. All others improved their performance by at least one rating level. Of the teachers rated accomplished or exemplary in 2012-13, 75.8%% maintained or improved their overall rating level while the remaining 24.2% experienced a reduction in their ratings.

Teachers and their evaluators are still learning to use the system. In particular, they are learning what is expected of teachers at each rating level. As they gain a deeper understanding of each of the professional practices and exactly what is expected of teachers for each, educators who use the state model system will achieve greater consistency in their professional practice ratings from year to year. In addition, as teachers understand what is expected of them, they will be better able to focus on what is expected of them and ensure that they are meeting or exceeding the Teacher Quality Standards through their instructional and professional responsibilities.

Data such as these should be interpreted in the context of the developmental stage of the state model system. Between 2012-13 and 2013-14 school years, CDE made significant changes to the rubric as a result of feedback from users and experiences of pilot sites in implementing the system. Analyses such as these and the more specific analyses presented in Appendix D should be replicated as the system stabilizes and there are at least two consecutive years of data available when no system changes have been made.

Exhibit 21. *Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14*

	Number of Teachers by Number of Overall Rating Levels Changed in 2013-14									
2012-2013 Rating	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic*					0	0	3	1	0	*4*
Partially Proficient				1	8	46	18	0		*73*
Proficient			0	14	325	336	10			*685*
Accomplished		0	4	57	332	44				*437*
Exemplary	0	0	3	67	34					*104*
N**	*0*	*0*	*7*	*139*	*699*	*426*	*31*	*1*	*0*	*1,303*

	Percent of Teachers by Number of Overall Rating Levels Changed in 2013-14									
2012-2013 Rating	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic*					0.00	0.00	75.00	25.00	0.00	*0.31*
Partially Proficient				1.37	10.96	63.01	24.66	0.00		*5.60*
Proficient			0.00	2.04	47.45	49.05	1.46			*52.57*
Accomplished		0.00	0.92	13.04	75.97	10.07				*33.54*
Exemplary	0.00	0.00	2.88	64.42	32.69					*7.98*
%***	*0.00*	*0.00*	*0.54*	*10.67*	*53.65*	*32.69*	*2.38*	*0.08*	*0.00*	

*The lowest rating level was changed from "Not Evident" to "Basic" after the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

As the state model system stabilizes and users have a deeper understanding of its requirements and how to implement the system with fidelity, the year-to-year professional practice ratings fluctuations should moderate, particularly those representing shifts of more than a single rating level for the overall professional practice rating. For the data presented above, 3.00% of the sample teachers experienced such fluctuations. *"While teachers might be expected to have a good year or a bad year (accounting for some small portion of the year to year change), the validity of an effectiveness measure logically requires that it detect some persistent teaching quality construct. The whole point of test-based teacher evaluation is to identify enduring effectiveness characteristics of teachers who can then be appropriately selected or rewarded."* (Shepard, 2012). CDE should continue to monitor changes in professional practice ratings from year to year to determine if the ratings fluctuations actually do moderate. As Shepard further states, *"Wide fluctuations as well as individual results that lack face validity are likely to be visible to teachers within a school and could well undermine the trust and credibility needed for effective formative reflection and improvement. It would be wise, therefore, . . . to*

triangulate with other indicators of effectiveness" such as measures of student learning, additional artifacts, and student, parent, or peer feedback.

In addition to year-to-year professional practice ratings changes, a determination of whether the state model system provides opportunities for teacher growth must consider the combination of ratings for teachers. One assumption of the system is that, because of the rigorous nature of the rubric, it would be unlikely for any teacher to obtain a rating of exemplary on all of the standards and elements. Therefore, even if a teacher is rated exemplary on some elements, there would still be room for growth on the others.

To test that assumption, the number of standard and element ratings of professional practice 66at each level for each teacher were tabulated and summarized *(Exhibit 22).* For standard ratings, it is possible for a teacher to receive up to five ratings at any single level. For example, 28 teachers each received a single standard rating of basic while one (1) received basic ratings on four of the standards and three (3) were rated basic on 2 and 3 standards. At the other end of the scale, 576 teachers received a single exemplary rating, while 29 were rated exemplary on all five (5) standards.

While it may seem that the 29 teachers who were rated exemplary on all standards would not have room for growth, a closer examination of the data reveals otherwise. The tabulation of professional practice ratings for the 27 elements reveals that only a single teacher of the 3,258 in the sample earned an exemplary rating on all elements. This indicates that a single teacher would not have room for professional growth to be measured by the state model rubric for teachers. All other teachers, including the four (4) who were rated exemplary on 26 of the elements, have room for professional growth to be measured using the state model rubric. In other words, even though teachers score well in some areas, there are still elements and standards on which they have room for growth.

Further, while 104 (7.94%) teachers were rated as exemplary on their overall professional practice rating in 2012-13 *(Exhibit 21),* only 34 (32.69%) maintained that rating level in 2013-14; 70 (67.30%) were rated lower during the subsequent year. A similar pattern was found for teachers rated at the accomplished level. This may relate to the rigor of the rubric in that maintaining the highest levels of performance on all standards and elements year after year would prove challenging to most teachers. This would seem to indicate that there is movement between years both up and down the rating scale and that even though a teacher may be rated quite highly one year, maintaining such a high level of performance across multiple years may prove to be difficult. Therefore, even though it may seem that a teacher has "topped out" on the rating scale one year, that may change during subsequent years.

Exhibit 22. *Number of Teachers by Number of Professional Practice Ratings at Each Level for Standards and Elements*

	Number of Prof. Prac. Ratings at This Level	Number of Teachers with Professional Practice Ratings at Each Level				
		Basic	Partially Proficient	Proficient	Accomplished	Exemplary
Stds.	1	28	201	485	521	576
	2	3	82	561	702	279
	3	3	50	563	673	118
	4	1	31	445	497	52
	5	0	9	336	205	29
Elements	1	354	593	77	137	403
	2	145	342	68	163	330
	3	58	205	101	168	282
	4	44	166	111	225	217
	5	21	106	130	255	200
	6	10	83	120	274	191
	7	22	71	128	263	145
	8	19	64	181	261	127
	9	8	50	161	250	119
	10	4	27	189	242	79
	11	9	22	164	219	80
	12	2	19	195	167	61
	13	1	13	203	155	48
	14	1	8	183	92	45
	15	1	12	192	84	30
	16	2	3	174	68	22
	17	1	3	165	45	18
	18	0	2	131	26	16
	19	1	3	126	12	15
	20	0	2	106	8	9
	21	1	2	92	5	7
	22	0	1	67	3	6
	23	1	0	56	3	10
	24	0	0	34	0	2
	25	0	0	19	0	3
	26	0	0	16	0	4
	27	0	0	27	0	1

Limitations of Findings

The findings discussed above should be considered in the context of the state model system's developmental status at the time data were collected. This is particularly true for comparisons between 2012-13 and 2013-14, presented in Exhibit 21. The methodology for calculating professional practice ratings as well as the rubric itself changed between years in question. Specifically, the lowest rating possible during 2012-13 was not evident, meaning that there was no evidence that the teacher was doing the most foundational practices listed in that category. Most teachers and evaluators considered this to be a punitive, rather than constructive, rating and reported during focus groups and interviews that they avoided using that category. The not evident category was changed to basic for the 2013-14 school year and

the professional practices were modified to reflect the more positive tone of the rating definition (foundational practices that every educator should demonstrate). Because of these significant changes to the rubric, year-to-year comparisons involving 2012-13 and 2013-14 should be interpreted with care.

Finally, because this is only the second year that districts were required to evaluate teachers using systems aligned with S.B. 10-191 requirements, it is possible that some of the changes described above are a result of users becoming more familiar with the system and all of its tools and processes.

Does the distribution of professional practice ratings vary based on key teacher and school characteristics?

Rating distributions were examined to determine if they differed as a function of key teacher, school or district characteristics. There are some variables (e.g., gender, race) for which there are no theoretical reasons to believe a difference in professional practice ratings should occur. For other variables (e.g., education level), there may be an underlying reason to believe that ratings may be different. For example, it may be reasonable to assume that better trained/educated teachers such as those with advanced degrees would exhibit stronger performance on professional practices than those whose highest educational level is a Bachelor's degree. Should analyses reveal such differences, they may not be considered a threat to validity but rather they would confirm expectations for the sample based on highest educational level.

Because final professional practice ratings are ordinal categories, non-parametric tests were used to determine whether differences within in group distributions are statistically significant. The five main rating levels/categories were used in this analysis. As noted earlier, some teachers in the sample did not have professional practice ratings on some standards or elements. To optimize sample size, each analysis included all teachers for whom necessary data were available. To maintain maximum sample size, the comparisons were made individually for each element and standard. Specifically, the following analyses focus on:

- Locale
- District Performance Framework
- School Performance Framework
- Gender
- Race
- Grade Span (Elementary, Middle, or High School)
- Highest Education Level Attained
- Title I Status of School (Not Served, Targeted Assistance, or Schoolwide)

The analyses in this section are organized around person-level and school-level variables. Comparisons were made between the ratings for participants in each category of the variables (e.g., between males and females for the

> *In many cases, the intended interpretation for a given use implies that the construct should be related to some other variables, and, as a result, analyses of the relationship of test scores external to the test provide another important source of validity evidence. . . . Categorical variables, including group membership variables, become relevant when the theory underlying a proposed test use suggests that group differences should be present or absent if a proposed test score interpretation is to be supported. Evidence based on relationships with other variables provides evidence about the degree to which these relationships are consistent with the construct underlying the proposed test score interpretations.*
>
> ***Standards for Educational and Psychological Testing**, 2014, p. 16*

Gender variable). It should be noted that across the 5 standards, 27 elements, overall professional practice ratings and 8 school and teacher characteristics, the number of pairwise comparisons and, therefore, the possibility of finding statistically significant differences is 1,650. This is because all possible combinations were tested to determine whether any group differed significantly from any other group associated with the same variable based on any of the characteristics. For example, there was a single comparison (male to female) to determine whether any group differed significantly from any other group based on gender. However, to make the same determination for grade span, it was necessary to make six comparisons (Elementary to Middle, Elementary to High, Elementary to Other Combinations, Middle to High, Middle to Other Combinations, and High to Other Combinations). Therefore, testing the different categories within the 8 teacher, district and school characteristics required 1,650 separate calculations resulting in the possibility of 1,650 findings of significant differences. Of the 1,650 comparisons, 554 (33.58%) resulted in a finding of a statistically significant difference at the $p<.05$ level. Appendix E provides a complete analysis by school and personal characteristics for each of the standards and elements and for the overall professional practice rating.

Findings

To illustrate the comparisons for Overall Professional Practice Ratings for all district, school and personal characteristics, Exhibit 23 lists the categories within each variable and the statistically significant relationships for overall professional practice ratings as determined by the Mann-Whiney test. For example, overall professional practice ratings for teachers who worked in cities and suburbs were higher than those for teachers who worked in towns and rural areas during 2013-14.

The relationships articulated in Exhibit 23 are representative of those for the standards and their associated elements. As the tables presented in Appendix E illustrate, while not all comparisons are statistically significant and not all of the statistically significant comparisons follow the same pattern as those for overall professional practice ratings, in general, teachers in cities and suburbs were rated higher than those in towns and rural areas. Similarly, when teacher professional practice ratings were examined based on district performance framework categories, teachers in accredited, improvement and priority improvement schools were rated statistically significantly higher than those in schools with distinction ratings.

In addition to the mean professional practice ratings for the groups under consideration, Exhibit 23 includes 95% confidence intervals for the comparisons that were deemed statistically significant. To determine the confidence intervals, the mean professional practice ratings were standardized using Cohen's d statistic and the confidence intervals were calculated on the standardized means (Cahan and Galiel, 2011; Cohen, 1988; and Lenth, 2001).

Exhibit 23. Within Group Comparisons for Overall Professional Practice Ratings by District, School and Personal Variables

School or Personal Variables	The ratings for teachers in these categories are statistically significantly higher than…	The ratings for teachers in these categories.	Cohen's d	95% CI
Locale	City (2.69)	Town (2.52)	0.27	[0.17, 0.37]
		Rural (2.44)	0.41	[0.29, 0.52]
	Suburb (2.67)	Town (2.52)	0.23	[0.14, 0.32]
		Rural (2.44)	0.36	[0.25, 0.48]
District Performance Framework	Accredited (2.64)	Distinction (2.00)	1.04	[0.82, 1.26]
		Priority Imp. (2.45)	0.31	[0.15, 0.46]
	Improvement (2.57)	Distinction (2.00)	0.81	[0.56, 1.06]
	Priority Imp. (2.45)	Distinction (2.00)	0.68	[0.41, 0.95]
School Performance Framework	Performance (2.63)	Priority Imp. (2.47)	0.26	[0.10, 0.42]
		Turnaround (2.22)	0.66	[0.40, 0.92]
	Improvement (2.61)	Priority Imp. (2.47)	0.21	[0.04, 0.39]
		Turnaround (2.22)	0.59	[0.32, 0.85]
	Priority Imp. (2.47)	Turnaround (2.22)	0.39	[0.09, 0.69]
Race*				
Gender	Female (2.65)	Male (2.48)	0.27	[0.19, 0.35]
Highest Level of Education	Master's (2.68)	Bachelor's (2.53)	0.24	[0.17, 0.31]
Gradespan	Elementary (2.68)	Middle (2.54)	0.22	[0.13, 0.31]
		High (2.52)	0.25	[0.17, 0.33]
Title I School Status	Not Served (2.63)	Targeted Assistance (2.50)	0.21	[0.09, 0.32]

*There are no statistically significant differences between racial groups on overall professional practice ratings.

Confidence intervals address the question, *"Given these sample data, how confident are we that the same results would be found in the population. What are the upper and lower limits within which the 'true' population mean can be found?"* (Schmitz, 2007) If the interval contains zero, this indicates that there is no difference between the means (King, 2002). To that end, a close look at the mean professional practice ratings in Exhibit 23 reveals that differences between comparison groups range from 0.2 points for the comparison between cities and towns to 0.6 points for the school performance framework comparison between priority improvement and turnaround.

A discussion of results for sample participants by school performance framework for Standard III *(Exhibit 24)* may help to illustrate the issues discussed above. Only standards and elements for which statistically significant differences between groups were identified are included in the exhibit. An examination of the exhibit reveals that: The difference in professional practice ratings between schools required to write a performance plan, with an average rating of 2.36, and those required to write a priority improvement plan, with an average rating of 2.27, is statistically significant for performance on Standard III.

The difference between the average professional practice ratings and priority improvement scores is 0.09 points. For some, the size of the difference may bring into question the educational or practical importance of the difference between these two groups, even though that difference is statistically significant. Similarly, the difference between performance (2.19) and priority improvement (2.19) for Standard III *(Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.)*Element B *(Instruction based on student assessment.)* and between performance (2.09) and improvement (2.02) for Element E *(High expectations for all students.)* are statistically significant, but the actual value of these differences is less than 0.10 point on a five-point scale.

The 95% confidence interval for Cohen's d associated with the average professional practice ratings reported in Exhibit 24 includes four comparisons whose confidence intervals contain zero (0). These four comparisons, while statistically significant, represent no real differences between average ratings.For the 30 ratings comparisons included in Exhibit 24, the practical significance of the differences is questionable (<0.1 points) for four (4) and Cohen's d indicates that there is not real difference for four (4).

As indicated earlier, of the 1,650 comparisons examined, 554 (33.58%) were found to be statistically significant. Of the 554, 29 of the comparisons were found to have no real difference because the 95% confidence interval contains zero. In other words, 525 (31.82%) of the group comparisons are statistically significant at the p<.05 level of significance.

Because information such as this is frequently interpreted as an indicator of fairness or as inherent bias within the system, much thought should be given to the interpretation of findings. "*In many cases, it is not clear whether the differences are due to real difference between groups in the construct being measured or to some source of bias. . . . A serious search for possible sources of bias that comes up empty provides reassurance that the potential for bias is limited, but even a very extensive research program cannot rule the possibility out. It is always possible that something was missed, and therefore, prudence would suggest that an attempt be made to minimize the differences," (ibid., p. 54).*

> *"The Standards' measurement perspective explicitly excludes one common view of fairness in public discourse: fairness as the equality of testing outcomes for relevant test-taker subgroups. Certainly, most testing professionals agree that group differences in testing outcomes should trigger heightened scrutiny for possible sources of test bias. Examination of group difference also may be important in generating hew hypotheses about bias, fair treatment, and the accessibility of the construct as measured; . . . However, group differences in outcomes do not in themselves indicate that a testing application is biased or unfair"*
>
> ***Standards for Educational and Psychological Testing**, 2014, p. 16*

Exhibit 24. *Comparison of Overall Performance Ratings for School Performance Framework Groups by Professional Practice Ratings for Standards and Their Associated Elements*

Standard and Element	Teachers in this SPF category were rated higher than . . .	Teachers in this SPF category.	Cohen's d	95% CI
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Improvement (2.35)	Turnaround (1.98)	0.57	[0.31, 0.84]
	Performance (2.36)	Turnaround (1.98) Prior.Imp. (2.27)	0.59 0.15	[0.34, 0.85] [-0.02, 0.31]
	Prior.Imp. (2.27)	Turnaround (1.98)	0.45	[0.14, 0.75]
Element A: Knowledge of current developmental science.	Improvement (2.26)	Turnaround (1.62)	0.73	[0.46, 1.00]
	Performance (2.22)	Turnaround (1.62)	0.69	[0.43, 0.94]
	Prior.Imp. (2.18)	Turnaround (1.62)	0.66	[0.36, 0.97]
Element B: Instruction based on student assessment.	Performance (2.19)	Prior.Imp. (2.09)	0.15	[-0.01, 0.31]
Element C: Knowledge of current research on effective instructional practices.	Improvement (2.73)	Turnaround (2.32) Prior.Imp. (2.55)	0.43 0.19	[0.16, 0.69] [0.02, 0.36]
	Performance (2.68)	Turnaround (2.32) Prior.Imp. (2.55)	0.38 0.14	[0.13, 0.64] [-0.02, 0.30]
Element D: Integrate and use of appropriate available technology.	Improvement (2.08)	Turnaround (1.56)	0.67	[0.40, 0.93]
	Performance (2.13)	Turnaround (1.56)	0.74	[0.48, 1.00]
	Prior.Imp. (2.04)	Turnaround (1.56)	0.67	[0.37, 0.98]
Element E: High expectations for all students.	Improvement (2.02)	Turnaround (1.65)	0.49	[0.22, 0.75]
	Performance (2.09)	Turnaround (1.65) Prior.Imp. (1.97) Improvement (2.02)	0.60 0.18 0.10	[0.35, 0.86] [0.02, 0.34] [0.01, 0.18]
	Prior.Imp. (1.97)	Turnaround (1.65)	0.44	[0.14, 0.74]
Element F: Opportunities to work in teams and develop leadership qualities.	Improvement (2.50)	Prior.Imp. (2.32)	0.22	[0.05, 0.40]
	Performance (2.49)	Prior.Imp. (2.32)	0.22	[0.05, 0.38]
Element G: Effective communication.	Improvement (2.70)	Turnaround (2.20) Prior.Imp. (2.56)	0.63 0.16	[0.36, 0.89] [-0.01, 0.34]
	Performance (2.74)	Turnaround (2.20) Prior.Imp. (2.56)	0.69 0.22	[0.43, 0.95] [0.05, 0.38]
	Prior.Imp. (2.56)	Turnaround (2.20)	0.47	[0.17, 0.77]
Element H: Appropriate assessment methods.	Improvement (2.07)	Turnaround (1.48)	0.69	[0.42, 0.95]
	Performance (2.11)	Turnaround (1.48)	0.74	[0.48, 1.00]
	Prior.Imp. (2.11)	Turnaround (1.48)	0.73	[0.42, 1.04]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

CDE would, therefore, be well- advised to continue to monitor group differences as the state model system stabilizes and matures to determine whether the magnitude of the differences changes over time.

Where large differences continue, every effort should be made to understand their cause as well as their practical importance and potential threat to system validity. *"For example, some racial and ethnic subgroups have lower scores on some standardized tests* [performance evaluations] *than do other subgroups. Some of the factors that contribute to these differences are understood (e.g., large differences in family income and other resources, differences in school quality and students' opportunity to learn the material to be assessed), but even where serious efforts have been made to eliminate possible sources of bias in test content and formats, the potential for some score bias cannot be completely ruled out. Therefore, continuing efforts in test design and development to eliminate potential sources of bias without compromising validity, and consistent with legal and regulatory standards, are warranted."* (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 2012, p. 54).

What is the relationship between professional practice ratings for standards and between the elements associated with individual standards?

Correlations were used to examine relationships between standards and between elements associated with individual standards. The strength of the correlations provides information regarding whether professional practice ratings are related to each other and to what extent. A strong correlation indicates that a teacher is likely to receive the same rating on both compared elements (or standard and element) while a lower correlation coefficient indicates larger differences between the ratings and less likelihood that the teacher would receive similar ratings for the items under consideration.

Spearman rho correlations were calculated to examine these relationships. Values for correlations range from 0 (no relationship) to +/-1.00 (perfect relationship). Negative correlation coefficients represent an inverse relationship between the two variables being compared. In such a case, as one variable increases in value, the other would decrease. Cohen (1988) provides a general rule of thumb for interpreting the strength of correlational relationships in social science research *(Exhibit 25).*

Exhibit 25. *Cohen's Rule of Thumb for Interpreting Correlation Coefficients*

Correlation Coefficient	Interpretation of Relationship
>=0.5	Strong
0.3 to 0.5	Medium
0.1 to 0.3	Weak
<0.1	No

Findings

Spearman rho correlation coefficients *(Exhibit 26)* between individual element ratings of professional practice and the ratings for other elements within the standard as well as across all standards illustrate that the mean correlations for elements within a standard ranged from 0.36 for those associated with Standard II (Learning Environment) to 0.52 for those associated with Standard IV (Reflection). These correlation coefficients indicate that the standards are measuring a similar construct, but that there are differences in what they are measuring since the correlations are primarily within the medium range. In addition, the mean Spearman rho correlation for evaluator ratings of professional practice across all elements for all five standards is 0.43. This is within the medium range and a good indication that across all of the items the instrument is measuring related, but not identical, components of the overall construct.

Exhibit 26. *Range of Correlations Between Elements Within Standards*

Standard	Min	Mean	Max
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	0.35	0.46*	0.52
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	0.37	0.46*	0.60
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	0.27	0.40*	0.53
Standard IV: Teachers reflect on their practice.	0.51	0.52*	0.53
Standard V: Teachers demonstrate leadership.	0.21	0.36*	0.48
Total		0.43*	

*p<.01

In addition to examining Spearman rho correlations for elements associated with standards, the relationship between element ratings of professional practice and the overall professional practice rating for the standard with which they are associated was examined *(Exhibit 27).* Element-to-standard correlations ranged between 0.47 for element III. D (use of technology) and 0.81 for element IV. C (response to a complex and dynamic environment). This means that the overall rating for Quality Standard III is moderately correlated to its associated element D. While the 0.81 correlation is quite strong and could indicate that element IV.C is measuring a facet of the underlying construct that is also measured by the standard. This may also be true for all of the elements associated with standard IV as they range from 0.76 to 0.81, all strong relationships. The remaining correlations are within the 0.6 to 0.7 range, which suggests they are measuring a common construct but that each also represents a unique aspect of the construct.

The elements associated with individual standards are correlated with the standards and with each other. The correlations are primarily within a range that would indicate that each element associated is measuring different aspects of the underlying construct measured by the standard.

The overall correlation among the full set of elements reported in Exhibit 27 is 0.66, just into the high range. Further, correlations of individual elements with the overall rating for the standard with which they are associated are stronger than those for the element correlations. In addition, overall standard ratings of professional practice exhibit high to moderate correlations with each other. These findings collectively indicate that the ratings resulting from use of the state model system for teachers contribute to the measurement of the overall professional performance construct and that the elements and standards make unique contributions to the determination of the teacher's level of performance. Standard IV may be an exception to this statement because of the high element to standard correlations. CDE should monitor these relationships within Standard IV and, if necessary, modify the professional practices used to determine the element ratings.

