June 27, 2024

President Robert Stivers II, LRC Co-Chair

Speaker David Osborne, LRC Co-Chair

Jay D. Hartz, Director, LRC

Legislative Research Commission

Capitol Building, Room 300

Frankfort, KY 40601

Dear Senator Stivers, Representative Osborne, and Director Hartz:

The Kentucky Department of Education (KDE) is submitting to the Legislative Research Commission (LRC) the 2024-2026 biennial plan for validation studies to establish the validity of the assessment and accountability program as required by KRS 158.6453(14). The research and validation studies are aligned to assessment and accountability statute modifications passed by the Kentucky General Assembly.

SB 158 (2020) which became effective July 15, 2020, amended KRS 158.6455 to clarify the components of the statewide accountability system; required state indicators be evaluated on “status” and “change” and define the terms; required a school’s overall

performance, status and changes to be displayed on an online dashboard; amended KRS 160.346 to revise the criteria for determining targeted support and improvement and additional targeted support and improvement; removed the principal evaluation and

reassignment provisions from the audit and turnaround process; required the department to provide audit and turnaround intervention funds to districts identified for

comprehensive support and improvement; amended KRS 156.160 to prohibit high school graduation requirements from including a postsecondary readiness indicator used in the state accountability system or a minimum score on a statewide assessment; amended KRS 158.140 to prohibit a local board from requiring achievement of a minimum score on a statewide assessment as a high school graduation requirement; amended KRS 158.6453 to require scores on International Baccalaureate® (IB) examinations of 4 or higher to be included on the school report card; and added non-codified language encouraging the department to assign more weight in the accountability system for progress made by subgroups toward goals.

Senator Stivers, Representative Osborne, and Director Hartz

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SB 59 (2022), which became effective July 14, 2022, amended KRS 158.6453 to

delete the 10th-grade college admissions examination and amended KRS 158.6455 to add postsecondary readiness indicators to the statewide accountability system.

SB25 (2023), which became effective June 29, 2023, amended KRS 158.6455 to add new options for career readiness in the postsecondary readiness indicator of the statewide accountability system and reduced the number of measures needed for students to demonstrate academic or career readiness from two to one.

The evolving nature of Kentucky’s assessment and accountability program shapes the validation and research agenda for the biennium. This document reflects research contracted through Fiscal Years 2024 and 2026 for the Kentucky Summative Assessment (KSA) tests at grades 3-8, 10 and 11, the Career and Technical Education End-of-Program (CTE EOP) tests, and research related to the accountability system.

KDE will continue to engage the Kentucky Technical Advisory Committee (KTAC) on research needed for successful implementation of a valid assessment and accountability program.

Please let me know if you have questions or need additional information.

Sincerely,

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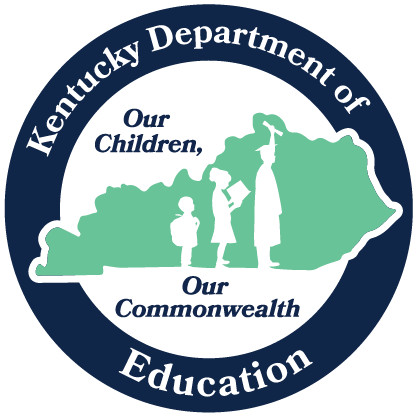
Robin Fields Kinney

Interim Commissioner of Education

Attachment: *Biennial Plan for Validation Studies 2024-2026*

cc: Rhonda Sims, KDE Associate Commissioner, Office of Assessment and Accountability

Jennifer Larkins, KDE Policy Advisor, Office of Assessment and Accountability



Kentucky Assessment System:

Validation and Research Agenda

Biennial Plan for Validation Studies

2024-2026

Robin Kinney

Interim Commissioner of Education

June 24, 2024



**Biennial Plan for Validation Studies**

According to KRS 158.6453(14), “The Department of Education (KDE) shall gather information to establish the validity of the assessment and accountability program. It shall develop a biennial plan for validation studies that shall include but not be limited to the consistency of student results across multiple measures, the congruence of school scores with documented improvements in instructional practice and the school learning environment, and the potential for all scores to yield fair, consistent, and accurate student performance level and school accountability decisions. Validation activities shall take place in a timely manner and shall include a review of the accuracy of scores assigned to students and schools, as well as of the testing materials. The plan shall be submitted to the Commission by July 1 of the first year of each biennium.

***Assessment and Accountability System***

Kentucky’s assessment and accountability system has been in transition since Senate Bill 1 (SB1), enacted during the 2009 Kentucky General Assembly, required numerous changes to the Commonwealth’s assessment and accountability program. SB 1 created a three-year interim period and a new state assessment program beginning in 2012.

In 2017, SB 1 was further amended to specify a new standards development/revision and adoption process. Health, physical education, computer science and career studies standards were revised during 2017. Reading and writing, and mathematics content standards were adopted by the Kentucky Board of Education (KBE) in spring 2019. Social studies standards were then adopted by the KBE in summer 2019. Revised science standards were adopted into law in July, 2023, with implementation in Kentucky classrooms beginning in the 2023-2024 school year. Subsequent revision cycles will rotate every six years.