Exhibit 27. *Correlation of Standard Ratings of Professional Practice with Their Associated Elements (Evaluator Ratings)*

Standard	Correlation
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	
Element A: Pedagogical expertise in content.	0.69*
Element B: Student literacy development.	0.64*
Element C: Mathematics.	0.59*
Element D: Disciplines.	0.67*
Element E: Interconnectedness of content areas/disciplines.	0.69*
Element F: Relevant instruction and content.	0.68*
Mean	***0.66****
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	
Element A: Predictable and nurturing learning environment.	0.70*
Element B: Commitment to and respect for diversity.	0.71*
Element C: Engagement of students as individuals.	0.70*
Element D: Adaptation of teaching to benefit all students.	0.60*
Element E: Proactive, clear and constructive feedback.	0.63*
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	0.67*
Mean	***0.67****
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	
Element A: Knowledge of current developmental science.	0.61*
Element B: Instruction based on student assessments.	0.61*
Element C: Knowledge of current research on effective instructional practices.	0.70*
Element D: Integration and use of appropriate available technology.	0.47*
Element E: High expectations for all students.	0.61*
Element F: Opportunities to work in teams and develop leadership qualities.	0.58*
Element G: Effective communication.	0.63*
Element H: Appropriate assessment methods.	0.62*
Mean	***0.60****
Standard IV: Teachers reflect on their practice.	
Element A: Use of student learning analyses to improve practice.	0.79*
Element B: Professional growth linked to goals.	0.76*
Element C: Response to complex, dynamic environment.	0.81*
Mean	***0.79****
Standard V: Teachers demonstrate leadership.	
Element A: Leadership in schools.	0.71*
Element B: Contributions to teaching profession.	0.71*
Element C: Advocacy for schools and students.	0.70*
Element D: High ethical standards.	0.52*
Mean	***0.66****
Overall Mean Correlation	**0.66***

*p<.01

Correlations between and among the five standard ratings of professional practice were examined to further understand the relationships between and among professional practice ratings (*Exhibit 28*). The mean correlation among the five overall professional practice ratings is 0.56 and the range is 0.47 to 0.67. These correlation coefficients indicate that there is a strong relationship between and among the standard ratings of professional practice, but that each standard contributes something unique to the measurement of teacher performance, the overall construct of interest.

Exhibit 28. *Correlations Between and Among Overall Standard Ratings of Professional Practice*

	Std. I	Std. II	Std. III	Std. IV
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.				
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	0.61*			
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	0.67*	0.61*		
Standard IV: Teachers reflect on their practice.	0.54*	0.57*	0.55*	
Standard V: Teachers demonstrate leadership.	0.47*	0.52*	0.50*	0.59*
Mean Correlation Among All Five Standards		**0.56***		

* p<.01

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How reliable and internally consistent are the professional practice ratings?

To answer this question, reliability was examined in several ways. First, correlations between and among the standards and their related elements were examined to determine whether each measures something unique while the collection measures a common construct (teacher performance with respect to the Teacher Quality Standards). These correlations were discussed in the prior section. Second, Cronbach's alpha was calculated for the standards individually and as a whole to determine the strength of the relationships.

Relationships Between and Among Standards and Elements

As Exhibit 28 illustrates correlations between standards range between 0.47 and 0.67. This level of relationship indicates that the standards are interrelated but they also each measure something unique. Similarly, correlations between standards and their associated elements *(Exhibit 27)* range from 0.47 to 0.81. As with standards correlations, these correlation coefficients between standards and elements are low enough to indicate that they are measuring unique facets of teacher effectiveness.

These correlation coefficients indicate that all of the items have at least a weak (0.1 to 0.3) relationship with each other and most are in the medium (0.3 to 0.5) range. This analysis seems to indicate that the standards and elements individually measure unique facets of teacher professional practice and confirms the information in Exhibits 27 and 28. See Appendix F for additional information about correlations between and among standards and elements.

Cronbach's alpha

Cronbach's alpha is generally used as a measure of internal consistency (or interrelatedness), or reliability of a psychometric instrument. In other words, it measures how well a set of variables or items measures a single, one-dimensional construct, such as teacher proficiency toward meeting or exceeding Teacher Quality Standards. Such aspects may be impossible to measure explicitly, so it is necessary to use a collection of items that are combined into a single numerical value (Streiner and Norman, 1985).

Reliability is concerned with the ability of an instrument to measure consistently. It should be noted that the reliability of an instrument is closely associated with its validity. An instrument cannot be valid unless it is reliable. However, the reliability of an instrument does not depend on its validity.

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Cronbach's alpha scores range from zero to one. Higher scores indicate a higher level of interrelatedness of items and therefore a lower level of uniqueness in what the scores are measuring. Similarly, low scores indicate high levels of uniqueness and lower levels of interrelatedness (Schmitt, 1996). As a general rule of thumb, Nunnally, (1978) suggested that a Cronbach's alpha of 0.7 is an acceptable level of reliability. More recent publications (George and Mallery, 2003; Gliem and Gliem, 2003) have recommended 0.8 as the minimum alpha, particularly if the number of items composing the scale is high.

Exhibit 29: *Rules of Thumb Regarding Interpretation of Cronbach's alpha Coefficient*

Cronbach's alpha Coefficient	Interpretation of Strength of Relationship
>.9	Excellent
>.8 to.9	Good
>.7 to .8	Acceptable
>.6 to .7	Questionable
>=.5 to .6	Poor
<.5	Unacceptable

Source: George and Mallery, 2003, p. 231.

Cronbach's alpha scores presented in Exhibit 30 range from a low of 0.71 to a high of 0.84 for the relationships between standard ratings of professional practice and the overall professional practice rating. All of these scores are in the high range and represent strong internal consistency within and across standards.

Exhibit 30: *Cronbach's Alpha for Evaluator Ratings of Performance*

Standards	Cronbach's Alpha	Item N
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	0.83	6
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	0.83	6
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	0.84	8
Standard IV: Teachers reflect on their practice.	0.76	3
Standard V: Teachers demonstrate leadership.	0.71	4
Overall, Across All Standards	0.86	5
Overall, Across All Elements	0.94	27

Cronbach's alpha for evaluator ratings of performance across all elements is 0.94 and across all standards is 0.86. This represents a higher level of consistency/reliability for the standards collectively than for individual standards. While this is a very high value for alpha, it should be considered in the context of the large number of items on which it is based. Alpha coefficients tend to be inflated when they are based on a large number of dimensions, or items. In this case, the 27 elements are the basis for calculating alpha. The fact that this number is so much higher than the number of items for individual standards may explain the very high alpha.

How similar are self-assessment ratings to evaluator ratings of professional practice?

The Colorado State Model Educator Evaluation System specifies that the person being evaluated determines whether self-assessment information is shared with the evaluator and the circumstances under which those ratings are shared. For this study, however, participating districts agreed to share self-assessment information for with CDE for the purpose of conducting research regarding system efficacy. All information on self-assessments as well as evaluator ratings is reported in the aggregate in such a way that individual participants are not identifiable.

In CDE-sponsored trainings, teachers are encouraged to honestly and critically assess their performance within the first few weeks of the school year. Such an assessment should take into account the teacher's skill set, district initiatives, the approved curriculum, the students to be taught during the school year, and any other contextual issues that may impact their ability to provide a high quality education experience for all of their students. Further, they are encouraged to use their self-assessment ratings as a foundation for reflection and a guide for professional improvement throughout the year. If this process is adhered to, it would seem reasonable for teachers to rate themselves at the beginning of the year, take necessary steps to improve their performance throughout the year, and then earn improved ratings at the end of the year, when the evaluator finalizes the overall professional practice rating.

The analysis of self-assessment ratings compared to evaluators' final ratings entailed matching the two types of ratings to obtain a dataset with both ratings for all of the teachers. A total of 3,568 cases were examined. This included 3,258 teachers in the sample and an additional 310 teachers for whom only self-assessment ratings were available *(Exhibit 31)*. Of the 3,568 total teachers for whom either self-assessment or final ratings were available, 2,590 teachers had both self-assessment and final ratings. This is the sample used to answer questions related to self-assessments.

Having highly-skilled, committed and motivated teachers is to the benefit of all our children and young people by improving their learning experiences. Developing and maintaining skills, commitment and motivation is part of a career-long process. This process involves all teachers engaging in self-evaluation and in being career-long learners.

Teachers who engage in self-evaluation are best placed to be active participants in determining the focus of their learning and its intended outcomes, how their learning occurs and how its success is evaluated. Self-evaluation should help teachers to identify the best way forward for themselves, the children and young people, their school and their wider learning community including associated schools groups.

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Exhibit 31. *Number and Percent of Teachers with Self-Assessment and Final Ratings*

	N	%
Self-Assessment Ratings	2,900	81.28
Final Ratings	3,258	91.31
Self-Assessment Only	310	8.69
Final Ratings Only	668	18.72
Both Ratings	2,590	72.59
Total Cases	3,568	100

Findings

Teacher self-assessment ratings differed from the ratings provided by their evaluators *(Exhibit 32).* For all standards and all of their associated elements, evaluators rated teachers higher than they rated themselves. This result seems reasonable in that anecdotal evidence provided by teacher evaluators in Colorado who have consistently indicated that teachers tend to be "harder on themselves than anyone else." The timing of the two ratings should also be considered when interpreting these findings as the self-assessment is completed very early in the school year while the evaluator rating comes at the end of the year. Some of the discrepancy between the two ratings may be due to teacher growth during the school year. All differences between average ratings reported in Exhibit 32 are statistically significant at the p.<05 level.

Exhibit 32: *Comparison of Self-Assessment Ratings to Evaluator Ratings*

	Average Ratings		Self-Assessments			Final Ratings		
N = 2,590	Self	Final	% Below Prof.	% Prof.	% Above Prof.	% Below Prof.	% Prof.	% Above Prof.
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	2.16	2.46	14.13	56.68	29.19	3.28	51.93	44.79
Element A: Aligned instruction.	2.27	2.55	9.69	57.37	32.93	2.59	49.85	47.57
Element B: Literacy development.	1.89	2.20	22.36	61.00	16.64	8.92	64.52	26.53
Element C: Math development.	1.90	2.24	30.85	41.31	27.84	14.56	50.50	34.44
Element D: Specific content.	2.07	2.33	16.25	60.00	23.75	5.83	59.73	34.40
Element E: Interconnected of content areas/disciplines.	2.24	2.53	17.99	44.98	37.03	6.10	45.75	48.03
Element F: Relevant instruction and content.	2.17	2.53	23.98	36.45	39.58	9.38	36.18	53.98
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	2.54	2.79	7.37	40.27	52.36	2.51	28.42	69.07
Element A: Predictable and nurturing learning environment.	3.08	3.28	5.91	20.73	73.36	2.86	16.06	81.08
Element B: Commitment to and respect for diversity.	2.55	2.73	11.66	28.73	59.61	3.82	29.65	66.49

Continued on next page.

N = 2,590	Average Ratings		Self-Assessments			Final Ratings		
	Self	Final	% Below Prof.	% Prof.	% Above Prof.	% Below Prof.	% Prof.	% Above Prof.
Element C: Engagement of students as individuals.	2.20	2.57	23.47	33.09	43.44	10.50	31.62	57.84
Element D: Adaptation of teaching to benefit all students.	2.25	2.35	10.54	59.31	30.15	4.48	62.39	33.05
Element E: Proactive, clear and constructive feedback.	2.25	2.61	19.85	46.95	33.20	7.64	45.83	46.49
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	2.49	2.74	8.76	49.85	41.39	5.25	35.06	59.65
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	2.12	2.37	14.25	60.50	25.25	3.44	58.73	37.84
Element A: Knowledge of current developmental science.	1.95	2.24	25.87	49.77	24.36	9.11	59.58	31.31
Element B: Knowledge of current developmental science.	2.01	2.21	17.68	62.90	19.42	6.87	67.92	25.17
Element C: Knowledge of current research on instructional practices.	2.35	2.74	14.13	49.50	36.37	5.06	43.40	51.35
Element D: Integration and use of appropriate available technology.	1.91	2.11	26.76	53.13	20.12	14.90	62.47	22.12
Element E: High expectations for all students.	1.89	2.09	26.29	57.53	16.18	14.09	64.86	21.00
Element F: Opportunities to work in teams and develop leadership qualities.	2.31	2.51	12.32	53.24	34.44	4.75	52.82	42.39
Element G: Effective communication.	2.50	2.73	8.42	49.46	42.12	2.63	44.21	53.09
Element H: Appropriate assessment methods.	1.73	2.11	30.46	54.36	15.17	11.24	68.53	20.12
Standard IV: Teachers reflect on their practice.	2.52	2.87	14.13	35.95	49.92	4.79	30.35	64.79
Element A: Use of student learning analyses to improve practice.	2.58	2.95	10.66	44.56	44.79	3.32	36.87	59.73
Element B: Professional growth linked to goals.	2.33	2.71	25.37	22.78	51.85	10.66	26.29	62.97
Element C: Response to complex, dynamic environment.	2.62	2.91	15.75	31.97	52.28	8.30	28.96	62.59
Standard V: Teachers demonstrate leadership.	2.43	2.79	12.16	41.27	46.56	2.97	29.42	67.57
Element A: Leadership in schools.	2.59	2.93	13.09	31.35	55.56	4.17	26.72	69.07
Element B: Contributions to teaching profession.	1.75	2.06	47.72	24.44	27.84	34.71	30.58	34.67
Element C: Advocacy for students.	1.78	2.25	33.01	44.44	22.55	12.20	55.91	31.70
Element D: Ethical standards.	3.12	3.43	3.28	18.76	77.95	0.69	10.89	88.22

A final set of relational analyses were conducted to examine the correlation between the ratings subjects assigned to themselves on each element and those assigned to them by their evaluators. The correlations presented here measure whether the evaluator ratings and self-assessment ratings are in the same rank order. They do not measure there is a match between pairs of ratings. Correlations

ranged from 0.34 to 0.50. These correlations are generally moderate to strong, an indication that in spite of the statistically significant differences between self-assessment ratings and evaluator ratings, the two sets of ratings are positively related.

Exhibit 33. Correlation of Self-Ratings to Overall Professional Practice Ratings(Evaluator Ratings)

Standards and Elements	Correlation
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	**0 .42***
Element A: Aligned instruction.	0.44*
Element B: Literacy development.	0.40*
Element C: Math development.	0.50*
Element D: Specific content.	0.42*
Element E: Interconnected of content areas/disciplines.	0.46*
Element F: Relevant instruction and content.	0.47*
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	**0.43***
Element A: Predictable and nurturing learning environment.	0.47*
Element B: Commitment to and respect for diversity.	0.43*
Element C: Engagement of students as individuals.	0.44*
Element D: Adaptation of teaching to benefit all students.	0.47*
Element E: Proactive, clear and constructive feedback.	0.48*
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	0.48*
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	**0.43***
Element A: Knowledge of current developmental science.	0.42*
Element B: Knowledge of current developmental science.	0.39*
Element C: Knowledge of current research on instructional practices.	0.49*
Element D: Integration and use of appropriate available technology.	0.49*
Element E: High expectations for all students.	0.39*
Element F: Opportunities to work in teams and develop leadership qualities.	0.48*
Element G: Effective communication.	0.46*
Element H: Appropriate assessment methods.	0.41*
Standard IV: Teachers reflect on their practice.	**0.44***
Element A: Use of student learning analyses to improve practice.	0.45*
Element B: Professional growth linked to goals.	0.46*
Element C: Response to complex, dynamic environment.	0.43*
Standard V: Teachers demonstrate leadership.	**0.45***
Element A: Leadership in schools.	0.49*
Element B: Contributions to teaching profession.	0.48*
Element C: Advocacy for students.	0.47*
Element D: Ethical standards.	0.34*

*p<0.01

Cronbach's alpha scores (*Exhibit 34*) for teachers' self-assessment of their performance at the standard level range from 0.74 for Standard IV to 0.84 for Standard I. Across all five (5) standards, the alpha is 0.89. It is also important that the individual element ratings produce internally consistent measures. Across all 27 elements, Cronbach's alpha for the self-assessments is 0.95, a strong reliability coefficient.

Exhibit 34. *Cronbach's Alpha for Self-Assessments of Performance*

Standards	Cronbach's Alpha	Item N
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	0.84	6
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	0.83	6
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	0.87	8
Standard IV: Teachers reflect on their practice.	0.74	3
Standard V: Teachers demonstrate leadership.	0.75	4
Overall, Across All Standards	**0.89**	**5**
Overall, Across All Elements	**0.95**	**27**

In summary, teachers and their evaluators differed in their ratings of professional practice. Teachers rated themselves lower than their evaluators rated them on all standards and all elements. The magnitude of these differences still resulted in moderate and strong correlations between the two sets of ratings. While the ratings levels were quite different between the teachers and their evaluators, the reliability of their scores is quite similar. The Cronbach's alpha coefficient across all standards for self-assessment ratings is .0.89, compared to the .86 Cronbach's alpha for evaluator ratings of the same group. All of the alphas are at or above the 0.7 level recommended by Nunnally (1978) and 0.8 level recommended by researchers in more recent literature. (Gilem and Gilem, 2003; George and Mallery, 2003).

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Summary

Historically, validity studies have relied on either empirical or logical evidence. That is no longer the case. The *Standards for Educational and Psychological Testing*(2014) and Shepard (2012) make clear that, *"validity evaluations must include both logical and empirical evidence."* This study includes empirical information organized around a set of questions related to how well the ratings conform to expectations. In addition, logical explanations include discussions of the reasonableness of results as well as typical anecdotal evidence reported by field-based practitioners as well as CDE staff members. The two types of evidence combine to form the argument for understanding professional practice ratings.

The study sample mirrored the state with respect to the locale of the school. The largest percentage of teachers in the sample came from rural areas followed by towns, suburbs and then cities. For other demographic characteristics, where differences were found, the proportion of the sample represented by each subgroup of the sample was similar to that found in the state as a whole. The typical sample teacher is a white female who has not earned an advanced degree and who works in a rural elementary school that is not served by Title I. The school is in an accredited district and is required to submit a performance plan rather than an improvement, priority improvement or turnaround plan to CDE. While the sample provides variation and differing contexts to explore contextual issues in the use of the professional practice ratings, the collection of districts is similar to the state population on the key characteristics examined by this study.

The distribution of ratings provided by evaluators for overall performance, standards and elements suggests that the rating scale allows for discrimination between and among varying performance levels. In all instances, the proportion of teachers rated basic and partially proficient was larger for element ratings than for standards. This is also true for the overall professional practice rating on which fewer than 3% of the teachers were rated basic or partially proficient.

The distribution of professional practice ratings indicates that evaluators use the full range of ratings, particularly at the element level. The largest proportion of ratings clusters at the proficient and accomplished levels. As the system stabilizes over time, it would seem reasonable to expect that more basic, partially proficient and exemplary ratings will be in evidence primarily due to the deepening knowledge about the rigor of professional practices and what is expected of them in order to demonstrate proficiency on each.

Just over 35% of the teachers in the sample increased their overall ratings by at least one level between 2012-13 and 2013-14 while 11.21% of the sample experienced at least one rating level reduction. This statistic should be tracked by CDE because fluctuations in ratings may negatively impact perceptions of the credibility of the ratings and impact the validity argument. In addition, analyses indicate that only a single teacher of the 3,258 received an exemplary rating on all 27 elements. This would seem to indicate that even the highest performers have practices on which they can improve.

Ratings distributions vary between subgroups of teachers. For the set of group comparisons, 33.58% of the differences between means were found to be statistically significant. Many of those differences were in the range of 0.10 points or less.

Standardized group means (Cohen's d) and their associated confidence intervals further indicated that there is no real difference between some of the non-standardized differences identified as statistically significant. Following this analysis, a total of 496 (30%) differences out of 1,650 were found to be greater than 0.10, to be statistically significant, and to not have zero in the confidence interval for the standardized means.

These results indicate that CDE has work to do in the future in terms of monitoring results annually to determine whether the differences between groups are growing smaller as the system matures and stabilizes. It they do not, then decisions must be made regarding the reasons for such differences and whether changes to system should be made. The impact of these changes should also be carefully monitored in order to isolate the causes of any changes in results.

Correlations between standards range from 0.36 to 0.52, and between elements and the standards with which they are associated range from 0.47 to 0.81, indicating that the elements within each standard contribute to the overall measurement of the standard, but that each element measures something unique about the standard. Similarly, standard ratings indicate that each standard contributes to the measurement of teacher professional practice but each also contributes something unique to the measurement. These results are a good indication that the rubric is measuring a single construct, teacher professional practice, and that the measurement of all of the standards and associated elements is needed to gain a complete picture of the construct.

Cronbach's alpha scores indicate that the internal consistency, or reliability, is within the recommended range. The possible exception to this is the 0.94 alpha across all elements. As a general rule, alphas larger than 0.90 may be an indication of redundancy in the content of the measurement instrument. An exception to that rule is when there is a large number of items contributing to the alpha calculation. In this case, the 27 elements, considered to be quite large, contributed to the alpha calculation and therefore may be responsible for the high alpha value.

Self-assessment ratings for all standards and all associated elements differed from those of evaluators. Teachers rated themselves lower than their evaluators rated them on all standards and all elements. Correlations between standards and their associated elements are lower than those for evaluator ratings. In terms of reliability, Cronbach's alpha for self-assessment across all elements is 0.87 compared to 0.94 for evaluator ratings.

Limitations of this Study

While it is important to assess validity through this first look at professional practice ratings, it is insufficient to make definitive statements regarding whether overall professional practice ratings are valid for the purposes outlined in S. B. 10-191. Much depends on how districts implement the system and the decisions they make based on the collections of ratings for teachers. It was not possible at this stage of the implementation process to assess the status

of the following issues and questions that should be addressed in order to move from a baseline examination to a more definitive validity judgment.

1. Implementation fidelity in general has not been examined by CDE through a comprehensive study designed to pinpoint persistent problems associated with fidelity of implementation such as how evaluators were trained, evaluators' understanding of the rubric and how closely the process was followed. This presents a serious limitation, as the myriad issues associated with fidelity have the potential to individually and collectively impact validity.

Fidelity of implementation is a complex issue that requires the collection, analysis and interpretation of larger amounts of data than the sample districts agreed to provide. Studying implementation fidelity also requires a great deal of time and other resources, which can make such studies cost prohibitive.

For these reasons and others, at this time, CDE has chosen to use data already being collected from school districts such as the TELL survey, a variety of feedback strategies, approved trainings, the Colorado Performance Management System, ELEVATE, and studies conducted by external organizations to measure different aspects of implementation fidelity. Through these initiatives as well as others, a clearer picture of implementation fidelity is emerging. Additional work in this area is needed in order to thoroughly understand whether school districts and schools are implementing the system as described in the *User's Guide for the Educator Evaluation System*.

2. Analysis of multi-year data proved problematic during this study. This is primarily due to the fact that, as a result of feedback from the field, the rubric changed significantly between the 2012-13 and 2013-14 school years, impacting the year-to-year analyses.

3. Since 2013-14 was the first year in which ratings have a bearing on decisions regarding non-probationary status, teachers reported being nervous about how they would measure up and whether their non-probationary status was "safe." Such a high level of concern can have an impact on ratings.

Recommendations for Further Study

CDE would be well-advised to continue the study of the state model system through a number of activities that should be conducted annually as well as with more intensive periodic reviews of ratings validity. Recommendations for additional study include:

- The analyses presented in this report should be repeated for data collected during the 2015-16 school year, the last year for which pilot site/sample data will be available under existing Memoranda of Understanding. 2015-16 is also the first year when ratings will be totally comparable for two (2) consecutive years because CDE will not change the rubric between 2014-15 and 2015-16.

- Some of the data included in this report should be monitored each year to determine whether changes that represent validity threats have occurred. This is particularly true

for group differences, which are a concern because some of them appear to be educationally important in addition to being statistically significant. CDE should continue its ongoing scrutiny of evaluation results to identify potential sources of bias.

- Consider negotiating an extension to existing Memoranda of Understanding and obtaining additional districts willing to submit data for the purpose of continuously monitoring the system. Comparing current pilot and integration sites to districts that did not officially participate in the state model system until 2013-14 will provide valuable decision making information regarding:
  - Necessary system changes.
  - Impact of the system on districts and their educators.
  - Whether additional time and training may help to moderate fluctuations in ratings.
  - Differences in system implementation and teacher ratings between early adopting pilot and integration sites and the districts who delayed implementation until they were required to do so.

- Conduct future analyses using statewide data to the extent possible. This will eliminate the problem of some districts believing that the results don't necessarily apply to them and, more importantly, will eliminate any error associated with sampling.

- Continue to expand and enhance the discussion of implementation fidelity through an examination of additional data as well as the inclusion of additional external studies as they are completed in order to learn about how educators across the state honor established processes.

- Conduct an examination of inter-rater agreement to determine the consistency of evaluator ratings with those of highly trained master scorers who created a set of training videos to help evaluators monitor their accuracy in completing the rubric during teacher observations. Such an examination could be conducted using information gathered through ELEVATE, an online training program available to educators across the state.

- As the state model system stabilizes and no changes to the rubric or evaluation processes are made for a number of consecutive years, a second in-depth validity study should be conducted.

- Schedule additional studies periodically for the foreseeable future so validity can be checked as contexts, schools, and priorities change. It is generally agreed that the validity of a set of ratings is not static over time, so repeated looks at validity are in order as situations change.

- When scores for measures of student learning (MSLs) are available, expand the discussion of validity to include both MSLs and teacher effectiveness ratings.

Unintended Outcomes of System Use

With systems as large and complex as the state model system, it is almost inevitable that unanticipated outcomes will be present. In the case of the state model system, several have proven to be enduring across the pilot test years and the first year of the statewide rollout.

Time. First and foremost, pilot sites have indicated that finding the time to complete all system requirements has proven challenging for them. CDE paid close attention to this issue and for the 2012-13 school year eliminated nearly 30% of the rubric content in order to make the process more manageable. Reports from the field indicate that while that step was quite helpful, adhering to the process is still time intensive. When asked which of the remaining items should be eliminated, both teachers and administrators have indicated that they would have difficulty eliminating any of the professional practices because they consider all of them to be important in demonstrating proficiency on the elements.

To help districts address the time issue, CDE has developed online data collection process that help to streamline the routine ratings calculations and the reporting process. In addition, some administrators have helped to design customized reports available to districts to aid in analyzing district data for the purpose of making decisions regarding professional development needs and areas of strength and weakness. CDE should continue to monitor usage of the online systems and to determine whether they are enough of a time saver that users are better able to manage the time required implement the system.

This issue may also be addressed through training of principals to reallocate their time in order to focus on the important workforce effectiveness issues revealed through the state model system. Principals from early adopted districts such as Austin, TX and Washington, DC have indicated that by prioritizing teacher growth and improvement, many of the routine issues such as discipline, tardiness, and absences have been minimized. They believe they are actually more efficient when they focus on the teachers, spend time in classrooms and in other locations where teachers may demonstrate their effectiveness.

Fidelity of Implementation. Monitoring fidelity of implementation is a complex and time-consuming process for CDE as well as the state's school districts. There are a number of implementation fidelity issues that have the potential to impact validity. One such issue is that some principals require more of teachers than is required by the state model system. An example of this is artifact collection, in which a principal may require all teachers to collect all artifacts listed in the user's guide as well as additional artifacts for elements that may not have been specifically addressed by the artifacts list. Such a practice, while not widespread, presents an untenable workload for teachers and keeps them from focusing on their professional goals and the needs of their students.

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Appendices

APPENDIX A: Pilot, Partner and Integration Sites for the Colorado State Model Educator Evaluation System

Appendix B: Frameworks for System to Evaluate Principals and Specialized Service Professionals

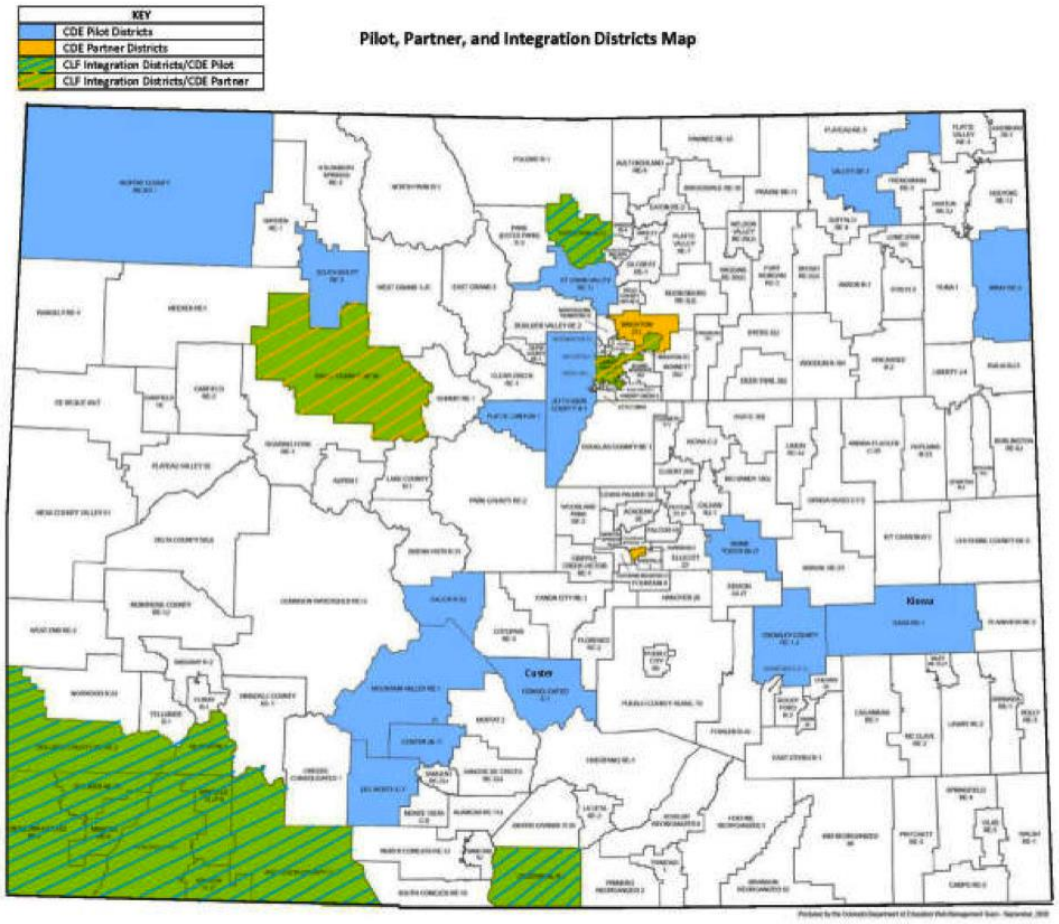
Appendix C: Key Components of the Colorado State Model Teacher Evaluation System: Definition of Teacher Effectiveness, Teacher Quality Standards and Rubric for Evaluating Colorado Teachers

Appendix D: Changes in Professional Practice Ratings Between 2012-13 and 2013-14

Appendix E: Comparisons of Overall Professional Practice Ratings by Group and Standards

Appendix F: Correlations Between Standards, Elements and Overall Professional Practice Ratings

APPENDIX A: Pilot, Partner and Integration Sites for the Colorado State Model Educator Evaluation System



What is a Pilot District?

Pilot districts were selected as part of CDE's work to implement S.B. 10-191. Districts are representative of the various sizes, student demographics and geographic differences across Colorado. These pilot districts are using the Colorado State Model Educator Evaluation System for both principals and teachers during the 2011-16 school years. They are providing valuable feedback on the quality of the model system, identifying challenges and strengths of the system and suggesting refinements to the implementation process developed by CDE.

What is a Partner District?

Several districts that have already developed performance evaluation systems reflecting key elements of Senate Bill 10-191 were selected to participate in the pilot process as Partner Districts. These districts are providing valuable information on the process for aligning existing educator evaluation systems to the rules developed by the State Board of Education, as well as providing an opportunity to enhance the State Model Educator Evaluation System with elements from locally-developed systems.

What is an Integration District?

Integration Districts were selected as part of a voluntary effort by the Colorado Legacy Foundation to support CDE's work to implement Senate Bill 10-191 as well as the Colorado Academic Standards pursuant to Senate Bill 08-212 (Colorado Achievement Plan for Kids). Four school districts and one BOCES were selected to specific activities that implement, in an integrated manner, *all* of the following:

- Colorado Academic Standards and aligned instructional materials to guide instruction
- Professional development in formative practices to inform instruction
- Regular performance evaluations that hold educators accountable for improvement on measures of student learning and provide them feedback to improve instruction

Districts Piloting the Colorado State Model Educator Evaluation System

Twenty-seven districts are piloting the Colorado Model Evaluation System. CDE has selected 19 pilot districts, based on a public application process, to test the state model of evaluation. The 19 districts are:

1. Center
2. Crowley
3. Custer
4. Del Norte
5. Eads
6. Jefferson County(principal only)
7. Miami-Yoder
8. Moffat
9. Mountain Valley
10. Platte Canyon
11. Salida
12. South Routt
13. St. Vrain
14. Wray
15. Valley RE-1.
16. Centennial School District
17. Eagle School District (principal only)
18. Thompson School District
19. San Juan BOCES (Archuleta, Bayfield, Durango, Dolores RE-2, Dolores RE-4, Ignacio, Mancos, Montezuma- Cortez and Silverton)

All of these efforts align and work together to help us learn and make necessary mid-course corrections during the pilot phase of the Colorado State Model Educator Evaluation System. Educator feedback from these pilot districts is informing improvements to the model system.

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Appendix B. Frameworks for System to Evaluate Teachers, Principals and Specialized Service Professionals

B-1. Framework for System to Evaluate Teachers

B-2. Framework for System to Evaluate Principals

B-3. Framework for System to Evaluate Specialized Service Professionals

Exhibit B-1. Framework for System to Evaluate Teachers

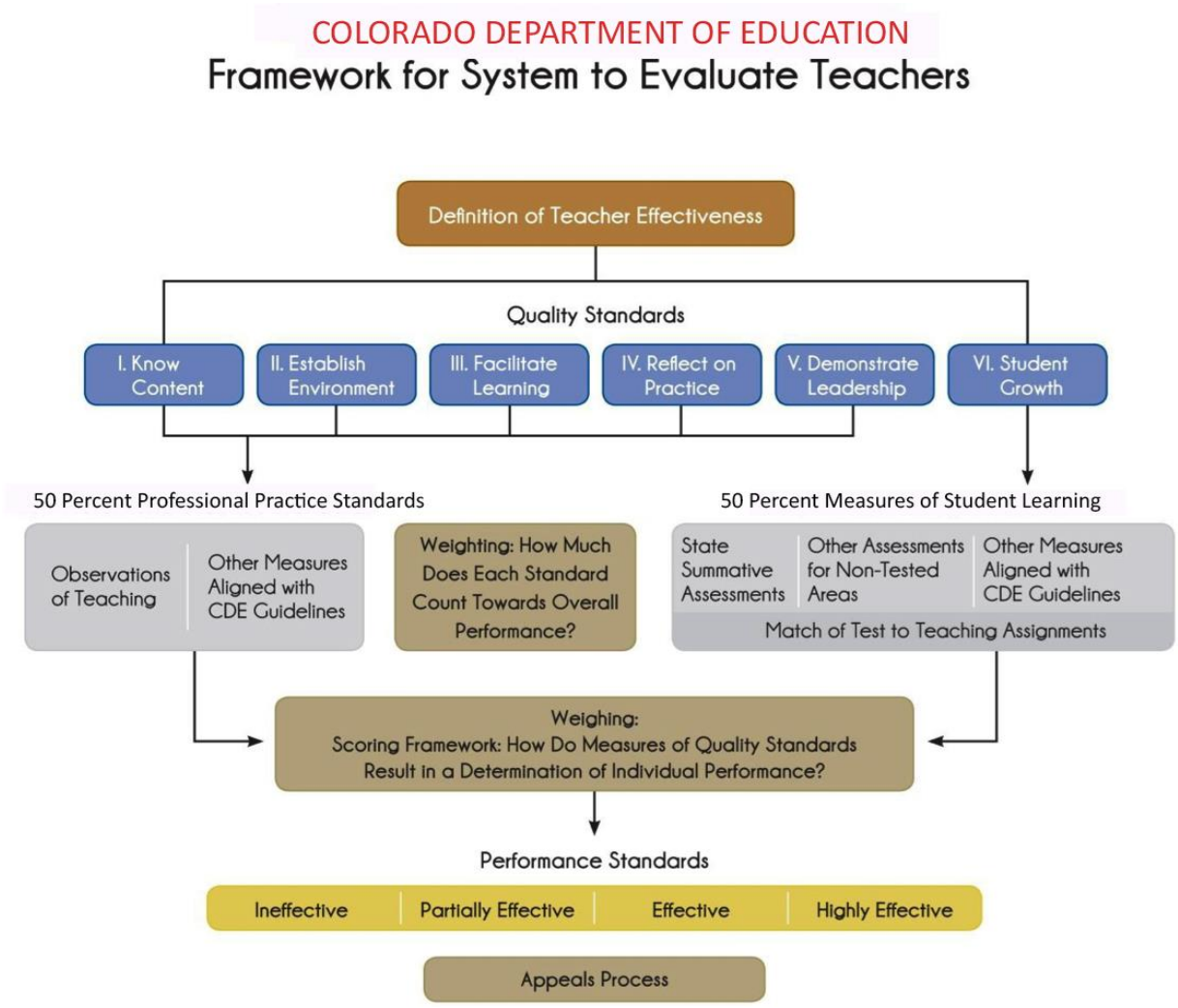


Exhibit B-2. Framework for System to Evaluate Principals

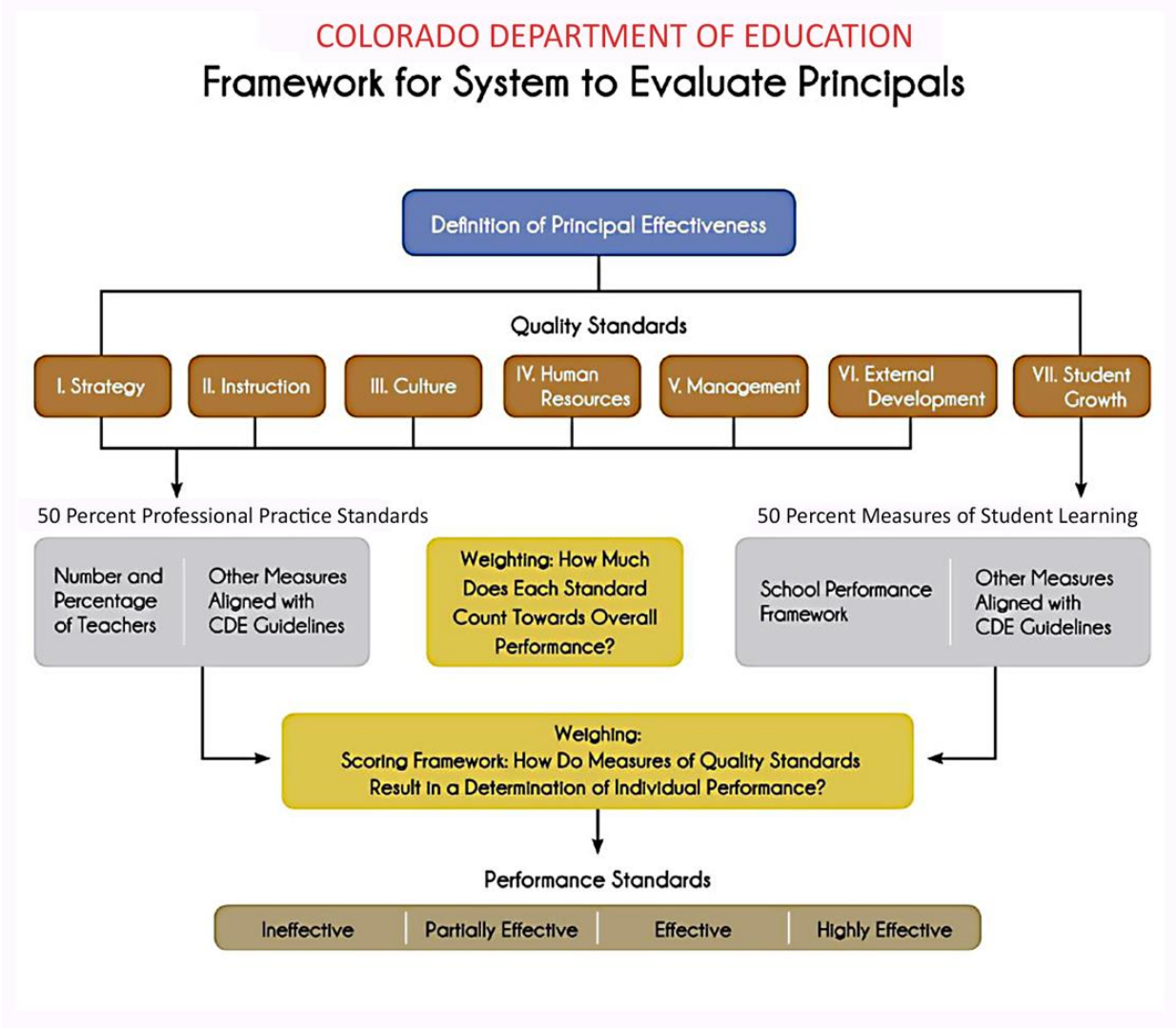
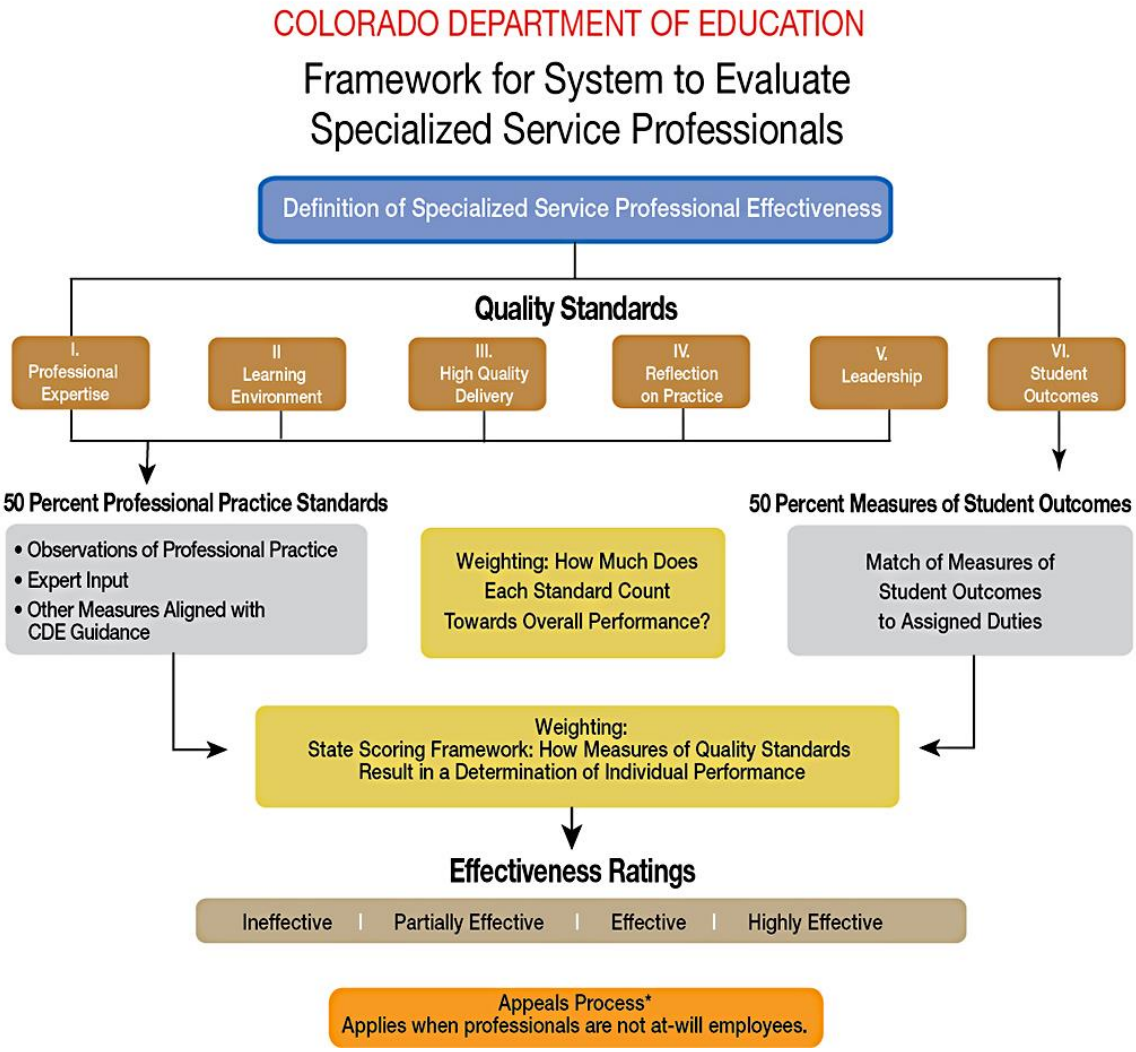


Exhibit B-3. Framework for System to Evaluate Specialized Service Professionals



Appendix C. Key Components of the Colorado State Model Teacher Evaluation System: Definition of Teacher Effectiveness, Teacher Quality Standards and Rubric for Evaluating Colorado Teachers

Exhibit C-1. Definition of Teacher Effectiveness

Exhibit C-2. Teacher Quality Standards

Exhibit C-3. Rubric for Evaluating Colorado Teachers

Exhibit C-1. Definition of Teacher Effectiveness

Effective teachers in the state of Colorado have the knowledge, skills and commitments needed to provide excellent and equitable learning opportunities and growth for all students. They strive to support growth and development, close achievement gaps and to prepare diverse student populations for postsecondary and workforce success (See Appendix E). Effective teachers facilitate mastery of content and skill development and employ and adjust evidence-based strategies and approaches for students who are not achieving mastery and students who need acceleration. They also develop in students the skills, interests and abilities necessary to be lifelong learners, as well as for democratic and civic participation. Effective teachers communicate high expectations to students and their families and utilize diverse strategies to engage them in a mutually supportive teaching and learning environment. Because effective teachers understand that the work of ensuring meaningful learning opportunities for all students cannot happen in isolation, they engage in collaboration, continuous reflection, on-going learning and leadership within the profession.

Exhibit C-2. Teacher Quality Standards

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach.

The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

ELEMENT A: Teachers provide instruction that is aligned with the Colorado Academic Standards; their district's organized plan of instruction; and the individual needs of their students.

ELEMENT B: Teachers demonstrate knowledge of student literacy development in reading, writing, speaking and listening.

ELEMENT C: Teachers demonstrate knowledge of mathematics and understand how to promote student development in numbers and operations, algebra, geometry and measurement and data analysis and probability.

ELEMENT D: Teachers demonstrate knowledge of the content, central concepts, tools of inquiry, appropriate evidence-based instructional practices and specialized character of the disciplines being taught.

ELEMENT E: Teachers develop lessons that reflect the interconnectedness of content areas/disciplines.

ELEMENT F: Teachers make instruction and content relevant to students and take actions to connect students' background and contextual knowledge with new information being taught.

QUALITY STANDARD II

Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.

ELEMENT A: Teachers foster a predictable learning environment in the classroom in which each student has a positive, nurturing relationship with caring adults and peers.

ELEMENT B: Teachers demonstrate a commitment to and respect for diversity, while working toward common goals as a community and as a country.

ELEMENT C: Teachers engage students as individuals with unique interests and strengths.

ELEMENT D: Teachers adapt their teaching for the benefit of all students, including those with special needs, across a range of ability levels.

ELEMENT E: Teachers provide proactive, clear and constructive feedback to families about student progress and work collaboratively with the families and significant adults in the lives of their students.

ELEMENT F: Teachers create a learning environment characterized by acceptable student behavior, efficient use of time and appropriate intervention strategies.

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

ELEMENT A: Teachers demonstrate knowledge of current developmental science, the ways in which learning takes place and the appropriate levels of intellectual, social and emotional development of their students.

ELEMENT B: Teachers plan and consistently deliver instruction that draws on results of student assessments, is aligned to academic standards and advances students' level of content knowledge and skills.

ELEMENT C: Teachers demonstrate a rich knowledge of current research on effective instructional practices to meet the developmental and academic needs of their students.

ELEMENT D: Teachers thoughtfully integrate and utilize appropriate available technology in their instruction to maximize student learning.

ELEMENT E: Teachers establish and communicate high expectations for all students and plan instruction that helps students develop critical-thinking and problem solving skills.

ELEMENT F: Teachers provide students with opportunities to work in teams and develop leadership qualities.

ELEMENT G: Teachers communicate effectively, making learning objectives clear and providing appropriate models of language.

ELEMENT H: Teachers use appropriate methods to assess what each student has learned, including formal and informal assessments and use results to plan further instruction.

QUALITY STANDARD IV

Teachers reflect on their practice.

ELEMENT A: Teachers demonstrate that they analyze student learning, development and growth and apply what they learn to improve their practice.

ELEMENT B: Teachers link professional growth to their professional goals.

ELEMENT C: Teachers are able to respond to a complex, dynamic environment.

QUALITY STANDARD V

Teachers demonstrate leadership.

ELEMENT A: Teachers demonstrate leadership in their schools.

ELEMENT B: Teachers contribute knowledge and skills to educational practices and the teaching profession.

ELEMENT C: Teachers advocate for schools and students, partnering with students, families and communities as appropriate.

ELEMENT D: Teachers demonstrate high ethical standards.

QUALITY STANDARD VI

Teachers take responsibility for student academic growth.

ELEMENT A: Teachers demonstrate high levels of student learning, growth and academic achievement.

ELEMENT B: Teachers demonstrate high levels of student academic growth in the skills necessary for postsecondary and workforce readiness (See Appendix B), including democratic and civic participation. Teachers demonstrate their ability to utilize multiple data sources and evidence to evaluate their practice and make adjustments where needed to continually improve attainment of student academic growth.

Exhibit C-3. Rubric for Evaluating Colorado Teachers

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State	Accomplished	Exemplary
ELEMENT A: Teachers provide instruction that is aligned with the Colorado Academic Standards; their district's organized plan of instruction; and the individual needs of their students.				
THE TEACHER ***uses lesson plans that reflect:*** ○ ***Opportunities to review prior learning.*** ○ ***Instructional objectives appropriate for students.*** ○ ***Connections to specific learning objectives and approved curriculum.***	. . . and **THE TEACHER** ***implements lesson plans based on:*** ○ ***Student needs.*** ○ ***Colorado Academic Standards.*** ○ ***District's plan of instruction.***	. . . and **THE TEACHER:** ☐ Collaborates with other school staff to vertically and horizontally align, articulate and deliver the approved curriculum.	. . . and **STUDENTS:** ○ ***Interact with the rigorous and challenging content.*** ○ ***Perform at a level consistent with or above expectations.***	. . . and **STUDENTS:** ○ ***Discuss strengths and next steps regarding their learning with their teacher(s).***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT B: Teachers demonstrate knowledge of student literacy development in reading, writing, speaking and listening.				
This section describes professional practices that should be demonstrated by **ALL TEACHERS,** *regardless of grade level or subject taught.*				
THE TEACHER: ○ ***Demonstrates an understanding of literacy content and skills.***	. . . and **THE TEACHER** ***makes complex reading accessible to students by:*** ○ ***Adjusting content to students' skill levels.*** ○ ***Integrating literacy skills and knowledge into lessons.*** ○ ***Providing relevant content that addresses students' interests.***	. . . and **THE TEACHER** ***provides instructional support that enhances students':*** ○ ***Critical thinking and reasoning.*** ○ ***Information literacy.*** ○ ***Literacy skill development.***	. . . and **STUDENTS** ***meet or exceed expectations for:*** ○ ***Oral communication.*** ○ ***Written communication.*** ○ ***Critical thinking.*** ○ ***Problem solving skills.*** ○ ***Literacy skills.***	. . . and **STUDENTS:** ○ ***Apply literacy skills to understand complex materials.***
ELEMENT B: Teachers demonstrate knowledge of student literacy development in reading, writing, speaking and listening.				
This section describes professional practices that should be demonstrated by **ELEMENTARY TEACHERS** *responsible for teaching language arts and/or reading.*				
THE TEACHER: ○ ***Integrates literacy connections into lessons regardless of content being taught.***	. . . and **THE TEACHER** ***integrates literacy skills into lessons and assignments, including:*** ○ ***Phonological awareness.*** ○ ***Phonics.*** ○ ***Vocabulary.*** ○ ***Comprehension.*** ○ ***Fluency.*** ○ ***Writing.*** ○ ***Speaking.*** ○ ***Listening skills.*** ***Engages students in instruction that is:*** ○ ***Purposeful.*** ○ ***Explicit.*** ○ ***Systematic.***	. . . and **THE TEACHER** ***provides literacy instruction that is:*** ○ ***Needs-based.*** ○ ***Intensive.*** ○ ***Of sufficient duration to accelerate learning.***	. . . and **STUDENTS** ***apply literacy skills (reading, writing, speaking and listening):*** ○ ***To new/unfamiliar material.*** ○ ***While communicating during unstructured time.***	. . . and **STUDENTS** ***exceed teacher's expectations for students of their age, grade, and/or ability levels in:*** ○ ***Reading.*** ○ ***Writing.*** ○ ***Speaking.*** ○ ***Listening.***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT B: Teachers demonstrate knowledge of student literacy development in reading, writing, speaking and listening.				
This section describes professional practices that should be demonstrated by **SECONDARY TEACHERS** *responsible for teaching English, language arts and/or reading.*				
THE TEACHER: ○ ***Teaches and provides opportunities for students to apply literacy skills.***	. . . and **THE TEACHER** ***integrates literacy skills into lessons, including:*** ○ ***Vocabulary.*** ○ ***Comprehension.*** ○ ***Fluency.*** ○ ***Writing.*** ○ ***Speaking.*** ○ ***Listening skills.*** ***Engages students in instruction that is:*** ○ ***Purposeful.*** ○ ***Explicit.*** ○ ***Systematic.***	. . . and **THE TEACHER** ***provides literacy instruction that is:*** ○ ***Needs-based.*** ○ ***Intensive.*** ○ ***Of sufficient duration to accelerate learning.***	. . . and **STUDENTS** ***apply literacy skills (reading, writing, speaking and listening):*** ○ ***To new/unfamiliar material.*** ○ ***While communicating during the school day.***	. . . and **STUDENTS** ***exceed teacher's expectations for students of their age, grade, and/or ability level in:*** ○ ***Reading.*** ○ ***Writing.*** ○ ***Speaking.*** ○ ***Listening.***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT C: Teachers demonstrate knowledge of mathematics and understand how to promote student development in numbers and operations, algebra, geometry and measurement and data analysis and probability.				
This section describes professional practices that should be demonstrated by **ALL TEACHERS**, *regardless of grade level or subject taught.*				
THE TEACHER: ○ ***Encourages students to make math connections across content.***	. . . and **THE TEACHER:** ○ ***Emphasizes to students why they need to learn math content and skills.*** ○ ***Uses instructional strategies that require students to apply and transfer mathematical knowledge to different content areas.***	. . . and **THE TEACHER:** ○ ***Emphasizes interdisciplinary connections to math.***	. . . and **STUDENTS:** ○ ***Share ideas and solutions to challenging problems.*** ○ ***Use the language of math to talk about what they are doing.***	. . . and **STUDENTS:** ○ ***Interpret mathematical information in ways that make it relevant to their learning.***
ELEMENT C: Teachers demonstrate knowledge of mathematics and understand how to promote student development in numbers and operations, algebra, geometry and measurement and data analysis and probability.				
This section describes professional practices that should be demonstrated by **TEACHERS** *responsible for teaching math.*				
THE TEACHER ***focuses math instruction beyond:*** ○ ***Recall of facts.*** ○ ***Development of computational skills.*** ○ ***Math as a series of rote procedures.*** ***Models:*** ○ ***Appropriate mathematical communication.*** ○ ***A variety of mathematical practices.***	. . . and **THE TEACHER** ***presents concepts:*** ○ ***In sequence.*** ○ ***In a manner appropriate to students' age and grade.*** ○ ***Helps students understand mathematics as a discipline.*** ○ ***Provides a balance of teaching for conceptual understanding and teaching for procedural fluency.*** ○ ***Models mathematical thinking.***	. . . and **THE TEACHER** ***establishes an effective mathematics environment by:*** ○ ***Challenging students to think deeply about the problems.*** ○ ***Requiring students to explain their solutions.*** ○ ***Posing questions that stimulate students' curiosity and encourage them to investigate further.*** ○ ***Actively engaging students in doing math.*** ○ ***Using real-world examples for problems whenever possible.***	. . . and **STUDENTS:** ○ ***Solve problems in a variety of ways.*** ○ ***Demonstrate mathematical thinking by explaining their thinking to each other and to their teacher.***	. . . and **STUDENTS:** ○ ***Recognize when they make procedural errors and take steps to correct them.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT D: Teachers demonstrate knowledge of the content, central concepts, tools of inquiry, appropriate evidence-based instructional practices and specialized character of the disciplines being taught.				
THE TEACHER: ○ ***Breaks down concepts into instructional parts and teaches each part using appropriate, effective strategies and/or tools.*** ○ ***Uses instructional materials that are accurate and appropriate for the lesson being taught.*** ○ ***Employs a variety of instructional strategies to address student needs.***	. . . and **THE TEACHER** ***provides explanations of content that are:*** ○ ***Accurate.*** ○ ***Clear.*** ○ ***Concise.*** ○ ***Comprehensive.***	. . . and **THE TEACHER** ***engages students in:*** ○ ***A variety of explanations and multiple representations of concepts and ideas.*** ○ ***A variety of inquiry methods to explore new ideas and theories.***	. . . and **STUDENTS:** ○ ***Develop a variety of explanations and multiple representations of concepts.*** ○ ***Build on the skills and knowledge learned in the classroom to engage in more complex concepts, ideas and theories.*** ***Use a variety of inquiry tools and strategies to:*** ○ ***Learn content.*** ○ ***Understand central concepts.*** ○ ***Answer complex questions.*** ○ ***Problem solve.***	. . . and **STUDENTS** ***routinely:*** ○ ***Choose challenging tasks and instructional materials.*** ○ ***Apply newly learned content skills to unique situations and different disciplines.*** ○ ***Discuss ideas and content that are intellectually challenging to them.***
ELEMENT E: Teachers develop lessons that reflect the interconnectedness of content areas/disciplines.				
THE TEACHER: ○ ***Emphasizes key concepts and connects them to other powerful ideas within the content area.*** ○ ***Connects lessons to other disciplines and/or content areas.***	. . . and **THE TEACHER** ***implements instructional strategies to ensure that instruction:*** ○ ***Articulates content and interdisciplinary connections.*** ○ ***Integrates literacy skills across content areas.***	. . . and **THE TEACHER:** ○ ***Clarifies and elaborates on interdisciplinary connections for students.*** ○ ***Employs instructional strategies that include literacy, numeracy and language development across content areas.***	. . . and **STUDENTS:** ○ ***Make connections between other disciplines and/or content areas and the current lesson.*** ○ ***Apply literacy skills across academic content areas.*** ○ ***Apply math skills across academic content areas.***	. . . and **STUDENTS:** ○ ***Accelerate their learning by elaborating on current lesson with connections to prior lessons within the content area and/or with other disciplines.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT F: Teachers make instruction and content relevant to students and take actions to connect students' background and contextual knowledge with new information being taught.				
THE TEACHER ***selects instructional materials and strategies based on their:*** ○ ***Relevance to students.*** ○ ***Central contexts.*** ○ ***Foundational evidence base.*** ○ ***Links lessons to students' prior knowledge.*** ○ ***Encourages and provides opportunities for students to make connections to prior learning.***	. . . and **THE TEACHER** ***delivers lessons and units and uses instructional strategies that:*** ○ ***Help students connect to their learning by linking the current lesson with prior knowledge, experiences, and/or cultural contexts.*** ○ ***Provide supports that facilitate engagement.***	. . . and **THE TEACHER:** ○ ***Delivers lessons and uses materials to ensure that students' backgrounds and contextual knowledge are considered.*** ○ ***Provides opportunities for students to self-select tasks that accelerate their learning.***	. . . and **STUDENTS:** ○ ***Interact with materials that are relevant to them.*** ○ ***Ask questions and solve problems that are relevant to them.*** ○ ***Make connections to prior learning to understand current content.***	. . . and **STUDENTS:** ○ ***Select tasks that demonstrate transfer of knowledge to other theories, ideas, and/or content.***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				

Evaluator Comments: *(Required for Ratings of "Basic" or "Partially Proficient" and recommended for all rating levels.)*	*Comments of Person Being Evaluated:* *(Please indicate the element for which the comment applies if not for the standard as a whole.)*

QUALITY STANDARD II

Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT A: Teachers foster a predictable learning environment in the classroom in which each student has a positive, nurturing relationship with caring adults and peers.				
THE TEACHER *creates a classroom environment that facilitates:* ○ *Mutual respect.* ○ *Positive relationships between and among students.* ○ *Empathy for each student.*	. . . and **THE TEACHER:** ○ *Creates a classroom environment conducive to learning.*	. . . and **THE TEACHER:** ○ *Creates a classroom environment which values diverse perspectives.* ○ *Establishes a nurturing and caring relationship with each student.*	. . . and **STUDENTS:** ○ *Respect their classmates and teacher(s).*	. . . and **STUDENTS'** *interactions with their teacher(s) and each other:* ○ *Are respectful.* ○ *Demonstrate mutual support.*
ELEMENT B: Teachers demonstrate a commitment to and respect for diversity, while working toward common goals as a community and as a country.				
THE TEACHER: ○ *Creates a classroom environment in which diversity is used to further student learning.*	. . . and **THE TEACHER:** ○ *Uses instructional approaches and materials that reflect diverse backgrounds and experiences.* ○ *Acknowledges the value of each student's contributions to the quality of lessons.* ○ *Is welcoming to diverse family structures.*	. . . and **THE TEACHER** *establishes processes that result in:* ○ *A sense of community among students.* ○ *Effective interactions among students.* ○ *Respect for individual differences.* ○ *Positive social relationships.* ○ *Common goals for all students.*	. . . and **STUDENTS:** ○ *Respect the uniqueness of fellow students.*	. . . and **STUDENTS:** ○ *Seek a variety of perspectives to complete group assignments.*

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD II

Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT C: Teachers engage students as individuals with unique interests and strengths.				
THE TEACHER: ○ ***Implements lessons that reflect student interests.***	. . . and **THE TEACHER:** ○ ***Encourages students to expand and enhance their learning.*** ○ ***Acknowledges students for their accomplishments.***	. . . and **THE TEACHER:** ○ ***Asks appropriately challenging questions of all students.*** ○ ***Scaffolds questions.*** ○ ***Gives wait time equitably.*** ○ ***Ensures that all students participate in class activities.***	. . . and **STUDENTS:** ○ ***Actively engage in classroom activities.*** ○ ***Discuss content and make connections between current lesson and their interests.***	. . . and **STUDENTS:** ○ ***Encourage fellow students to participate and challenge themselves.*** ○ ***Engage in collaborative learning and group processes.***
ELEMENT D: Teachers adapt their teaching for the benefit of all students, including those with special needs, across a range of ability levels.				
THE TEACHER: ○ ***Adapts learning environment to address individual student needs.***	. . . and **THE TEACHER:** ☐ Designs instruction to address learning needs of all students. ○ ***Monitors the quality of student participation and performance.*** ○ ***Implements recommendations of specialists and colleagues to address student needs.***	. . . and **THE TEACHER:** ☐ Solicits additional input from colleagues to better understand students' learning needs. ○ ***Challenges and supports students to learn to their greatest ability.***	. . . and **STUDENTS** ***advocate for themselves by:*** ○ ***Articulating their learning needs to their teacher and/or parent.*** ○ ***Communicating freely and openly with teachers about circumstances that affect their classroom performance.***	. . . and **STUDENTS:** ○ ***Apply coping skills such as self-reflection, self-regulation and persistence to classroom situations.*** ○ ***Help fellow classmates by offering support.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD II

Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT E: Teachers provide proactive, clear and constructive feedback to families about student progress and work collaboratively with the families and significant adults in the lives of their students.				
THE TEACHER: ○ ***Establishes a classroom environment that is inviting to families and significant adults.***	. . . and **THE TEACHER:** ○ ***Maintains respectful relationships with students, their families, and/or significant adults.*** ☐ Uses a variety of methods to initiate communication with families and significant adults.	. . . and **THE TEACHER:** ☐ Provides clear and accurate feedback to parents and significant adults regarding student needs and progress. ☐ Coordinates flow of information between families and colleagues who provide student services.	. . . and **FAMILIES AND SIGNIFICANT ADULTS:** ☐ Discuss student performance with the teacher. ☐ Participate in school-based activities.	. . . and **FAMILIES AND SIGNIFICANT ADULTS:** ☐ Partner with the teacher to support student strengths and address next steps for learning.
ELEMENT F: Teachers create a learning environment characterized by acceptable student behavior, efficient use of time and appropriate intervention strategies.				
THE TEACHER: ○ ***Provides clear expectations to guide student classroom behavior.*** ○ ***Holds students accountable for adherence to school and/or class rules.***	. . . and **THE TEACHER:** ○ ***Puts procedures in place to maximize instructional time.***	. . . and **THE TEACHER:** ○ ***Makes maximum use of instructional time.*** ○ ***Maintains a safe and orderly environment.***	. . . and **STUDENTS:** ○ ***Stay on task during class periods.*** ○ ***Abide by school and class rules.***	. . . and **STUDENTS:** ○ ***Accept responsibility for their behavior and use of time.*** ○ ***Help other students stay on task.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

Evaluator Comments: *(Required for Ratings of "Basic" or "Partially Proficient" and recommended for all rating levels.)*	*Comments of Person Being Evaluated:* *(Please indicate the element for which the comment applies if not for the standard as a whole.)*

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT A: Teachers demonstrate knowledge of current developmental science, the ways in which learning takes place and the appropriate levels of intellectual, social and emotional development of their students.				
THE TEACHER: ○ ***Modifies content to assure that students are able to work at their ability levels.***	. . . and **THE TEACHER:** ☐ Studies recent/current research to expand personal knowledge of how students learn. ○ ***Builds on the interrelatedness of students' intellectual, social and emotional development.***	. . . and **THE TEACHER:** ☐ Collaborates with colleagues with expertise in developmental science to improve the quality of instruction. ○ ***Applies knowledge of current developmental science to address student needs.***	. . . and **STUDENTS:** ○ ***Seek materials and resources appropriate for their personal approach to learning.***	. . . and **STUDENTS** ***seek to understand:*** ○ ***How they learn best.*** ○ ***Where their time and efforts are best used.***
ELEMENT B: Teachers plan and consistently deliver instruction that draws on results of student assessments, is aligned to academic standards and advances students' level of content knowledge and skills.				
THE TEACHER: ☐ Uses assessment results to guide adjustments to instruction. ○ ***Has specific student outcomes in mind for each lesson.***	. . . and **THE TEACHER:** ○ ***Aligns instruction with academic standards and student assessment results.*** ○ ***Monitors instruction against student performance and makes real-time adjustments.*** ○ ***Assesses required skills.***	. . . and **THE TEACHER:** ○ ***Encourages students to take academic risks.*** ○ ***Makes sure students meet learning objectives while increasing mastery levels.***	. . . and **STUDENTS:** ○ ***Monitor their level of engagement.*** ○ ***Confer with the teacher to achieve learning objectives.***	. . . and **STUDENTS:** ○ ***Initiate activities to address their learning strengths and next steps.*** ○ ***Take academic risks.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT C: Teachers demonstrate a rich knowledge of current research on effective instructional practices to meet the developmental and academic needs of their students.				
THE TEACHER: ○ ***Incorporates evidence-based strategies into lessons.***	. . . and **THE TEACHER:** ☐ Makes connections between student data and research-based practices.	. . . and **THE TEACHER:** ○ ***Individualizes instructional approach to meet unique needs of each student.***	. . . and **STUDENTS:** ○ ***Embrace new and unique ways of learning as they are introduced through research-based lessons.***	. . . and **STUDENTS:** ○ ***Apply skills and knowledge learned in the classroom.***
ELEMENT D: Teachers thoughtfully integrate and utilize appropriate available technology in their instruction to maximize student learning.				
THE TEACHER: ○ ***Uses available technology to facilitate classroom instruction.***	. . . and **THE TEACHER:** ○ ***Employs strategies and procedures to ensure that students have equitable access to available technology.*** ○ ***Monitors the use of available technology in the classroom.***	. . . and **THE TEACHER** ***uses available technology to:*** ○ ***Enhance student learning.*** ○ ***Develop students' knowledge and skills.*** ○ ***Enhance creative and innovative skills.*** ○ ***Provide engaging and motivating learning experiences.***	. . . and **STUDENTS** ***use available technology to engage in:*** ○ ***Virtual or face-to-face learning activities.*** ○ ***Real world applications.***	. . . and **STUDENTS** ***use available technology to:*** ○ ***Accelerate their learning.*** ○ ***Apply team building and networking skills.*** ○ ***Deepen critical thinking skills.*** ○ ***Communicate effectively.***
ELEMENT E: Teachers establish and communicate high expectations for all students and plan instruction that helps students develop critical-thinking and problem solving skills.				
THE TEACHER: ○ ***Has high expectations for all students.*** ○ ***Holds students accountable for their learning.***	. . . and **THE TEACHER:** ○ ***Sets student expectations at a level that challenges students.*** ○ ***Incorporates critical thinking and problem-solving skills.***	. . . and **THE TEACHER:** ○ ***Challenges all students to learn to their greatest ability.*** ○ ***Teaches higher-order thinking and problem-solving skills.*** ○ ***Ensures that students perform at levels meeting or exceeding expectations.***	. . . and **STUDENTS:** ○ ***Help set their learning objectives.*** ○ ***Apply higher-order thinking and problem-solving skills to address challenging issues.***	. . . and **STUDENTS:** ○ ***Monitor their progress toward achieving teacher's high expectations.*** ○ ***Seek opportunities to expand and enhance their problem-solving and higher order thinking skills.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT F: Teachers provide students with opportunities to work in teams and develop leadership qualities.				
THE TEACHER: ○ ***Includes all students in individual and group activities.***	. . . and **THE TEACHER** ***plans lessons that:*** ○ ***Provide opportunities for students to participate using various roles and modes of communication.***	. . . and **THE TEACHER:** ○ ***Flexibly groups students.*** ○ ***Adjusts team composition based on learning objectives and student needs.*** ○ ***Varies group size, composition and tasks to create opportunities for students to learn from each other.***	. . . and **STUDENTS:** ○ ***Fulfill their assigned roles within the team.*** ○ ***Assume leadership roles in their teams.***	. . . and **STUDENTS:** ○ ***Utilize group processes to build trust and promote effective interactions among team members.*** ○ ***Participate in teams in ways that build trust and ownership of ideas among team members.***
ELEMENT G: Teachers communicate effectively, making learning objectives clear and providing appropriate models of language.				
THE TEACHER: ○ ***Communicates effectively with students.***	. . . and **THE TEACHER:** ○ ***Models effective communication skills.*** ○ ***Encourages students to communicate effectively.***	. . . and **THE TEACHER:** ○ ***Teaches students to be effective communicators.*** ○ ***Provides opportunities for students to practice communication skills.***	. . . and **STUDENTS:** ○ ***Apply effective written and oral communication skills in their work.***	. . . and **STUDENTS:** ○ ***Use academic language in spoken and written work.***

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT H: Teachers use appropriate methods to assess what each student has learned, including formal and informal assessments and use results to plan further instruction.				
THE TEACHER: ○ ***Involves students in monitoring their learning.*** ○ ***Assesses learning outcomes appropriately.***	. . . and **THE TEACHER:** ☐ Implements appropriate strategies for assigning grades. ☐ Evaluates student performance based on multiple measures. ☐ Includes documentation of student progress toward mastery of state content standards in assessment plans.	. . . and **THE TEACHER** ***provides actionable, timely, specific and individualized feedback about the quality of student work to:*** ○ ***Students.*** ☐ Families and significant adults. ☐ Other professionals who work with students. ○ ***Teaches students to use feedback to improve their learning.***	. . . and **STUDENTS:** ○ ***Self-assess on a variety of skills and concepts.*** ○ ***Articulate their personal strengths and needs based on self-assessment.*** ○ ***Effectively use formal and informal feedback to monitor their learning.***	. . . and **STUDENTS** ***assume ownership for:*** ○ ***Monitoring their progress.*** ○ ***Setting learning goals.*** ○ ***Applying teacher feedback to improve performance and accelerate their learning.***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				
Evaluator Comments: *(Required for Ratings of "Basic" or "Partially Proficient" and recommended for all rating levels.)*			*Comments of Person Being Evaluated:* *(Please indicate the element for which the comment applies if not for the standard as a whole.)*	

QUALITY STANDARD IV

Teachers reflect on their practice.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT A: Teachers demonstrate that they analyze student learning, development and growth and apply what they learn to improve their practice.				
THE TEACHER: ☐ Collects and analyzes student data to inform instruction. Uses data to: ☐ Support student learning. ☐ Inform practice.	. . . and **THE TEACHER:** ☐ Collects multiple examples of student work to determine student progress over time.	. . . and **THE TEACHER** applies knowledge of how students learn and their prior knowledge to the development of: ☐ Lesson plans. ☐ Instructional strategies.	. . . and **THE TEACHER** develops student learning plans based on: ☐ Multiple examples of student work. ☐ Other data points. ☐ Information gathered from students, families and colleagues.	. . . and **THE TEACHER:** ☐ Monitors and evaluates personal behavioral changes to determine what works for students.
ELEMENT B: Teachers link professional growth to their professional goals.				
THE TEACHER: ☐ Implements performance feedback from supervisor and/or colleagues to improve practice. Actively engages in professional development focused on: ☐ Addressing student needs. ☐ School and district initiatives. ☐ Meeting professional goals.	. . . and **THE TEACHER** engages in professional development activities based on: ☐ Likelihood of having a positive impact on student learning. ☐ Alignment with Colorado Academic Standards and school and district initiatives. ☐ Current research. ☐ Student needs.	. . . and **THE TEACHER:** ☐ Advocates for professional development that is evidence based and targeted toward improving student outcomes. ☐ Applies knowledge and skills learned through professional development to professional practice.	. . . and **THE TEACHER:** ☐ Implements new and different instructional strategies based on current research and district initiatives. ☐ Adapts teaching skills to meet student needs.	. . . and **THE TEACHER:** ☐ Develops and follows a long-term professional development plan.
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				

QUALITY STANDARD IV

Teachers reflect on their practice.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT C: Teachers are able to respond to a complex, dynamic environment.				
THE TEACHER collaborates with colleagues to: ☐ Implement new ideas to improve teaching and learning. ☐ Support struggling students. ☐ Contribute to campus goals.	. . . and **THE TEACHER:** ☐ Maintains a positive, productive and respectful relationship with colleagues.	. . . and **THE TEACHER** initiates collaborative activities with colleagues to: ☐ Analyze student data and interpret results. ☐ Apply findings to improve teaching practice.	. . . and **THE TEACHER:** ☐ Serves as a critical friend for colleagues, both providing and receiving feedback on performance.	. . . and **THE TEACHER:** ☐ Strengthens teaching practice by adapting instructional practices based on colleague feedback and other types of performance data.
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				
Evaluator Comments: *(Required for Ratings of "Basic" or "Partially Proficient" and recommended for all rating levels.)*		*Comments of Person Being Evaluated:* *(Please indicate the element for which the comment applies if not for the standard as a whole.)*		

QUALITY STANDARD V

Teachers demonstrate leadership.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT A: Teachers demonstrate leadership in their schools.				
THE TEACHER: ☐ Participates in school activities expected of all teachers. ☐ Works collaboratively for the benefit of students and families. ☐ Supports school goals and initiatives.	. . . and **THE TEACHER:** ☐ Contributes to school committees and teams.	. . . and **THE TEACHER:** ☐ Collaborates with school-based teams to leverage the skills and knowledge of colleagues and families.	. . . and **THE TEACHER:** ☐ Shares lessons learned with colleagues. ☐ Confers with school administrators, other school leaders and/or decision making teams to improve teacher working and student learning conditions.	. . . and **THE TEACHER** initiates and leads collaborative activities that: ☐ Partner with families to coordinate learning between home and school. ☐ Implement ideas to improve teaching and learning. ☐ Support struggling students.
ELEMENT B: Teachers contribute knowledge and skills to educational practices and the teaching profession.				
THE TEACHER: ☐ Shares expertise with colleagues. ☐ Supports the work of colleagues. ☐ Actively participates in activities designed to improve policies and procedures that affect school climate, family partnering and student learning.	. . . and **THE TEACHER** collaborates with colleagues to: ☐ Support student growth and development. ☐ Provide input into policies and procedures that affect school climate and student learning. ☐ Partner with families.	. . . and **THE TEACHER:** ☐ Leads professional growth and development activities whenever possible.	. . . and **THE TEACHER:** ☐ Participates in district-wide decision-making processes that impact the school community, including families.	. . . and **THE TEACHER:** ☐ Advocates for the inclusion of teachers and families in education and government decision-making processes.

○ Professional Practice is ***Observable*** during a classroom observation.
☐ Professional Practice is Not Observable during a classroom observation.

QUALITY STANDARD V

Teachers demonstrate leadership.

Basic	Partially Proficient	Proficient (Meets State Standard)	Accomplished	Exemplary
ELEMENT C: Teachers advocate for schools and students, partnering with students, families and communities as appropriate.				
THE TEACHER: ☐ Advocates for students with families and other significant adults using a variety of communication tools and strategies.	. . . and **THE TEACHER:** ☐ Discusses potential revisions to policies and procedures with administrators to better address student, family and school needs.	. . . and **THE TEACHER:** ☐ Contributes to school and/or district committees to advocate for students and their families.	. . . and **THE TEACHER:** ☐ Advocates for students and the school to external agencies and groups.	. . . and **THE TEACHER:** ☐ Advocates for improvements to teaching, learning and leadership through collaboration with professional organizations or local, state, and/or national entities.
ELEMENT D: Teachers demonstrate high ethical standards.				
THE TEACHER: ☐ Maintains confidentiality of student records as required by law. ☐ Adheres to standards of professional practice.	. . . and **HE TEACHER:** ○ ***Models ethical behavior, including honesty, integrity, fair treatment and respect for others.***	. . . and **THE TEACHER:** ☐ Maintains confidentiality of student, family and fellow teacher interactions as well as student data.	. . . and **THE TEACHER:** ○ ***Helps students understand the importance of ethical behavior as an individual and member of society.***	. . . and **STUDENTS** ***demonstrate:*** ○ ***Honesty.*** ○ ***Respect for others.***
○ Professional Practice is ***Observable*** during a classroom observation. ☐ Professional Practice is Not Observable during a classroom observation.				
Evaluator Comments: *(Required for Ratings of "Basic" or "Partially Proficient" and recommended for all rating levels.)*			*Comments of Person Being Evaluated:* *(Please indicate the element for which the comment applies if not for the standard as a whole.)*	

Appendix D. Changes in Professional Practice Ratings Between 2012-13 and 2013-14

Exhibit D-1. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 for All Teachers by Locale Codes

Exhibit D-2. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 By District Performance Framework

Exhibit D-3. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by School Performance Framework

Exhibit D-4. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Race

Exhibit D-5. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Gender

Exhibit D-7. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Grade Span

Exhibit D-8. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Title I Status

Exhibit D-1. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 for All Teachers by Locale Codes

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	1	0	2
Partially Proficient				0	7	43	15	0		65
Proficient			0	11	306	318	7			642
Accomplished		0	4	52	312	44				412
Exemplary	0	0	3	66	33					102
N**	**0**	**0**	**7**	**129**	**658**	**405**	**23**	**1**	**0**	**1,223**

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	50.00	50.00	0.00	0.16
Partially Proficient				0.00	10.77	66.15	23.08	0.00		5.31
Proficient			0.00	1.71	47.66	49.53	1.09			52.49
Accomplished		0.00	0.97	12.62	75.73	10.68				33.69
Exemplary	0.00	0.00	2.94	64.71	32.35					8.34
%***	**0.00**	**0.00**	**0.57**	**10.55**	**53.80**	**33.12**	**1.88**	**0.08**	**0.00**	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school years.

**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

2012-2013*	Number of Teachers by Locale by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
Rural	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	2	18	1	0		21
Proficient			0	1	68	55	0			124
Accomplished		0	1	7	52	7				67
Exemplary	0	0	0	9	5					14
N**	0	0	1	17	127	80	1	0	0	226
Town	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	1	0	2
Partially Proficient				0	5	9	7	0		21
Proficient			0	8	71	55	5			139
Accomplished		0	0	17	58	15				90
Exemplary	0	0	1	11	5					17
N**	0	0	1	36	139	79	13	1	0	269
Suburb	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	0	0	0		0
Proficient			0	0	8	16	0			24
Accomplished		0	1	5	19	5				30
Exemplary	0	0	1	8	7					16
N**	0	0	2	13	34	21	0	0	0	70
City	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	16	7	0		23
Proficient			0	2	159	192	2			355
Accomplished		0	2	23	183	17				225
Exemplary	0	0	1	38	16					55
N**	0	0	3	63	358	225	9	0	0	658

**The lowest rating level was changed from “Not Evident” to “Basic” following the 2012-13 school years.

**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

2012-2013*	Percent of Teachers by Locale by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Rural	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	9.52	85.71	4.76	0.00		9.29
Proficient			0.00	0.81	54.84	44.35	0.00			54.87
Accomplished		0.00	1.49	10.45	77.61	10.45				29.65
Exemplary	0.00	0.00	0.00	64.29	35.71					6.19
%*	0.00	0.00	0.44	7.52	56.19	35.40	0.44	0.00	0.00	

Town	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	50.00	50.00	0.00	0.74
Partially Proficient				0.00	23.81	42.86	33.33	0.00		7.81
Proficient			0.00	5.76	51.08	39.57	3.60			51.67
Accomplished		0.00	0.00	18.89	64.44	16.67				33.46
Exemplary	0.00	0.00	5.88	64.71	29.41					6.32
%*	0.00	0.00	0.37	13.38	51.67	29.37	4.83	0.37	0.00	

Suburb	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	0.00	0.00	0.00		0.00
Proficient			0.00	0.00	33.33	66.67	0.00			34.29
Accomplished		0.00	3.33	16.67	63.33	16.67				42.86
Exemplary	0.00	0.00	6.25	50.00	43.75					22.86
%*	0.00	0.00	2.86	18.57	48.57	30.00	0.00	0.00	0.00	

City	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	69.57	30.43	0.00		3.50
Proficient			0.00	0.56	44.79	54.08	0.56			53.95
Accomplished		0.00	0.89	10.22	81.33	7.56				34.19
Exemplary	0.00	0.00	1.82	69.09	29.09					8.36
%*	0.00	0.00	0.46	9.57	54.41	34.19	1.37	0.00	0.00	

**The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school years.

**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid locale codes and whose locale code did not change between the two years.

Exhibit D-2. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 By District Performance Framework

	Number of Teachers by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	2	0	0	2
Partially Proficient				0	5	40	18	0		63
Proficient			0	14	299	315	9			637
Accomplished		0	3	56	307	40				406
Exemplary	0	0	3	63	30					96
N**	**0**	**0**	**6**	**133**	**641**	**395**	**29**	**0**	**0**	**1,204**

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	100.0	0.00	0.00	0.17
Partially Proficient				0.00	7.94	63.49	28.57	0.00		5.23
Proficient			0.00	2.20	46.94	49.45	1.41			52.91
Accomplished		0.00	0.74	13.79	75.62	9.85				33.72
Exemplary	0.00	0.00	3.13	65.63	31.25					7.97
%***	**0.00**	**0.00**	**0.50**	**11.05**	**53.24**	**32.81**	**2.41**	**0.00**	**0.00**	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school years.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.

2012-2013* Accredited w/Priority Improvement	Number of Teachers in Districts with this District Performance Framework Rating by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
	-4	-3	-2	-1	0	+1	+2	+3	+4	*N*
Basic					0	0	0	0	0	0
Partially Proficient				0	0	12	5	0		17
Proficient			0	1	8	9	1			19
Accomplished		0	0	0	10	0				10
Exemplary	0	0	0	2	1					3
N**	0	0	0	3	19	21	6	0	0	49

Accredited with Improvement Plan	-4	-3	-2	-1	0	+1	+2	+3	+4	*N*
Basic					0	0	2	0	0	2
Partially Proficient				0	2	1	3	0		6
Proficient			0	6	31	46	3			86
Accomplished		0	0	11	49	12				72
Exemplary	0	0	0	7	3					10
N**	0	0	0	24	85	59	8	0	0	176

Accredited	-4	-3	-2	-1	0	+1	+2	+3	+4	*N*
Basic					0	0	0	0	0	0
Partially Proficient				0	1	23	10	0		34
Proficient			0	2	220	259	5			486
Accomplished		0	3	39	246	28				316
Exemplary	0	0	3	54	26					83
N**	0	0	6	95	493	310	15	0	0	919

Accredited with Distinction	-4	-3	-2	-1	0	+1	+2	+3	+4	*N*
Basic					0	0	0	0	0	0
Partially Proficient				0	2	4	0	0		6
Proficient			0	5	40	1	0			46
Accomplished		0	0	6	2	0				8
Exemplary	0	0	0	0	0					0
N**	0	0	0	11	44	5	0	0	0	60

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.

2012-2013*	Percent of Teachers in this District Performance Framework Rating by Number of Rating Levels Changed between 2012-13 and 2013-14*									
Accredited w/Priority Improvement Plan	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	70.59	29.41	0.00		34.69
Proficient			0.00	5.26	42.11	47.37	5.26			38.78
Accomplished		0.00	0.00	0.00	100.0	0.00				20.41
Exemplary	0.00	0.00	0.00	66.67	33.33					6.12
%*	0.00	0.00	0.00	6.12	38.78	42.86	12.24	0.00	0.00	

Accredited with Improvement Plan	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	100.0	0.00	0.00	1.14
Partially Proficient				0.00	33.33	16.67	50.00	0.00		3.41
Proficient			0.00	6.98	36.05	53.49	3.49			48.86
Accomplished		0.00	0.00	15.28	68.06	16.67				40.91
Exemplary	0.00	0.00	0.00	70.00	30.00					5.68
%*	0.00	0.00	0.00	13.64	48.30	33.52	4.55	0.00	0.00	

Accredited	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	2.94	67.65	29.41	0.00		3.70
Proficient			0.00	0.41	45.27	53.29	1.03			52.88
Accomplished		0.00	0.95	12.34	77.85	8.86				34.39
Exemplary	0.00	0.00	3.61	65.06	31.33					9.03
%*	0.00	0.00	0.65	10.34	53.65	33.73	1.63	0.00	0.00	

Accredited with Distinction	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	33.33	66.67	0.00	0.00		10.00
Proficient			0.00	10.87	86.96	2.17	0.00			76.67
Accomplished		0.00	0.00	75.00	25.00	0.00				13.33
Exemplary	0.00	0.00	0.00	0.00	0.00					0.00
%*	0.00	0.00	0.00	18.33	73.33	8.33	0.00	0.00	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid district performance framework codes and whose district performance code did not change between the two years.

Exhibit D-3. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by School Performance Framework

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	2	1	0	3
Partially Proficient				0	5	38	10	0		53
Proficient			0	12	226	228	6			472
Accomplished		0	0	36	243	35				314
Exemplary	0	0	3	53	27					83
N	0	0	3	101	501	301	18	1	0	925

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	66.67	33.33	0.00	0.32
Partially Proficient				0.00	9.43	71.70	18.87	0.00		5.73
Proficient			0.00	2.54	47.88	48.31	1.27			51.03
Accomplished		0.00	0.00	11.46	77.39	11.15				33.95
Exemplary	0.00	0.00	3.61	63.86	32.53					8.97
%*	**0.00**	**0.00**	**0.32**	**10.92**	**54.16**	**32.54**	**1.95**	**0.11**	**0.00**	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance framework code did not change between the two years.

2012-2013	Number of Teachers in this School Performance Framework Category by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Turnaround	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	2	0	0		2
Proficient			0	0	1	1	0			2
Accomplished		0	0	0	0	0				0
Exemplary	0	0	0	0	0					0
N**	0	0	0	0	1	3	0	0	0	4

Priority Improvement	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	0	0	0		0
Proficient			0	2	2	2	0			6
Accomplished		0	0	1	3	0				4
Exemplary	0	0	0	0	0					0
N**	0	0	0	3	5	2	0	0	0	10

Improvement	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	2	0	0	2
Partially Proficient				0	2	11	4	0		17
Proficient			0	2	17	40	4			63
Accomplished		0	0	5	42	7				54
Exemplary	0	0	0	9	9					18
N**	0	0	0	16	70	58	10	0	0	154

Performance	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	1	0	1
Partially Proficient				0	3	25	6	0		34
Proficient			0	8	206	185	2			401
Accomplished		0	0	30	198	28				256
Exemplary	0	0	3	44	18					65
N**	0	0	3	82	425	238	8	1	0	757

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance framework code did not change between the two years.

2012-2013*	Percent of Teachers in this School Performance Framework Category by Number of Rating Levels Changed between 2012-13 and 2013-14*									
Turnaround	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	100.0	0.00	0.00		50.00
Proficient			0.00	0.00	50.00	50.00	0.00			50.00
Accomplished		0.00	0.00	0.00	0.00	0.00				0.00
Exemplary	0.00	0.00	0.00	0.00	0.00					0.00
%	0.00	0.00	0.00	0.00	25.00	75.00	0.00	0.00	0.00	

Priority Improvement	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	0.00	0.00	0.00		0.00
Proficient			0.00	33.33	33.33	33.33	0.00			60.00
Accomplished		0.00	0.00	25.00	75.00	0.00				40.00
Exemplary	0.00	0.00	0.00	0.00	0.00					0.00
%	0.00	0.00	0.00	30.00	50.00	20.00	0.00	0.00	0.00	

Improvement	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	100.0	0.00	0.00	1.30
Partially Proficient				0.00	11.76	64.71	23.53	0.00		11.04
Proficient			0.00	3.17	26.98	63.49	6.35			40.91
Accomplished		0.00	0.00	9.26	77.78	12.96				35.06
Exemplary	0.00	0.00	0.00	50.00	50.00					11.69
%	0.00	0.00	0.00	10.39	45.45	37.66	6.49	0.00	0.00	

Performance	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	100.0	0.00	0.13
Partially Proficient				0.00	8.82	73.53	17.65	0.00		4.49
Proficient			0.00	2.00	51.37	46.13	0.50			52.97
Accomplished		0.00	0.00	11.72	77.34	10.94				33.82
Exemplary	0.00	0.00	4.62	67.69	27.69					8.59
%	0.00	0.00	0.40	10.83	56.14	31.44	1.06	0.13	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance code did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14, who had valid school performance framework codes and whose school performance framework code did not change between the two years.

Exhibit D-4. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Race

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic*					0	0	3	1	0	*4*
Partially Proficient				1	8	46	18	0		*3*
Proficient			0	14	325	336	10			*685*
Accomplished		0	4	57	332	44				*437*
Exemplary	0	0	3	67	3 4					*104*
N	*0*	*0*	*7*	*139*	*699*	*426*	*31*	*1*	*0*	*1,303*

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013 *	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	75.00	25.00	0.00	*0.31*
Partially Proficient				1.37	10.96	63.01	24.66	0.00		*5.60*
Proficient			0.00	2.04	47.45	49.05	1.46			*52.57*
Accomplished		0.00	0.92	13.04	75.97	10.07				*33.54*
Exemplary	0.00	0.00	2.88	64.42	32.69					*7.98*
%*	*0.00*	*0.00*	*0.54*	*10.67*	*53.65*	*32.69*	*2.38*	*0.08*	*0.00*	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013*	Number of Teachers in this Racial Group by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Non-White	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	2	0	0		2
Proficient			0	0	13	10	0			23
Accomplished		0	0	2	5	0				7
Exemplary	0	0	0	1	0					1
N**	0	0	0	3	18	12	0	0	0	33

White	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	3	1	0	4
Partially Proficient				1	8	44	18	0		71
Proficient			0	14	312	326	10			662
Accomplished		0	4	55	327	44				430
Exemplary	0	0	3	66	34					103
N**	0	0	7	136	681	414	31	1	0	1,270

2012-2013*	Percent of Teachers in this Racial Group by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Non-White	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0.00	0.00	75.00	25.00	0.00	0.31
Partially Proficient				1.41	11.27	61.97	25.35	0.00		5.59
Proficient			0.00	2.11	47.13	49.24	1.51			52.13
Accomplished		0.00	0.93	12.79	76.05	10.23				33.86
Exemplary	0.00	0.00	2.91	64.08	33.01					8.11
%***	0.00	0.00	0.55	10.71	53.62	32.60	2.44	0.08	0.00	

White	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	100.0	0.00	0.00		6.06
Proficient			0.00	0.00	56.52	43.48	0.00			69.70
Accomplished		0.00	0.00	28.57	71.43	0.00				21.21
Exemplary	0.00	0.00	0.00	100.0	0.00					3.03
%***	0.00	0.00	0.00	9.09	54.55	36.36	0.00	0.00	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

Exhibit D-5. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Gender

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	3	1	0	*4*
Partially Proficient				1	8	46	18	0		*3*
Proficient			0	14	325	336	10			*685*
Accomplished		0	4	57	332	44				*437*
Exemplary	0	0	3	67	34					*104*
N*	***0***	***0***	***7***	***139***	***699***	***426***	***31***	***1***	***0***	***1,303***

	Percent of Teachers by Number of Overall Rating Levels Changed in 2013-14									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic*					0.00	0.00	75.00	25.00	0.00	*0.31*
Partially Proficient				1.37	10.96	63.01	24.66	0.00		*5.60*
Proficient			0.00	2.04	47.45	49.05	1.46			*52.57*
Accomplished		0.00	0.92	13.04	75.97	10.07				*33.54*
Exemplary	0.00	0.00	2.88	64.42	32.69					*7.98*
%	***0.00***	***0.00***	***0.54***	***10.67***	***53.65***	***32.69***	***2.38***	***0.08***	***0.00***	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013*	Number of Teachers by Gender by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Female	**4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	3	1	0	4
Partially Proficient				1	3	26	14	0		44
Proficient			0	9	225	253	8			495
Accomplished		0	4	42	274	40				360
Exemplary		0	1	56	27					84
N **		0	5	108	529	319	25	1	0	987

Male	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	5	20	4	0		29
Proficient			0	5	100	83	2			190
Accomplished		0	0	15	58	4				77
Exemplary		0	2	11	7					20
N **		0	2	31	170	107	6	0	0	316

2012-2013	Percent of Teachers by Gender by Number of Rating Levels Changed between 2012-13 and 2013-14									
Female	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	75.00	35.00	0.00	0.41
Partially Proficient				2.27	6.82	59.09	31.82	0.00		4.46
Proficient			0.00	1.82	45.45	51.11	1.62			50.15
Accomplished		0.00	1.11	11.67	76.11	11.11				36.47
Exemplary	0.00	0.00	1.19	66.67	32.14					8.51
%*	0.00	0.00	0.51	10.94	53.60	32.32	2.53	0.10	0.00	

Male										
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	17.24	68.97	13.79	0.00		9.18
Proficient			0.00	2.63	52.63	43.68	1.05			60.13
Accomplished		0.00	0.00	19.48	75.32	5.19				24.37
Exemplary	0.00	0.00	10.00	55.00	35.00					6.33
%*	0.00	0.00	0.63	9.81	53.80	33.86	1.90	0.00	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

Exhibit D-6. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Highest Degree Earned

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	3	1	0	*4*
Partially Proficient				1	8	46	18	0		*3*
Proficient			0	14	325	336	10			*685*
Accomplished		0	4	57	332	44				*437*
Exemplary	0	0	3	67	34					*104*
N*	***0***	***0***	***7***	***139***	***699***	***426***	***31***	***1***	***0***	***1,303***

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic*					0.00	0.00	75.00	25.00	0.00	*0.31*
Partially Proficient				1.37	10.96	63.01	24.66	0.00		*5.60*
Proficient			0.00	2.04	47.45	49.05	1.46			*52.57*
Accomplished		0.00	0.92	13.04	75.97	10.07				*33.54*
Exemplary	0.00	0.00	2.88	64.42	32.69					*7.98*
%	***0.00***	***0.00***	***0.54***	***10.67***	***53.65***	***32.69***	***2.38***	***0.08***	***0.00***	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013*	Number of Teachers by Highest Degree Earned by Number of Rating Levels Changed Between 2012-13 and 2013-14 *									
Bachelors	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	0	0	1
Partially Proficient				0	6	23	7	0		36
Proficient			0	11	172	155	2			340
Accomplished		0	4	24	141	17				186
Exemplary	0	0	1	27	11					39
N*	0	0	5	62	330	195	10	0	0	602

Masters	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	1	0	2
Partially Proficient				1	2	22	9	0		34
Proficient			0	2	151	176	8			337
Accomplished		0	0	33	189	26				248
Exemplary	0	0	2	40	23					65
N*	0	0	2	76	365	224	18	1	0	686

Advanced	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	0	0	1
Partially Proficient				0	0	0	2	0		2
Proficient			0	0	2	5	0			7
Accomplished		0	0	0	2	1				3
Exemplary	0	0	0	0	0					0
N*	0	0	0	0	4	6	3	0	0	13

Other	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	1	0	0		1
Proficient			0	1	0	0	0			1
Accomplished		0	0	0	0	0				0
Exemplary	0	0	0	0	0					0
N*	0	0	0	1	0	1	0	0	0	2

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013*	Percent of Teachers by Highest Degree Earned by Number of Rating Levels Changed between 2012-13 and 2013-14*									
Bachelors	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	100.0	0.00	0.00	0.17
Partially Proficient				0.00	16.67	63.89	19.44	0.00		5.98
Proficient			0.00	3.24	50.59	45.59	0.59			56.48
Accomplished		0.00	2.15	12.90	75.81	9.14				30.90
Exemplary	0.00	0.00	2.56	69.23	28.21					6.48
%*	0.00	0.00	0.83	10.30	54.82	32.39	1.66	0.00	0.00	

Masters	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	50.00	50.00	0.00	0.29
Partially Proficient				2.94	5.88	64.71	26.47	0.00		4.96
Proficient			0.00	0.59	44.81	52.23	2.37			49.13
Accomplished		0.00	0.00	13.31	76.21	10.48				36.15
Exemplary	0.00	0.00	3.08	61.54	35.38					9.48
%*	0.00	0.00	0.29	11.08	53.21	32.65	2.62	0.15	0.00	

Advanced	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	100.0	0.00	0.00	7.69
Partially Proficient				0.00	0.00	0.00	100.0	0.00		15.38
Proficient			0.00	0.00	28.57	71.43	0.00			53.85
Accomplished		0.00	0.00	0.00	66.67	33.33				23.08
Exemplary	0.00	0.00	0.00	0.00	0.00					0.00
%*	0.00	0.00	0.00	0.00	30.77	46.15	23.08	0.00	0.00	

Other	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	100.0	0.00	0.00		50.00
Proficient			0.00	100.0	0.00	0.00	0.00			50.00
Accomplished		0.00	0.00	0.00	0.00	0.00				0.00
Exemplary	0.00	0.00	0.00	0.00	0.00					0.00
%*	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

Exhibit D-7. Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Grade Span

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	3	1	0	*4*
Partially Proficient				1	8	46	18	0		*3*
Proficient			0	14	325	336	10			*685*
Accomplished		0	4	57	332	44				*437*
Exemplary	0	0	3	67	34					*104*
N	***0***	***0***	***7***	***139***	***699***	***426***	***31***	***1***	***0***	***1,303***

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic*					0.00	0.00	75.00	25.00	0.00	*0.31*
Partially Proficient				1.37	10.96	63.01	24.66	0.00		*5.60*
Proficient			0.00	2.04	47.45	49.05	1.46			*52.57*
Accomplished		0.00	0.92	13.04	75.97	10.07				*33.54*
Exemplary	0.00	0.00	2.88	64.42	32.69					*7.98*
%*	***0.00***	***0.00***	***0.54***	***10.67***	***53.65***	***32.69***	***2.38***	***0.08***	***0.00***	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013	Number of Teachers by Grade Span Taught by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Elementary (PK-5)*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	1	0	2
Partially Proficient				0	2	15	8	0		25
Proficient			0	4	152	193	4			353
Accomplished		0	3	24	202	33				262
Exemplary	0	0	1	38	24					63
N**	0	0	4	66	380	241	13	1	0	705

Middle School	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				1	1	5	2	0		9
Proficient			0	5	64	73	5			147
Accomplished		0	1	18	56	4				79
Exemplary	0	0	1	17	5					23
N**	0	0	2	41	126	82	7	0	0	258

High School	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	2	0	0	2
Partially Proficient				0	4	26	8	0		38
Proficient			0	4	108	67	1			180
Accomplished		0	0	15	70	7				92
Exemplary	0	0	1	12	4					17
N**	0	0	1	31	186	100	11	0	0	329

Other Grades	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	1	0	0	0		1
Proficient			0	1	1	3	0			5
Accomplished		0	0	0	4	0				4
Exemplary	0	0	0	0	1					1
N**	0	0	0	1	7	3	0	0	0	11

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

2012-2013	Percent of Teachers by Grade Span and Whether or not they changed District/School by Number of Rating Levels Changed between 2012-13 and 2013-14*									
Elementary (PK-5)*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	50.00	50.00	0.00	0.28
Partially Proficient				0.00	8.00	60.00	32.00	0.00		3.55
Proficient			0.00	1.13	43.06	54.67	1.13			50.07
Accomplished		0.00	1.15	9.16	77.10	12.60				37.16
Exemplary	0.00	0.00	1.59	60.32	38.10					8.94
%*	0.00	0.00	0.57	9.36	53.90	34.18	1.84	0.14	0.00	

Middle School	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.0
Partially Proficient				11.11	11.11	55.56	22.22	0.00		3.9
Proficient			0.00	3.40	43.54	49.66	3.40			56.98
Accomplished		0.00	1.27	22.78	70.89	5.06				30.62
Exemplary	0.00	0.00	4.35	73.91	21.74					8.91
%*	0.00	0.00	0.78	15.89	48.84	31.78	2.71	0.00	0.00	

High School	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	100.0	0.00	0.00	0.61
Partially Proficient				0.00	10.53	68.42	21.05	0.00		11.55
Proficient			0.00	2.22	60.00	37.22	0.56			54.71
Accomplished		0.00	0.00	16.30	76.09	7.61				27.96
Exemplary	0.00	0.00	5.88	70.59	23.53					5.17
%*	0.00	0.00	0.30	9.42	56.53	30.40	3.34	0.00	0.00	

Other Grade Span	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	**%**
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	100.0	0.00	0.00	0.00		9.09
Proficient			0.00	20.00	20.00	60.00	0.00			45.45
Accomplished		0.00	0.00	0.00	100.0	0.00				36.36
Exemplary	0.00	0.00	0.00	0.00	100.0					9.09
%*	0.00	0.00	0.00	9.09	63.64	27.27	0.00	0.00	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14.

Exhibit D-8. *Change in Overall Professional Practice Ratings Between 2012-13 and 2013-14 by Title I Status*

	Number of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	2	1	0	3
Partially Proficient				1	5	45	17	0		68
Proficient			0	9	310	324	9			652
Accomplished		0	4	55	319	44				422
Exemplary	0	0	3	65	34					102
N****	**0**	**0**	**7**	**130**	**668**	**413**	**28**	**1**	**0**	**1,247**

	Percent of Teachers by Number of Overall Rating Levels Changed Between 2012-13 and 2013-14*									
2012-2013*	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	66.67	33.33	0.00	0.24
Partially Proficient				1.47	7.35	66.18	25.00	0.00		5.45
Proficient			0.00	1.38	47.55	49.69	1.38			52.29
Accomplished		0.00	0.95	13.03	75.59	10.43				33.84
Exemplary	0.00	0.00	2.94	63.73	33.33					8.18
%***	**0.00**	**0.00**	**0.56**	**10.43**	**53.57**	**33.12**	**2.25**	**0.08**	**0.00**	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.

2012-2013*	Number of Teachers in Schools with This Title I Status by Number of Rating Levels Changed Between 2012-13 and 2013-14*									
Not Served	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	0	0	1
Partially Proficient				0	3	30	11	0		44
Proficient			0	4	189	213	8			414
Accomplished		0	3	35	212	30				280
Exemplary	0	0	3	56	28					87
N	0	0	6	95	432	273	20	0	0	826

Targeted Assistance	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	0	0	0	0
Partially Proficient				0	0	2	0	0		2
Proficient			0	2	29	23	0			54
Accomplished		0	0	3	19	3				25
Exemplary	0	0	0	5	5					10
N	0	0	0	10	53	28	0	0	0	91

Schoolwide	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***N***
Basic					0	0	1	1	0	2
Partially Proficient				1	2	13	6	0		22
Proficient			0	3	92	88	1			184
Accomplished		0	1	17	88	11				117
Exemplary	0	0	0	4	1					5
N	0	0	1	25	183	112	8	1	0	330

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.

2012-2013*	Percent of Teachers in Schools with This Title I Status by Number of Rating Levels Changed between 2012-13 and 2013-14*									
Not Served	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	100.0	0.00	0.00	0.12
Partially Proficient				0.00	6.82	68.18	25.00	0.00		5.33
Proficient			0.00	0.97	45.65	51.45	1.93			50.12
Accomplished		0.00	1.07	12.50	75.71	10.71				33.90
Exemplary	0.00	0.00	3.45	64.37	32.18					10.53
%***	0.00	0.00	0.73	11.50	52.30	33.05	2.42	0.00	0.00	

Targeted Assistance	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	0.00	0.00	0.00	0.00
Partially Proficient				0.00	0.00	100.0	0.00	0.00		2.20
Proficient			0.00	3.70	53.70	42.59	0.00			59.34
Accomplished		0.00	0.00	12.00	76.00	12.00				27.47
Exemplary	0.00	0.00	0.00	50.00	50.00					10.99
%***	0.00	0.00	0.00	10.99	58.24	30.77	0.00	0.00	0.00	

Schoolwide	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**	***%***
Basic					0.00	0.00	50.00	50.00	0.00	0.61
Partially Proficient				4.55	9.09	59.09	27.27	0.00		6.67
Proficient			0.00	1.63	50.00	47.83	0.54			55.76
Accomplished		0.00	0.85	14.53	75.21	9.40				35.45
Exemplary	0.00	0.00	0.00	80.00	20.00					1.52
%***	0.00	0.00	0.30	7.58	55.45	33.94	2.42	0.30	0.00	

*The lowest rating level was changed from "Not Evident" to "Basic" following the 2012-13 school year.
**Number of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.
***Percent of teachers with final overall professional practice ratings in both 2012-13 and 2013-14 whose school's Title I status did not change between the two years.

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Appendix E. Comparisons of Overall Professional Practice Ratings by Group and Standards and Their Associated Elements

Exhibit E-1. Comparison of Overall Professional Practice Ratings for Locale Groups by Standards and Their Associated Elements

Standard and Element	Teachers in this locale were rated higher than…	Teachers in this locale…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	City (2.53)	Suburb (2.44)	0.15	[0.06, 0.24]
		Town (2.36)	0.26	[0.16, 0.36]
		Rural (2.22)	0.48	[0.36, 0.59]
	Suburb (2.44)	Town (2.36)	0.12	[0.03, 0.21]
		Rural (2.22)	0.34	[0.23, 0.45]
	Town (2.36)	Rural (2.22)	0.20	[0.08, 0.32]
Element A: Aligned instruction.	City (2.60)	Town (2.44)	0.21	[0.12, 0.31]
		Rural (2.29)	0.39	[0.27, 0.50]
	Suburb (2.55)	Town (2.44)	0.15	[0.06, 0.24]
		Rural (2.29)	0.33	[0.22, 0.44]
	Town (2.44)	Rural (2.29)	0.17	[0.06, 0.29]
Element B: Student literacy development.	City (2.22)	Town (2.08)	0.19	[0.09, 0.29]
	Suburb (2.22)	Rural (1.97)	0.34	[0.23, 0.46]
		Town (2.08)	0.19	[0.10, 0.28]
		Rural (1.97)	0.35	[0.24, 0.46]
	Town (2.08)	Rural (1.97)	0.13	[0.02, 0.25]
Element C: Mathematics.	City (2.35)	Suburb (2.21)	0.17	[0.09, 0.26]
		Town (2.18)	0.20	[0.10, 0.29]
		Rural (1.93)	0.49	[0.37, 0.60]
	Suburb (2.21)	Rural (1.93)	0.32	[0.21, 0.44]
	Town (2.18)	Rural (1.93)	0.26	[0.14, 0.38]
Element D: Disciplines.	City (2.31)	Rural (2.19)	0.18	[0.06, 0.29]
	Suburb (2.34)	Town (2.26)	0.11	[0.02, 0.20]
		Rural (2.19)	0.21	[0.10, 0.32]
Element E: Interconnectedness of content areas/disciplines.	City (2.61)	Suburb (2.49)	0.15	[0.07, 0.24]
		Town (2.43)	0.22	[0.12, 0.31]
		Rural (2.28)	0.40	[0.28, 0.51]
	Suburb (2.49)	Rural (2.28)	0.26	[0.15, 0.37]
	Town (2.43)	Rural (2.28)	0.17	[0.05, 0.28]
Element F: Relevant instruction and content.	City (2.56)	Suburb (2.5)	0.08	[-0.01, 0.17]
		Town (2.43)	0.16	[0.06, 0.26]
		Rural (2.33)	0.28	[0.16, 0.40]
	Suburb (2.5)	Rural (2.33)	0.21	[0.09, 0.32]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	City (2.83)	Town (2.69)	0.20	[0.11, 0.30]
		Rural (2.51)	0.46	[0.34, 0.57]
	Suburb (2.81)	Town (2.69)	0.17	[0.08, 0.26]
		Rural (2.51)	0.42	[0.31, 0.53]
	Town (2.69)	Rural (2.51)	0.24	[0.12, 0.36]
Element A: Predictable and nurturing learning environment.	City (3.36)	Suburb (3.25)	0.13	[0.04, 0.22]
		Town (3.18)	0.21	[0.10.31]
		Rural (3.04)	0.37	[0.25, 0.48]
	Suburb (3.25)	Rural (3.04)	0.23	[0.12, 0.34]
	Town (3.18)	Rural (3.04)	0.15	[0.03, 0.27]

Continued on next page.

Standard and Element	Teachers in this locale were rated higher than…	Teachers in this locale…	Cohen's d	95% CI
Element B: Commitment to and respect for diversity.	City (2.77)	Town (2.68)	0.12	[0.03, 0.22]
		Rural (2.49)	0.39	[0.27, 0.51]
	Suburb (2.74)	Rural (2.49)	0.35	[0.23, 0.46]
	Town (2.68)	Rural (2.49)	0.24	[0.12, 0.36]
Element C: Engagement of students as individuals.	City (2.66)	Town (2.35)	0.30	[0.21, 0.40]
		Rural (2.15)	0.50	[0.38, 0.62]
	Suburb (2.61)	Town (2.35)	0.26	[0.17, 0.35]
		Rural (2.15)	0.47	[0.36, 0.58]
	Town (2.35)	Rural (2.15)	0.17	[0.05, 0.29]
Element D: Adaptation of teaching to benefit all students.	City (2.34)	Rural (2.19)	0.21	[0.10, 0.33]
	Suburb (2.36)	Rural (2.19)	0.24	[0.13, 0.35]
	Town (2.36)	Rural (2.19)	0.21	[0.09, 0.33]
Element E: Proactive, clear and constructive feedback.	City (2.65)	Town (2.46)	0.19	[0.09, 0.29]
		Rural (2.23)	0.41	[0.29, 0.52]
	Suburb (2.67)	Town (2.46)	0.23	[0.13, 0.32]
		Rural (2.23)	0.47	[0.35, 0.58]
	Town (2.46)	Rural (2.23)	0.22	[0.11, 0.34]
Element F: acceptable student behavior, efficient use of time and appropriate intervention strategies.	City (2.77)	Rural (2.56)	0.24	[0.12, 0.35]
	Suburb (2.7)	Rural (2.56)	0.16	[0.05, 0.27]
	Town (2.74)	Rural (2.56)	0.19	[0.07, 0.31]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	City (2.39)	Rural (2.19)	0.33	[0.22, 0.45]
	Suburb (2.37)	Rural (2.19)	0.30	[0.19, 0.41]
	Town (2.34)	Rural (2.19)	0.23	[0.11, 0.35]
Element A: knowledge of current developmental science.	City (2.28)	Town (2.19)	0.11	[0.02, 0.21]
		Rural (2.00)	0.37	[0.25, 0.48]
	Suburb (2.25)	Rural (2.00)	0.34	[0.23, 0.45]
	Town (2.19)	Rural (2.00)	0.22	[0.10, 0.34]
Element B: Instruction based on student assessments.	City (2.22)	Town (2.11)	0.16	[0.06, 0.26]
		Rural (2.03)	0.29	[0.17, 0.41]
	Suburb (2.23)	Town (2.11)	0.17	[0.08, 0.27]
		Rural (2.03)	0.31	[0.19, 0.42]
	Town (2.11)	Rural (2.03)	0.11	[-0.01, 0.23]
Element C: Knowledge of current research on effective instructional practices.	City (2.82)	Suburb (2.67)	0.16	[0.08, 0.25]
		Town (2.63)	0.19	[0.09, 0.29]
		Rural (2.47)	0.36	[0.24, 0.48]
	Suburb (2.67)	Rural (2.47)	0.22	[0.11, 0.33]
	Town (2.63)	Rural (2.47)	0.16	[0.04, 0.27]
Element D: Integration and use of appropriate available technology.	Suburb (2.16)	City (2.08)	0.11	[0.02, 0.20]
		Town (2.08)	0.11	[0.02, 0.20]
		Rural (2.03)	0.18	[0.07, 0.29]
Element E: High expectations for all students.	City (2.08)	Rural (1.91)	0.24	[0.13, 0.36]
	Suburb (2.11)	Town (2.04)	0.10	[0.01, 0.19]
		Rural (1.91)	0.30	[0.19, 0.41]
	Town (2.04)	Rural (1.91)	0.17	[0.05, 0.29]

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Standard and Element	Teachers in this locale were rated higher than…	Teachers in this locale…	Cohen's d	95% CI
Element F: Opportunities to work in teams and develop leadership qualities.	City (2.55)	Suburb (2.46)	0.12	[0.03, 0.21]
		Rural (2.37)	0.22	[0.11, 0.34]
	Suburb (2.46)	Rural (2.37)	0.12	[0.01, 0.23]
	Town (2.49)	Rural (2.37)	0.14	[0.02, 0.26]
Element G: Effective comunication.	City (2.74)	Rural (2.52)	0.26	[0.14, 0.37]
	Suburb (2.74)	Rural (2.52)	0.26	[0.15, 0.37]
	Town (2.74)	Rural (2.52)	0.25	[0.13, 0.37]
Element H: Appropriate assessment methods.	City (2.11)	Rural (1.86)	0.33	[0.21, 0.44]
	Suburb (2.14)	Town (2.06)	0.11	[0.02, 0.20]
		Rural (1.86)	0.39	[0.28, 0.50]
	Town (2.06)	Rural (1.86)	0.23	[0.11, 0.35]
Standard IV: Teachers reflect on their practice.	City (2.97)	Suburb (2.85)	0.14	[0.05, 0.23]
		Town (2.59)	0.42	[0.33, 0.52]
		Rural (2.61)	0.40	[0.29, 0.52]
	Suburb (2.85)	Town (2.59)	0.29	[0.20, 0.39]
		Rural (2.61)	0.27	[0.16, 0.38]
Element A: Use of student learning analyses to improve practice.	City (3.08)	Suburb (2.9)	0.19	[0.10, 0.28]
		Town (2.65)	0.42	[0.33, 0.52]
		Rural (2.71)	0.37	[0.26, 0.49]
	Suburb (2.9)	Town (2.65)	0.26	[0.17, 0.35]
		Rural (2.71)	0.20	[0.09, 0.31]
Element B: Professional growth linked to goals.	City (2.83)	Suburb (2.7)	0.14	[0.06, 0.23]
		Town (2.53)	0.30	[0.20, 0.40]
		Rural (2.4)	0.44	[0.32, 0.56]
	Suburb (2.7)	Town (2.53)	0.17	[0.08, 0.26]
		Rural (2.4)	0.31	[0.20, 0.42]
Element C: Response to complex, dynamic environment.	City (2.94)	Town (2.55)	0.37	[0.27, 0.47]
		Rural (2.64)	0.28	[0.17, 0.40]
	Suburb (2.91)	Town (2.55)	0.35	[0.26, 0.44]
		Rural (2.64)	0.26	[0.15, 0.37]
Standard V: Teachers demonstrate leadership.	City (2.81)	Town (2.63)	0.25	[0.15, 0.34]
		Rural (2.69)	0.16	[0.05, 0.28]
	Suburb (2.78)	Town (2.63)	0.21	[0.12, 0.30]
Element A: Leadership in schools.	City (2.96)	Town (2.76)	0.22	[0.12, 0.32]
		Rural (2.78)	0.20	[0.08, 0.32]
	Suburb (2.91)	Town (2.76)	0.17	[0.08, 0.26]
Element B: Contributions to teaching profession.	Suburb (2.06)	Town (1.96)	0.10	[0.01, 0.19]
Element C: Advocacy for schools and students.	City (2.27)	Town (2.14)	0.13	[0.04, 0.23]
	Suburb (2.24)	Town (2.14)	0.11	[0.02, 0.20]
Element D: High ethical standards.	City (3.52)	Suburb (3.41)	0.16	[0.07, 0.24]
		Town (3.28)	0.33	[0.23, 0.42]
		Rural (3.27)	0.34	[0.23, 0.46]
	Suburb (3.41)	Town (3.28)	0.17	[0.08, 0.26]
		Rural (3.27)	0.18	[0.07, 0.29]

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Standard and Element	Teachers in this locale were rated higher than…	Teachers in this locale…	Cohen's d	95% CI
OVERALL PROFESSIONAL PRACTICE	City (2.69)	Town (2.52)	0.27	[0.17, 0.37]
		Rural (2.44)	0.41	[0.29, 0.52]
	Suburb (2.67)	Town (2.52)	0.23	[0.14, 0.32]
		Rural (2.44)	0.36	[0.25, 0.48]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-2. Comparison of Overall Professional Practice Ratings for District Performance Framework Groups by Standard and Their Associated Elements

Standard and Element	Teachers in this DPF were rated higher than…	Teachers in this DPF…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Accredited (2.45)	Distinction (1.84)	0.96	[0.74, 1.18]
		Improvement (2.33)	0.19	[0.06, 0.31]
		Prior. Imp. (2.25)	0.31	[0.16, 0.47]
	Improvement (2.33)	Distinction (1.84)	0.69	[0.44, 0.94]
	Prior. Imp. (2.25)	Distinction (1.84)	0.61	[0.34, 0.88]
A: Aligned instruction.	Accredited (2.54)	Distinction (2.00) Prior. Imp. (2.28)	0.71 0.34	[0.49, 0.93] [0.18, 0.50]
	Improvement (2.43)	Distinction (2.00)	0.52	[0.27, 0.77]
		Prior. Imp. (2.28)	0.18	[-0.02, 0.37]
	Prior. Imp. (2.28)	Distinction (2.00)	0.34	[0.07, 0.61]
B: Student literacy development.	Accredited (2.19)	Distinction (1.6)	0.83	[0.61, 1.05]
		Improvement (2.01)	0.25	[0.12, 0.37]
	Improvement (2.01)	Distinction (1.6)	0.49	[0.24, 0.74]
	Prior. Imp. (2.13)	Distinction (1.6)	0.73	[0.46, 1.00]
C: Mathematics.	Accredited (2.24)	Distinction (1.56)	0.81	[0.58, 1.04]
		Prior. Imp. (1.97)	0.32	[0.16, 0.48]
	Improvement (2.13)	Distinction (1.56)	0.57	[0.31, 0.83]
	Prior. Imp. (1.97)	Distinction (1.56)	0.45	[0.18, 0.72]
D: Disciplines.	Accredited (2.32)	Distinction (1.80)	0.77	[0.55, 0.99]
		Prior. Imp. (2.18)	0.20	[0.05, 0.36]
	Improvement (2.28)	Distinction (1.80)	0.65	[0.40, 0.90]
	Prior. Imp. (2.18)	Distinction (1.80)	0.50	[0.23, 0.77]
E: Interconnectedness of content areas/disciplines.	Accredited (2.52)	Distinction (1.88)	0.79	[0.57, 1.01]
		Prior. Imp. (2.32)	0.25	[0.09, 0.41]
	Improvement (2.41)	Distinction (1.88)	0.55	[0.30, 0.80]
	Prior. Imp. (2.32)	Distinction (1.88)	0.51	[0.24, 0.78]
F: Relevant instruction and content.	Accredited (2.51)	Distinction (1.80)	0.90	[0.68, 1.12]
		Prior. Imp. (2.29)	0.27	[0.12, 0.43]
	Improvement (2.49)	Distinction (1.80)	0.76	[0.51, 1.01]
		Prior. Imp. (2.29)	0.21	[0.01, 0.41]
	Prior. Imp. (2.29)	Distinction (1.80)	0.56	[0.29, 0.83]

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Standard and Element	Teachers in this DPF were rated higher than…	Teachers in this DPF…	Cohen's d	95% CI
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Accredited (2.78)	Distinction (2.12)	0.97	[0.75, 1.19]
		Prior. Imp. (2.56)	0.32	[0.16, 0.48]
	Improvement (2.69)	Distinction (2.12)	0.74	[0.49, 0.99]
	Prior. Imp. (2.56)	Distinction (2.12)	0.65	[0.38, 0.92]
A: Predictable and nurturing learning environment.	Accredited (3.26)	Distinction (2.72)	0.62	[0.40, 0.84]
		Prior. Imp. (3.05)	0.24	[0.08, 0.40]
	Improvement (3.25)	Distinction (2.72)	0.58	[0.33, 0.83]
		Prior. Imp. (3.05)	0.21	[0.02, 0.41]
	Prior. Imp. (3.05)	Distinction (2.72)	0.35	[0.08, 0.62]
B: Commitment to and respect for diversity.	Accredited (2.72)	Distinction (2.23)	0.70	[0.48, 0.92]
	Improvement (2.66)	Distinction (2.23)	0.53	[0.28, 0.78]
	Prior. Imp. (2.66)	Distinction (2.23)	0.55	[0.28, 0.82]
C: Engagement of students as individuals.	Accredited (2.56)	Distinction (1.67)	0.93	[0.71, 1.15]
		Prior. Imp. (1.99)	0.58	[0.43, 0.74]
	Improvement (2.45)	Distinction (1.67)	0.67	[0.42, 0.92]
		Prior. Imp. (1.99)	0.38	[0.18, 0.57]
	Prior. Imp. (1.99)	Distinction (1.67)	0.27	[0.00, 0.54]
D: Adaptation of teaching to benefit all students.	Accredited (2.34)	Distinction (1.95)	0.56	[0.34, 0.78]
	Improvement (2.35)	Distinction (1.95)	0.48	[0.23, 0.73]
	Prior. Imp. (2.3)	Distinction (1.95)	0.41	[0.14, 0.68]
E: Proactive, clear and constructive feedback.	Accredited (2.62)	Distinction (1.82)	0.83	[0.61, 1.05]
		Improvement (2.31)	0.32	[0.19, 0.44]
		Prior. Imp. (2.33)	0.30	[0.14, 0.46]
	Improvement (2.31)	Distinction (1.82)	0.47	[0.22, 0.72]
	Prior. Imp. (2.33)	Distinction (1.82)	0.54	[0.27, 0.81]
F: acceptable student behavior, efficient use of time and appropriate intervention strategies.	Accredited (2.72)	Distinction (2.10)	0.72	[0.50, 0.94]
	Improvement (2.85)	Distinction (2.10)	0.81	[0.56, 1.06]
		Accredited (2.72)	0.15	[0.02, 0.28]
	Prior. Imp. (2.69)	Distinction (2.10)	0.64	[0.37, 0.91]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Accredited (2.36)	Distinction (1.90)	0.78	[0.56, 1.00]
		Prior. Imp. (2.26)	0.17	[0.01, 0.32]
	Improvement (2.35)	Distinction (1.90)	0.69	[0.44, 0.94]
	Prior. Imp. (2.26)	Distinction (1.90)	0.53	[0.26, 0.80]
A: Knowledge of current developmental science.	Accredited (2.24)	Distinction (1.61)	0.86	[0.64, 1.08]
	Improvement (2.21)	Distinction (1.61)	0.69	[0.44, 0.94]
	Prior. Imp. (2.10)	Distinction (1.61)	0.55	[0.28, 0.82]
B: Instruction based on student assessments.	Accredited (2.20)	Distinction (1.69)	0.78	[0.56, 1.00]
	Improvement (2.09)	Distinction (1.69)	0.52	[0.27, 0.77]
	Prior. Imp. (2.13)	Distinction (1.69)	0.59	[0.32, 0.86]

Continued on next page.

Standard and Element	Teachers in this DPF were rated higher than…	Teachers in this DPF…	Cohen's d	95% CI
C: Knowledge of current research on effective instructional practices.	Accredited (2.71)	Distinction (1.83)	0.94	[0.72, 1.16]
		Prior. Imp. (2.54)	0.18	[0.02, 0.34]
	Improvement (2.67)	Distinction (1.83)	0.82	[0.57, 1.07]
	Prior. Imp. (2.54)	Distinction (1.83)	0.73	[0.46, 1.00]
D: Integration and use of appropriate available technology.	Accredited (2.13)	Distinction (1.77)	0.50	[0.28, 0.72]
		Improvement (2.04)	0.12	[0.00, 0.25]
		Prior. Imp. (1.91)	0.30	[0.14, 0.46]
	Improvement (2.04)	Distinction (1.77)	0.36	[0.11, 0.61]
E: High expectations for all students.	Accredited (2.08)	Distinction (1.59)	0.73	[0.51, 0.95]
		Prior. Imp. (1.96)	0.18	[0.02, 0.33]
	Improvement (2.08)	Distinction (1.59)	0.60	[0.35, 0.85]
	Prior. Imp. (1.96)	Distinction (1.59)	0.52	[0.25, 0.79]
F: Opportunities to work in teams and develop leadership qualities.	Accredited (2.48)	Distinction (2.14)	0.44	[0.22, 0.66]
	Improvement (2.58)	Distinction (2.14)	0.50	[0.25, 0.75]
		Accredited (2.48)	0.13	[0.00, 0.26]
		Prior. Imp. (2.44)	0.15	[-0.04, 0.35]
	Prior. Imp. (2.44)	Distinction (2.14)	0.32	[0.05, 0.59]
G: Effective communication.	Accredited (2.73)	Distinction (2.16)	0.68	[0.46, 0.90]
	Improvement (2.74)	Distinction (2.16)	0.66	[0.41, 0.91]
	Prior. Imp. (2.60)	Distinction (2.16)	0.51	[0.24, 0.78]
H: Appropriate assessment methods.	Accredited (2.11)	Distinction (1.41)	0.98	[0.76, 1.20]
		Prior. Imp. (1.92)	0.26	[0.10, 0.42]
	Improvement (2.05)	Distinction (1.41)	0.69	[0.44, 0.94]
	Prior. Imp. (1.92)	Distinction (1.41)	0.55	[0.28, 0.82]
Standard IV: Teachers reflect on their practice.	Accredited (2.82)	Distinction (2.01)	0.93	[0.71, 1.15]
		Prior. Imp. (2.53)	0.33	[0.17, 0.49]
	Improvement (2.77)	Distinction (2.01)	0.78	[0.52, 1.04]
		Prior. Imp. (2.53)	0.24	[0.04, 0.43]
	Prior. Imp. (2.53)	Distinction (2.01)	0.55	[0.28, 0.82]
A: Use of student learning analyses to improve practice.	Accredited (2.90)	Distinction (2.06)	0.87	[0.65, 1.09]
		Prior. Imp. (2.65)	0.26	[0.10, 0.41]
	Improvement (2.87)	Distinction (2.06)	0.75	[0.50, 1.00]
		Prior. Imp. (2.65)	0.20	[0.01, 0.40]
	Prior. Imp. (2.65)	Distinction (2.06)	0.56	[0.29, 0.83]
B: Professional growth linked to goals.	Accredited (2.70)	Distinction (1.78)	0.97	[0.75, 1.19]
		Prior. Imp. (2.23)	0.49	[0.33, 0.65]
	Improvement (2.67)	Distinction (1.78)	0.81	[0.56, 1.06]
		Prior. Imp. (2.23)	0.38	[0.19, 0.58]
	Prior. Imp. (2.23)	Distinction (1.78)	0.42	[0.15, 0.69]

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Standard and Element	Teachers in this DPF were rated higher than…	Teachers in this DPF…	Cohen's d	95% CI
C: Response to complex, dynamic environment.	Accredited (2.83)	Distinction (2.07)	0.74	[0.52, 0.96]
		Prior. Imp. (2.65)	0.17	[0.02, 0.33]
	Improvement (2.73)	Distinction (2.07)	0.60	[0.35, 0.85]
	Prior. Imp. (2.65)	Distinction (2.07)	0.55	[0.28, 0.82]
Standard V: Teachers demonstrate leadership.	Accredited (2.76)	Distinction (2.18)	0.81	[0.59, 1.03]
	Improvement (2.75)	Distinction (2.18)	0.72	[0.47, 0.97]
	Prior. Imp. (2.68)	Distinction (2.18)	0.60	[0.33, 0.87]
A: Leadership in their schools.	Accredited (2.88)	Distinction (2.23)	0.73	[0.51, 0.95]
	Improvement (2.98)	Distinction (2.23)	0.79	[0.54, 1.04]
		Accredited (2.88)	0.11	[-0.02, 0.24]
		Prior. Imp. (2.77)	0.22	[0.03, 0.42]
	Prior. Imp. (2.77)	Distinction (2.23)	0.54	[0.27, 0.81]
B: Contributions to teaching profession.	Accredited (2.03)	Distinction (1.36)	0.67	[0.45, 0.89]
	Improvement (1.97)	Distinction (1.36)	0.54	[0.29, 0.79]
	Prior. Imp. (2.14)	Distinction (1.36)	0.70	[0.43, 0.97]
C: Advocacy for schools and students.	Accredited (2.24)	Distinction (1.46)	0.85	[0.63, 1.07]
	Improvement (2.24)	Distinction (1.46)	0.73	[0.48, 0.98]
	Prior. Imp. (2.19)	Distinction (1.46)	0.71	[0.44, 0.98]
D: High ethical standards.	Accredited (3.41)	Distinction (3.02)	0.52	[0.30, 0.74]
		Prior. Imp. (3.18)	0.30	[0.15, 0.46]
	Improvement (3.40)	Distinction (3.02)	0.50	[0.25, 0.75]
		Prior. Imp. (3.18)	0.28	[0.08, 0.47]
OVERALL PROFESSIONAL PRACTICE	Accredited (2.64)	Distinction (2.00)	1.04	[0.82, 1.26]
		Prior. Imp. (2.45)	0.31	[0.15, 0.46]
	Improvement (2.57)	Distinction (2.00)	0.81	[0.56, 1.06]
	Prior. Imp. (2.45)	Distinction (2.00)	0.68	[0.41, 0.95]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-3. Comparison of Overall Performance Ratings for School Performance Framework Groups by Standard Ratings and Their Associated Elements

Standard and Element	Teachers in this SPF category were rated higher than . . .	Teachers in this SPF category.	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Improvement (2.42)	Turnaround (2.05) Prior.Imp. (2.23)	0.60 0.30	[0.34, 0.87] [0.13, 0.47]
	Performance (2.44)	Turnaround (2.05) Prior.Imp. (2.23)	0.64 0.33	[0.38, 0.90] [0.17, 0.50]
	Prior.Imp. (2.23)	Turnaround (2.05)	0.31	[0.01, 0.61]
Element A. Aligned instruction.	Improvement (2.43)	Turnaround (2.18) Prior.Imp. (2.18)	0.31 0.33	[0.05, 0.58] [0.15, 0.50]
	Performance (2.56)	Turnaround (2.18) Prior.Imp. (2.18) Improvement (2.43)	0.48 0.51 0.17	[0.23, 0.74] [0.34, 0.67] [0.08, 0.25]
Element B. Student literacy development.	Improvement (2.13)	Turnaround (1.93)	0.32	[0.05, 0.58]
	Performance (2.18)	Turnaround (1.93) Prior.Imp. (2.07)	0.38 0.16	[0.12, 0.63] [-0.01, 0.32]
Element C. Mathematics.	Improvement (2.27)	Turnaround (1.80) Prior.Imp. (2.02)	0.51 0.30	[0.25, 0.78] [0.12, 0.47]
	Performance (2.22)	Turnaround (1.80) Prior.Imp. (2.02)	0.47 0.24	[0.21, 0.73] [0.08, 0.41]
Element D. Disciplines	Improvement (2.28)	Turnaround (1.85) Prior.Imp. (2.15)	0.60 0.19	[0.33, 0.86] [0.01, 0.36]
	Performance (2.32)	Turnaround (1.85) Prior.Imp. (2.15)	0.66 0.25	[0.41, 0.92] [0.08, 0.41]
	Prior.Imp. (2.15)	Turnaround (1.85)	0.42	[0.12, 0.72]
Element E. Interconnectedness of content areas/disciplines.	Improvement (2.51)	Turnaround (2.24) Prior.Imp. (2.30)	0.34 0.26	[0.07, 0.61] [0.09, 0.44]
	Performance (2.49)	Turnaround (2.24) Prior.Imp. (2.30)	0.32 0.24	[0.05, 0.58] [0.08, 0.40]
Element F. Relevant instruction and content	Improvement (2.46)	Turnaround (2.03) Prior.Imp. (2.27)	0.47 0.23	[0.20, 0.74] [0.05, 0.40]
	Performance (2.51)	Turnaround (2.03) Prior.Imp. (2.27)	0.53 0.29	[0.27, 0.79] [0.13, 0.45]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Improvement (2.73)	Turnaround (2.38) Prior.Imp. (2.51)	0.46 0.31	[0.19, 0.72] [0.14, 0.49]
	Performance (2.78)	Turnaround (2.38) Prior.Imp. (2.51) Improvement (2.73)	0.53 0.39 0.07	[0.28, 0.79] [0.23, 0.55] [-0.01, 0.16]

Continued on next page.

Standard and Element	Teachers in this SPF category were rated higher than . . .	Teachers in this SPF category.	Cohen's d	95% CI
Element A: Predictable and nurturing learning environment.	Improvement (3.18)	Prior.Imp. (3.01)	0.18	[0.01, 0.35]
	Performance (3.28)	Turnaround (3.00)	0.31	[0.05, 0.57]
		Prior.Imp. (3.01)	0.29	[0.13, 0.45]
		Improvement (3.18)	0.11	[0.03, 0.20]
Element B: Commitment to and respect for diversity.	Improvement (2.69)	Turnaround (2.35)	0.42	[0.16, 0.69]
	Performance (2.73)	Turnaround (2.35)	0.47	[0.22, 0.73]
		Prior.Imp. (2.60)	0.17	[0.01, 0.33]
Element C: Engagement of students as individuals.	Improvement (2.52)	Turnaround (2.05)	0.42	[0.15, 0.68]
		Prior.Imp. (2.02)	0.49	[0.32, 0.67]
	Performance (2.54)	Turnaround (2.05)	0.44	[0.18, 0.69]
		Prior.Imp. (2.02)	0.52	[0.35, 0.68]
Element D: Adaptation of teaching for the benefit of all students.	Improvement (2.33)	Turnaround (1.92)	0.52	[0.25, 0.78]
	Performance (2.34)	Turnaround (1.92)	0.55	[0.29, 0.80]
	Prior.Imp. (2.34)	Turnaround (1.92)	0.51	[0.20, 0.81]
Element E: Proactive, clear and constructive feedback.	Improvement (2.59)	Turnaround (1.90)	0.67	[0.41, 0.94]
	Performance (2.57)	Turnaround (1.90)	0.66	[0.40, 0.92]
	Prior.Imp. (2.45)	Turnaround (1.90)	0.56	[0.26, 0.86]
F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	Performance (2.73)	Turnaround (2.47)	0.28	[0.02, 0.53]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Improvement (2.35)	Turnaround (1.98)	0.57	[0.31, 0.84]
	Performance (2.36)	Turnaround (1.98)	0.59	[0.34, 0.85]
		Prior.Imp. (2.27)	0.15	[-0.02, 0.31]
	Prior.Imp. (2.27)	Turnaround (1.98)	0.45	[0.14, 0.75]
Element A: Knowledge of current developmental science.	Improvement (2.26)	Turnaround (1.62)	0.73	[0.46, 1.00]
	Performance (2.22)	Turnaround (1.62)	0.69	[0.43, 0.94]
	Prior.Imp. (2.18)	Turnaround (1.62)	0.66	[0.36, 0.97]
Element B: Instruction based on student assessment.	Performance (2.19)	Prior.Imp. (2.09)	0.15	[-0.01, 0.31]
Element C: Knowledge of current research on effective instructional practices.	Improvement (2.73)	Turnaround (2.32)	0.43	[0.16, 0.69]
		Prior.Imp. (2.55)	0.19	[0.02, 0.36]
	Performance (2.68)	Turnaround (2.32)	0.38	[0.13, 0.64]
		Prior.Imp. (2.55)	0.14	[-0.02, 0.30]
Element D: Integrate and use of appropriate available technology.	Improvement (2.08)	Turnaround (1.56)	0.67	[0.40, 0.93]
	Performance (2.13)	Turnaround (1.56)	0.74	[0.48, 1.00]
	Prior.Imp. (2.04)	Turnaround (1.56)	0.67	[0.37, 0.98]
Element E: High expectations for all students.	Improvement (2.02)	Turnaround (1.65)	0.49	[0.22, 0.75]
	Performance (2.09)	Turnaround (1.65)	0.60	[0.35, 0.86]
		Prior.Imp. (1.97)	0.18	[0.02, 0.34]
		Improvement (2.02)	0.10	[0.01, 0.18]
	Prior.Imp. (1.97)	Turnaround (1.65)	0.44	[0.14, 0.74]

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Standard and Element	Teachers in this SPF category were rated higher than . . .	Teachers in this SPF category.	Cohen's d	95% CI
Element F: Opportunities to work in teams and develop leadership qualities.	Improvement (2.50)	Prior.Imp. (2.32)	0.22	[0.05, 0.40]
	Performance (2.49)	Prior.Imp. (2.32)	0.22	[0.05, 0.38]
Element G: Effective communication.	Improvement (2.70)	Turnaround (2.20) Prior.Imp. (2.56)	0.63 0.16	[0.36, 0.89] [-0.01, 0.34]
	Performance (2.74)	Turnaround (2.20) Prior.Imp. (2.56)	0.69 0.22	[0.43, 0.95] [0.05, 0.38]
	Prior.Imp. (2.56)	Turnaround (2.20)	0.47	[0.17, 0.77]
Element H: Appropriate assessment methods.	Improvement (2.07)	Turnaround (1.48)	0.69	[0.42, 0.95]
	Performance (2.11)	Turnaround (1.48)	0.74	[0.48, 1.00]
	Prior.Imp. (2.11)	Turnaround (1.48)	0.73	[0.42, 1.04]
Standard IV: Teachers reflect on their practice.	Improvement (2.84)	Turnaround (2.43)	0.41	[0.14, 0.67]
	Performance (2.79)	Turnaround (2.43)	0.37	[0.11, 0.62]
Element A: Use of student learning analyses to improve practice.	Improvement (2.93)	Turnaround (2.53) Performance (2.85)	0.36 0.08	[0.10, 0.63] [-0.01, 0.17]
	Performance (2.85)	Turnaround (2.53)	0.30	[0.04, 0.56]
	Prior.Imp. (2.98)	Turnaround (2.53)	0.42	[0.12, 0.72]
Element B: Professional growth linked to professional goals.	Improvement (2.69)	Turnaround (2.23)	0.42	[0.15, 0.68]
	Performance (2.67)	Turnaround (2.23)	0.42	[0.16, 0.67]
Element C: Response to complex, dynamic environment.	Improvement (2.86)	Turnaround (2.43) Prior.Imp. (2.66)	0.39 0.19	[0.12, 0.65] [0.01, 0.36]
	Performance (2.81)	Turnaround (2.43)	0.35	[0.09, 0.60]
Standard V: Teachers demonstrate leadership.	Improvement (2.77)	Turnaround (2.45)	0.38	[0.12, 0.64]
	Performance (2.75)	Turnaround (2.45)	0.37	[0.11, 0.62]
Element A: Leadership in schools.	Improvement (2.93)	Turnaround (2.63) Performance (2.86)	0.32 0.08	[0.06, 0.59] [-0.01, 0.16]
Element B: Contributions to teaching profession.	Improvement (2.06)	Turnaround (1.65)	0.35	[0.09, 0.62]
	Performance (2.02)	Turnaround (1.65)	0.33	[0.08, 0.59]
	Prior.Imp. (2.01)	Turnaround (1.65)	0.31	[0.01, 0.61]
Element C: Advocacy for schools and students.	Improvement (2.23)	Prior.Imp. (2.07)	0.16	[-0.02, 0.33]
	Performance (2.23)	Prior.Imp. (2.07)	0.16	[0.00, 0.32]
Element D: High ethical standards.	Performance (3.41)	Prior.Imp. (3.30) Improvement (3.35)	0.15 0.08	[-0.01, 0.31] [-0.01, 0.16]
OVERALL PROFESSIONAL PRACTICE	Improvement (2.61)	Turnaround (2.22) Prior.Imp. (2.47)	0.60 0.21	[0.33, 0.86] [0.04, 0.39]
	Performance (2.63)	Turnaround (2.22) Prior.Imp. (2.47)	0.65 0.25	[0.39, 0.91] [0.09, 0.41]
	Prior.Imp. (2.47)	Turnaround (2.22)	0.39	[0.09, 0.69]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-4. Comparison of Overall Professional Practice Ratings for Racial Groups by Standards and Their Associated Elements

Standard and Element	Teachers of this racial group were rated higher than…	Teachers of this racial group…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.				
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.				
Element E: Proactive, clear and constructive feedback.	White (2.56)	Non-White (2.33)	0.23	[0.01, 0.46]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.				
Standard IV: Teachers reflect on their practice.	White (2.79)	Non-White (2.51)	0.31	[0.09, 0.53]
Element A: Use of student learning analyses to improve practice.	White (2.87)	Non-White (2.63)	0.24	[0.02, 0.47]
Element B: Professional growth linked to professional goals.	White (2.66)	Non-White (2.39)	0.27	[0.05, 0.50]
Element C: Response to a complex, dynamic environment.	White (2.80)	Non-White (2.53)	0.26	[0.03, 0.48]
Standard V: Teachers demonstrate leadership.				
Element A: Leadership in schools.	White (2.87)	Non-White (2.63)	0.27	[0.04, 0.49]
OVERALL PROFESSIONAL PRACTICE				

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-5. Comparison of Overall Professional Practice Ratings for Gender by Standards and Their Associated Elements

Standard and Element	Teachers of this gender group were rated higher than…	Teachers of this gender group…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Female (2.44)	Male (2.33)	0.17	[0.09, 0.25]
Element A: Aligned instruction.	Female (2.52)	Male (2.43)	0.12	[0.04, 0.20]
Element B: Knowledge of student literacy development.	Female (2.20)	Male (2.02)	0.25	[0.17, 0.33]
Element C: Mathematics.	Female (2.23)	Male (2.13)	0.11	[0.03, 0.20]
Element E: Interconnectedness of content areas/disciplines.	Female (2.53)	Male (2.31)	0.27	[0.19, 0.35]
Element F: Relevant instruction and content.	Female (2.50)	Male (2.39)	0.13	[0.05, 0.21]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Female (2.78)	Male (2.64)	0.20	[0.12, 0.28]
Element A: Predictable and nurturing learning environment.	Female (3.27)	Male (3.13)	0.16	[0.08, 0.24]
Element B: Commitment to and respect for diversity.	Female (2.73)	Male (2.61)	0.16	[0.08, 0.25]
Element C: Engagement of students as individuals.	Female (2.53)	Male (2.39)	0.14	[0.06, 0.22]
Element D: Adaptation of teaching to benefit all students.	Female (2.36)	Male (2.23)	0.18	[0.10, 0.26]
Element E: Proactive, clear and constructive feedback.	Female (2.63)	Male (2.32)	0.32	[0.24, 0.40]
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategie	Female (2.74)	Male (2.63)	0.12	[0.04, 0.21]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Female (2.37)	Male (2.26)	0.18	[0.10, 0.26]
Element A: Knowledge of current developmental science.	Female (2.25)	Male (2.09)	0.21	[0.13, 0.29]
Element B: Instruction based on student assessments.	Female (2.20)	Male (2.09)	0.16	[0.08, 0.24]
Element C: Knowledge of current research on effective instructional practices.	Female (2.74)	Male (2.46)	0.29	[0.21, 0.37]
Element D: Integration and use of appropriate available technology.	Male (2.15)	Female (2.08)	0.09	[0.01, 0.17]

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Standard and Element	Teachers of this gender group were rated higher than…	Teachers of this gender group…	Cohen's d	95% CI
Element E: High expectations for all students.	Female (2.07)	Male (2.03)	0.06	[-0.02, 0.14]
Element G: Effective communication.	Female (2.75)	Male (2.58)	0.20	[0.12, 0.28]
Element H: Appropriate assessment methods.	Female (2.10)	Male (2.00)	0.13	[0.05, 0.21]
Standard IV: Teachers reflect on their practice.	Female (2.87)	Male (2.51)	0.41	[0.32, 0.49]
Element A: Leadership in schools.	Female (2.98)	Male (2.50)	0.49	[0.41, 0.58]
Element B: Contributions to teaching profession.	Female (2.73)	Male (2.42)	0.32	[0.24, 0.40]
Element C: Response to a complex, dynamic environment.	Female (2.86)	Male (2.59)	0.26	[0.18, 0.34]
Standard V: Teachers demonstrate leadership.	Female (2.77)	Male (2.65)	0.16	[0.08, 0.24]
Element A: Leadership in schools.	Female (2.92)	Male (2.72)	0.22	[0.14, 0.30]
Element B: Contributions to teaching profession.	Female (2.05)	Male (1.90)	0.15	[0.06, 0.23]
OVERALL PROFESSIONAL PRACTICE	Female (2.65)	Male (2.48)	0.27	[0.19, 0.35]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-6. Comparison of Overall Professional Practice Ratings for Highest Education Level Earned by Standards and Their Associated Elements

Standard and Element	Teachers with this degree were rated higher than…	Teachers with this degree…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Master's (2.48)	Bachelor's (2.35)	0.20	[0.13, 0.27]
	Advanced (2.64)	Bachelor's (2.35)	0.45	[0.05, 0.85]
Element A: Aligned instruction.	Master's (2.57)	Bachelor's (2.43)	0.18	[0.11, 0.25]
Element B: Student literacy development	Master's (2.22)	Bachelor's (2.09)	0.18	[0.11, 0.25]
Element C: Mathematics	Master's (2.26)	Bachelor's (2.15)	0.13	[0.06, 0.20]
	Advanced (2.52)	Bachelor's (2.15)	0.43	[0.03, 0.83]
Element D: Disciplines.	Master's (2.36)	Bachelor's (2.22)	0.20	[0.13, 0.27]
Element E: Interconnectedness of content areas/disciplines.	Master's (2.56)	Bachelor's (2.40)	0.19	[0.12, 0.26]
Element F: Relevant instruction and content.	Master's (2.54)	Bachelor's (2.41)	0.16	[0.09, 0.23]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Master's (2.81)	Bachelor's (2.67)	0.20	[0.13, 0.27]
	Advanced (3.04)	Bachelor's (2.67)	0.52	[0.12, 0.92]
Element A: Predictable and nurturing learning environment.	Master's (3.29)	Bachelor's (3.18)	0.12	[0.05, 0.19]
Element B: Commitment to and respect for diversity.	Master's (2.75)	Bachelor's (2.65)	0.14	[0.07, 0.21]
Element C: Engagement of students as individuals.	Master's (2.60)	Bachelor's (2.39)	0.21	[0.14, 0.28]
	Advanced (2.88)	Bachelor's (2.39)	0.48	[0.08, 0.88]
Element D: Adaptation of teaching to benefit all students.	Master's (2.39)	Bachelor's (2.27)	0.16	[0.10, 0.23]
	Advanced (2.68)	Bachelor's (2.27)	0.55	[0.15, 0.95]
Element E: Proactive, clear and constructive feedback.	Master's (2.63)	Bachelor's (2.47)	0.16	[0.09, 0.23]
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	Master's (2.78)	Bachelor's (2.64)	0.16	[0.09, 0.23]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Master's (2.40)	Bachelor's (2.29)	0.18	[0.11, 0.25]
Element A: Knowledge of current developmental science.	Master's (2.28)	Bachelor's (2.14)	0.18	[0.11, 0.25]
Element B: Instruction based on student assessment.	Master's (2.23)	Bachelor's (2.11)	0.18	[0.11, 0.25]
	Advanced (2.40)	Bachelor's (2.11)	0.43	[0.03, 0.83]

Continued on next page.

Standard and Element	Teachers with this degree were rated higher than…	Teachers with this degree…	Cohen's d	95% CI
Element C: Knowledge of current research on effective instructional practices.	Master's (2.76)	Bachelor's (2.60)	0.17	[0.10, 0.24]
Element D: Integrate and use of appropriate available technology.	Master's (2.14)	Bachelor's (2.06)	0.11	[0.04, 0.18]
	Advanced (2.36)	Bachelor's (2.06)	0.40	[0.00, 0.80]
Element E: High expectations for all students.	Master's (2.12)	Bachelor's (1.99)	0.19	[0.12, 0.26]
	Advanced (2.32)	Bachelor's (1.99)	0.47	[0.07, 0.87]
Element F: Opportunities to work in teams and develop leadership qualities.	Master's (2.52)	Bachelor's (2.44)	0.10	[0.03, 0.17]
Element G: Effective communication.	Master's (2.76)	Bachelor's (2.66)	0.12	[0.05, 0.19]
Element H: Appropriate assessment methods.	Master's (2.14)	Bachelor's (2.01)	0.17	[0.10, 0.24]
Standard IV: Teachers reflect on their practice.	Master's (2.88)	Bachelor's (2.69)	0.21	[0.14, 0.28]
Element A: Use of student learning analyses to improve practice.	Master's (2.96)	Bachelor's (2.77)	0.19	[0.12, 0.26]
Element B: Professional growth linked to professional goals.	Master's (2.77)	Bachelor's (2.54)	0.23	[0.16, 0.30]
Element C: Response to a complex, dynamic environment.	Master's (2.89)	Bachelor's (2.70)	0.18	[0.11, 0.25]
Standard V: Teachers demonstrate leadership.	Master's (2.83)	Bachelor's (2.65)	0.25	[0.18, 0.32]
Element A: Leadership in schools.	Master's (2.97)	Bachelor's (2.77)	0.22	[0.15, 0.29]
Element B: Contributions to teaching profession.	Master's (2.15)	Bachelor's (1.88)	0.26	[0.19, 0.33]
Element C: Advocacy for schools and students.	Master's (2.30)	Bachelor's (2.13)	0.18	[0.11, 0.25]
Element D: High ethical standards.	Master's (3.42)	Bachelor's (3.35)	0.09	[0.02, 0.16]
OVERALL PROFESSIONAL PRACTICE	Master's (2.68)	Bachelor's (2.53)	0.24	[0.17, 0.31]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

Exhibit E-7. Comparison of Overall Professional Practice Ratings for Grade Span Taught by Standard Ratings and Their Associated Elements

Standard and Element	Teachers in this gradespan were rated higher than…	Teachers in this gradespan…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Elementary (2.47)	Middle (2.39)	0.12	[0.03, 0.22]
		High (2.34)	0.20	[0.12, 0.28]
Element B: Student literacy development.	Elementary (2.18)	High (2.10)	0.11	[0.03, 0.19]
	Middle (2.17)	High (2.10)	0.09	[-0.01, 0.19]
Element C: Mathematics.	Elementary (2.35)	Middle (2.11)	0.30	[0.21, 0.39]
		High (2.01)	0.40	[0.31, 0.48]
	Middle (2.11)	High (2.01)	0.11	[0.00, 0.21]
Element D: Disciplines.	Middle (2.34)	Elementary (2.25)	0.13	[0.04, 0.22]
	High (2.35)	Elementary (2.25)	0.14	[0.06, 0.22]
Element E: Interconnectedness of content areas/disciplines.	Elementary (2.62)	Middle (2.39)	0.28	[0.19, 0.38]
		High (2.31)	0.38	[0.30, 0.46]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Elementary (2.82)	Middle (2.65)	0.24	[0.15, 0.34]
		High (2.66)	0.23	[0.15, 0.31]
Element A: Predictable and nurturing learning environment.	Elementary (3.31)	Middle (3.07)	0.28	[0.19, 0.37]
	High (3.21)	Middle (3.07)	0.15	[0.05, 0.25]
Element B: Commitment to and respect for diversity.	Elementary (2.76)	Middle (2.62)	0.20	[0.11, 0.29]
		High (2.65)	0.15	[0.07, 0.23]
Element C: Engagement of students as individuals.	Elementary (2.55)	Middle (2.50)	0.05	[-0.04, 0.14]
		High (2.41)	0.14	[0.05, 0.22]
Element E: Proactive, clear and constructive feedback.	Elementary (2.80)	Middle (2.37)	0.44	[0.34, 0.53]
		High (2.23)	0.59	[0.50, 0.67]
	Middle (2.37)	High (2.23)	0.16	[0.06, 0.26]
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	Elementary (2.77)	Middle (2.64)	0.15	[0.06, 0.24]
		High (2.66)	0.13	[0.04, 0.21]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.				
Element A: Knowledge of current developmental science.	Elementary (2.26)	Middle (2.19)	0.09	[0.00, 0.19]
		High (2.14)	0.16	[0.08, 0.24]
Element B: Instruction based on student assessments.	Elementary (2.22)	Middle (2.10)	0.18	[0.09, 0.27]
		High (2.13)	0.13	[0.05, 0.21]
Element C: Knowledge of current research on effective instructional practices.	Elementary (2.83)	Middle (2.56)	0.29	[0.19, 0.38]
		High (2.49)	0.36	[0.28, 0.44]
Element D: Integration and use of appropriate available technology.	Middle (2.22)	Elementary (1.98)	0.34	[0.25, 0.43]
	High (2.24)	Elementary (1.98)	0.36	[0.28, 0.44]

Continued on next page.

Standard and Element	Teachers in this gradespan were rated higher than…	Teachers in this gradespan…	Cohen's d	95% CI
Standard IV: Teachers reflect on their practice.	Elementary (2.96)	Middle (2.66)	0.34	[0.25, 0.43]
		High (2.55)	0.46	[0.38, 0.55]
	Middle (2.66)	High (2.55)	0.13	[0.02, 0.23]
Element A: Use of student learning analyses to improve practice.	Elementary (3.10)	Middle (2.73)	0.38	[0.29, 0.48]
		High (2.54)	0.59	[0.50, 0.67]
	Middle (2.73)	High (2.54)	0.20	[0.10, 0.30]
Element B: Professional growth linked to professional goals.	Elementary (2.79)	Middle (2.64)	0.16	[0.06, 0.25]
		High (2.41)	0.39	[0.31, 0.47]
	Middle (2.64)	High (2.41)	0.23	[0.13, 0.33]
Element C: Response to a complex, dynamic environment.	Elementary (2.92)	Middle (2.64)	0.27	[0.18, 0.36]
		High (2.68)	0.23	[0.15, 0.31]
Standard V: Teachers demonstrate leadership.	Elementary (2.80)	Middle (2.66)	0.19	[0.10, 0.29]
		High (2.68)	0.17	[0.08, 0.25]
Element A: Leadership in schools.	Elementary (3.01)	Middle (2.72)	0.32	[0.23, 0.42]
		High (2.700)	0.34	[0.26, 0.43]
Element B: Contributions to teaching profession.	Elementary (2.08)	Middle (1.89)	0.19	[0.09, 0.28]
		High (1.96)	0.12	[0.04, 0.20]
Element D: High ethical standards.	Elementary (3.43)	Middle (3.32)	0.15	[0.05, 0.24]
		High (3.35)	0.11	[0.03, 0.19]
OVERALL PROFESSIONAL PRACTICE	Elementary (2.68)	Middle (2.54)	0.22	[0.13, 0.31]
		High (2.52)	0.25	[0.17, 0.33]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.
5. Elementary = PK through 5th Grades, Middle = 6th through 8th Grades and High = 9th through 12th Grades.

Exhibit E-8. Comparison of Overall Professional Practice Ratings for Title I Status of School by Standards and Their Associated Elements

Standard and Element	Teachers in this Title I School status were rated higher than…	Teachers in this Title I School status…	Cohen's d	95% CI
Standard I: Teachers demonstrate mastery of and pedagogical expertise in the content they teach.	Not Served (2.45)	Targ. Asst. (2.25)	0.31	[0.19, 0.43]
		Schoolwide (2.36)	0.14	[0.05, 0.23]
Element A: Aligned instruction.	Not Served (2.56)	Targ. Asst. (2.27)	0.38	[0.27, 0.50]
		Schoolwide (2.42)	0.18	[0.09, 0.27]
Element B: Student literacy development.	Not Served (2.20)	Targ. Asst. (1.97)	0.31	[0.20, 0.43]
		Schoolwide (2.08)	0.16	[0.07, 0.25]
Element C: Mathematics	Not Served (2.21)	Targ. Asst. (2.11)	0.11	[0.00, 0.23]
Element D: Disciplines.	Not Served (2.35)	Targ. Asst. (2.09)	0.38	[0.26, 0.49]
		Schoolwide (2.18)	0.25	[0.16, 0.34]
Element F: Relevant instruction and content.	Not Served (2.52)	Targ. Asst. (2.31)	0.26	[0.14, 0.38]
		Schoolwide (2.38)	0.17	[0.08, 0.26]
Standard II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Not Served (2.78)	Targ. Asst. (2.60)	0.26	[0.14, 0.37]
		Schoolwide (2.68)	0.14	[0.05, 0.23]
Element A: Predictable and nurturing learning environment.	Not Served (3.26)	Targ. Asst. (3.13)	0.15	[0.03, 0.26]
		Schoolwide (3.19)	0.08	[-0.01, 0.17]
Element B: Commitment to and respect for diversity.	Not Served (2.73)	Targ. Asst. (2.56)	0.23	[0.12, 0.35]
		Schoolwide (2.65)	0.11	[0.02, 0.20]
Element C: Engagement of students as individuals.	Not Served (2.56)	Targ. Asst. (2.30)	0.27	[0.15, 0.38]
		Schoolwide (2.35)	0.21	[0.12, 0.30]
Element D: Adaptation of teaching to benefit all students.	Not Served (2.36)	Targ. Asst. (2.20)	0.23	[0.11, 0.34]
		Schoolwide (2.30)	0.08	[-0.01, 0.17]
Element F: Acceptable student behavior, efficient use of time and appropriate intervention strategies.	Not Served (2.72)	Targ. Asst. (2.59)	0.15	[0.03, 0.26]
Standard III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Not Served (2.37)	Targ. Asst. (2.23)	0.23	[0.12, 0.35]
		Schoolwide (2.28)	0.14	[0.05, 0.23]
Element A: Knowledge of current developmental science.	Not Served (2.24)	Targ. Asst. (2.13)	0.14	[0.03, 0.26]
		Schoolwide (2.12)	0.15	[0.06, 0.24]
Element B: Instruction based on student assessments.	Not Served (2.20)	Targ. Asst. (2.09)	0.16	[0.05, 0.28]
		Schoolwide (2.12)	0.12	[0.03, 0.21]
Element D: Integration and use of appropriate available technology.	Not Served (2.17)	Targ. Asst. (1.94)	0.31	[0.20, 0.43]
		Schoolwide (1.92)	0.34	[0.25, 0.43]

Continued on next page.

Standard and Element	Teachers in this Title I School status were rated higher than…	Teachers in this Title I School status…	Cohen's d	95% CI
Element E: High expectations for all students.	Not Served (2.10)	Targ. Asst. (1.90)	0.29	[0.18, 0.41]
		Schoolwide (1.98)	0.17	[0.08, 0.26]
Element F: Opportunities to work in teams and develop leadership qualities.	Not Served (2.51)	Targ. Asst. (2.36)	0.19	[0.07, 0.30]
Element G: Effective communication.	Not Served (2.76)	Targ. Asst. (2.50)	0.31	[0.19, 0.42]
		Schoolwide (2.64)	0.14	[0.05, 0.23]
Element H: Appropriate assessment methods.	Not Served (2.10)	Targ. Asst. (1.99)	0.15	[0.03, 0.26]
		Schoolwide (2.02)	0.10	[0.01, 0.19]
Standard IV: Teachers reflect on their practice.				
Element A: Use of student learning analyses to improve instruction.	Targ. Asst. (3.02)	Not Served (2.82)	0.20	[0.08, 0.32]
	Schoolwide (2.94)	Not Served (2.82)	0.12	[0.03, 0.21]
Standard V: Teachers demonstrate leadership**.**	Not Served (2.76)	Schoolwide (2.69)	0.10	[0.01, 0.19]
Element C: Advocacy for schools and students.	Not Served (2.25)	Targ. Asst. (2.08)	0.18	[0.06, 0.30]
		Schoolwide (2.15)	0.11	[0.02, 0.20]
Element D: High ethical standards.	Not Served (3.41)	Targ. Asst. (3.30)	0.15	[0.03, 0.26]
		Schoolwide (3.33)	0.11	[0.02, 0.20]
OVERALL PROFESSIONAL PRACTICE	Not Served (2.63)	Targ. Asst. (2.50)	0.21	[0.09, 0.32]

Notes:

1. Numbers in parentheses are group means.
2. Elements for which no statistically significant differences were found are not included in this chart. For clarity, standards for which no statistically significant differences were found are included with data cells shaded dark blue.
3. Items for which group differences are 0.10 or less are shaded tan.
4. Confidence Intervals that include zero are shaded light blue.

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Appendix F: Correlations of Overall Professional Practice Ratings Between Standards and their Associated Elements

Exhibit F-1. Correlations of Overall Professional Practice Ratings Between Standards 1-3 and Associated Elements

Exhibit F-2. Correlations Of Overall Professional Practice Ratings Between Standards 1-3 and Standards 4-5 and Their Associated Elements

Exhibit F-3. Correlations of Professional Practice Ratings Between Standards 4-5 and Their Associated Elements

Exhibit F-1. Correlations of Overall Professional Practice Ratings Between Standards 1-3 and Associated Elements

	S1	S1-a	S1-b	S1-c	S1-d	S1-e	S1-f	S2	S2-a	S2-b	S2-c	S2-d	S2-e	S2-f	S3	S3-a	S3-b	S3-c	S3-d	S3-e	S3-f	S3-g	S3-h
S1																							
S1-a	0.69																						
S1-b	0.66	0.49																					
S1-c	0.60	0.38	0.35																				
S1-d	0.69	0.50	0.51	0.41																			
S1-e	0.70	0.47	0.54	0.42	0.48																		
S1-f	0.68	0.49	0.45	0.35	0.52	0.51																	
S2	0.62	0.54	0.47	0.40	0.50	0.54	0.56																
S2-a	0.45	0.41	0.33	0.28	0.37	0.40	0.43	0.71															
S2-b	0.49	0.42	0.38	0.30	0.42	0.45	0.45	0.72	0.61														
S2-c	0.52	0.44	0.42	0.32	0.42	0.46	0.52	0.66	0.42	0.45													
S2-d	0.52	0.46	0.41	0.34	0.44	0.43	0.46	0.64	0.43	0.45	0.45												
S2-e	0.47	0.38	0.40	0.34	0.34	0.46	0.40	0.64	0.43	0.42	0.39	0.44											
S2-f	0.51	0.48	0.39	0.33	0.43	0.45	0.47	0.69	0.55	0.51	0.42	0.46	0.38										
S3	0.69	0.57	0.55	0.42	0.60	0.57	0.58	0.63	0.48	0.51	0.52	0.57	0.48	0.54									
S3-a	0.53	0.43	0.44	0.35	0.46	0.45	0.48	0.51	0.34	0.40	0.43	0.49	0.43	0.40	0.63								
S3-b	0.52	0.49	0.41	0.35	0.47	0.41	0.45	0.52	0.37	0.41	0.43	0.50	0.39	0.45	0.64	0.47							
S3-c	0.59	0.50	0.43	0.40	0.47	0.52	0.52	0.57	0.46	0.47	0.47	0.47	0.45	0.46	0.70	0.52	0.46						
S3-d	0.38	0.32	0.33	0.25	0.37	0.31	0.33	0.30	0.20	0.25	0.30	0.29	0.17	0.25	0.50	0.31	0.30	0.27					
S3-e	0.56	0.49	0.49	0.40	0.53	0.45	0.50	0.51	0.36	0.39	0.45	0.48	0.38	0.45	0.64	0.46	0.53	0.44	0.37				
S3-f	0.47	0.39	0.35	0.29	0.41	0.39	0.40	0.47	0.37	0.41	0.37	0.39	0.31	0.46	0.58	0.35	0.37	0.41	0.27	0.37			
S3-g	0.56	0.47	0.48	0.32	0.47	0.49	0.46	0.52	0.43	0.43	0.40	0.41	0.40	0.46	0.63	0.38	0.39	0.47	0.32	0.42	0.40		
S3-h	0.52	0.45	0.44	0.35	0.46	0.45	0.46	0.50	0.32	0.40	0.44	0.48	0.40	0.42	0.64	0.48	0.54	0.46	0.33	0.54	0.37	0.42	

Note:

	Correlations are within the weak range (0.1 to 0.3)
	No shading indicates correlations are within the medium range (0.3 to 0.5)
	Correlations are within the strong range (above 0.5)

Exhibit F-2. Correlations Of Overall Professional Practice Ratings Between Standards 1-3 and Standards 4-5 and Their Associated Elements

	S1	S1-a	S1-b	S1-c	S1-d	S1-e	S1-f	S2	S2-a	S2-b	S2-c	S2-d	S2-e	S2-f	S3	S3-a	S3-b	S3-c	S3-d	S3-e	S3-f	S3-g	S3-h
S4	0.55	0.47	0.44	0.41	0.44	0.49	0.47	0.58	0.46	0.46	0.46	0.46	0.52	0.45	0.56	0.49	0.46	0.56	0.26	0.43	0.40	0.46	0.45
S4-a	0.48	0.40	0.38	0.37	0.35	0.44	0.38	0.51	0.39	0.39	0.39	0.40	0.49	0.37	0.48	0.43	0.41	0.50	0.18	0.35	0.32	0.40	0.40
S4-b	0.50	0.43	0.39	0.37	0.39	0.44	0.44	0.51	0.41	0.40	0.42	0.40	0.43	0.40	0.50	0.45	0.41	0.49	0.27	0.40	0.36	0.39	0.42
S4-c	0.46	0.39	0.38	0.33	0.40	0.38	0.41	0.49	0.40	0.40	0.37	0.39	0.42	0.40	0.48	0.40	0.40	0.45	0.23	0.40	0.34	0.37	0.39
S5	0.48	0.40	0.40	0.34	0.40	0.42	0.42	0.54	0.43	0.44	0.40	0.44	0.46	0.42	0.51	0.44	0.41	0.46	0.29	0.43	0.35	0.41	0.42
S5-a	0.44	0.37	0.35	0.33	0.34	0.38	0.38	0.48	0.39	0.39	0.34	0.38	0.47	0.36	0.45	0.39	0.36	0.44	0.21	0.36	0.31	0.36	0.37
S5-b	0.41	0.36	0.36	0.30	0.37	0.35	0.35	0.41	0.29	0.31	0.32	0.36	0.34	0.35	0.43	0.39	0.36	0.35	0.30	0.39	0.30	0.32	0.36
S5-c	0.36	0.28	0.32	0.27	0.31	0.32	0.31	0.37	0.27	0.31	0.30	0.32	0.32	0.28	0.40	0.36	0.31	0.33	0.25	0.36	0.25	0.29	0.36
S5-d	0.36	0.31	0.26	0.24	0.28	0.32	0.34	0.47	0.50	0.42	0.31	0.32	0.38	0.40	0.38	0.28	0.28	0.36	0.16	0.27	0.29	0.38	0.25
Overall	0.71	0.59	0.56	0.49	0.58	0.61	0.60	0.72	0.56	0.57	0.58	0.57	0.58	0.58	0.70	0.57	0.57	0.64	0.39	0.58	0.49	0.57	0.57

Note:

	Correlations are within the weak range (0.1 to 0.3)
	No shading indicates correlations are within the medium range (0.3 to 0.5)
	Correlations are within the strong range (above 0.5)

Exhibit F-3. Correlations of Professional Practice Ratings Between Standards 4-5 and Their Associated Elements

	S4	S4-a	S4-b	S4-c	S5	S5-a	S5-b	S5-c	S5-d	Overall
S4										
S4-a	0.80									
S4-b	0.76	0.53								
S4-c	0.81	0.53	0.50							
S5	0.60	0.46	0.54	0.54						
S5-a	0.61	0.51	0.52	0.54	0.72					
S5-b	0.48	0.36	0.45	0.44	0.72	0.47				
S5-c	0.44	0.33	0.43	0.38	0.72	0.45	0.51			
S5-d	0.41	0.33	0.33	0.39	0.53	0.36	0.22	0.22		
Overall	0.74	0.62	0.65	0.63	0.68	0.60	0.54	0.50	0.50	

Note:

	Correlations are within the weak range (0.1 to 0.3)
	No shading indicates correlations are within the medium range (0.3 to 0.5)
	Correlations are within the strong range (above 0.5)