Passage of Senate Bill (SB) 175 in 2019 amended KRS 158.6453 to revise the standards and assessments process review committee; amended KRS 158.6455 to revise the requirements for the state accountability system; amended KRS 160.346 to revise the requirements for the targeted support and improvement designation; require the KDE to report to the Interim Joint Committee on Education on assessment results as they relate to the new graduation requirement.

The General Assembly in 2020 passed SB 158. The law amended KRS 158.6455 to clarify the components of the statewide accountability system; required state indicators be evaluated on "status" and "change" and defined the terms; required a school's overall performance, status, and changes to be displayed on an online dashboard; amended KRS 160.346 to revise the criteria for determining targeted support and improvement and additional targeted support and improvement; removed the principal evaluation and reassignment provisions from the audit and turnaround process; required the department to provide audit and turnaround intervention funds to districts identified for comprehensive support and improvement; amended KRS 156.160 to prohibit high school graduation requirements from including a postsecondary readiness indicator used in the state accountability system or a minimum score on a statewide assessment; amended KRS 158.140 to prohibit a local board from requiring achievement of a minimum score on a statewide assessment as a high school graduation requirement; amended KRS 158.6453 to require scores on International Baccalaureate® (IB) examinations of 4 or higher to be included on the school report card; and added noncodified language encouraging the department to assign more weight in the accountability system for progress made by subgroups toward goals.

Then, during the 2022 legislative session, The General Assembly passed SB 59, which became effective July 14, 2022. SB 59 amends KRS 158.6453 to delete the tenth-grade college admissions examination and amends KRS 158.6455 to add postsecondary readiness indicators to the statewide accountability system.

Full implementation of the accountability system became effective in the 2022-2023 school year. This included the reporting on overall performance, and status and change for each accountability indicator.

***Summary of Biennial Plan Studies***

The evolving nature of Kentucky’s assessment and accountability program shapes the validation and research agenda for the biennium. This document reflects both research and related contracted work through Fiscal Years 2025 and 2026 for the:

* Kentucky Summative Assessment (KSA):
* Reading and mathematics at grades 3-8 and 10
* Science at grades 4, 7 and 11
* Social Studies at grades 5, 8 and 11
* Writing (on-demand and editing & mechanics) at grades 5, 8 and 11
* Alternate KSA
* Quality of School Climate and Safety (QSCS) survey
  + Career and Technical Education (CTE) End-of-Program (EOP) assessments

The Human Resources Research Organization (HumRRO) from Alexandria, Virginia with offices in Louisville, Kentucky and Education Measurement LLC are the vendors conducting the studies.

This section includes a brief description of each study currently planned for this biennium. A more detailed description of each study is present in the last section of this document.

1. **Annual Third-Party Checking of KSA Scaling and Equating**

Following a psychometric processing error in the 1990s, procedures were added to ensure a thorough, independent check of data before reporting. Psychometric processing continues to undergo parallel, independent, third-party analysis within the operational time frame to ensure the accuracy of the computations.

This project occurs in real time and mirrors the testing contractor’s schedule (July/August typically).

1. **Psychometric Consulting and Third Party Checking for the Alternate KSA**

In Spring 2023 the Alternate KSA moved to an Item Response Theory (IRT)-based model for scaling and equating, HumRRO worked closely with KDE’s other psychometric consultant (Dr. William Auty, Education Measurement LLC to develop a plan for processing data and assigning student scores. HumRRO will conduct independent replication of these processes. HumRRO will also produce classical test theory (CTT)-based item statistics to facilitate review of flagged field test items by content experts.

1. **Research and Validity Studies in Support of KRS 158.6543 and 158.6455**

The Department has identified several studies to support implementation of KRS 158.6543 and 158.6455. The studies are prioritized and completed within the guidelines of the current vendor contract(s).

The research activities cover a broad range and, among others, include the following possible studies:

1. Career and Technical Education End-of-Program Assessment (CTE EOP) Research
2. Validity Research
3. Consistency Across Measures
4. Student Classification Accuracy
5. School Classification Accuracy
6. Accountability Research

***Detailed Description of Biennial Plan Studies***

A more detailed description for each study is presented in this section. Each study is described in terms of:

* Purpose (Why do the research?)
* Audience (Who will use the results of the research and how will they use it?)
* Methodology (How will the research be conducted?)
* Final Product (How will the results be packaged and distributed?)

1. **Annual Third-Party Checking KSA Scaling and Equating1**

*Purpose (Why do the research?)*

Psychometric processing undergoes parallel, independent, third-party analysis within the operational time frame to ensure the accuracy of the computations.

*Audience (Who will use the results of the research and how will they use it?)*

All stakeholders interested in the processing accuracy for KSA will be assured by this work. However, the primary audience is the technical staff of the primary contractor and those who might perform a technical review or audit of the KSA. Psychometric information is required during the peer review process conducted by the United States Department of Education.

*Methodology (How will the research be conducted?)*

In parallel with the primary psychometric contractor (currently Pearson), the third-party contractor (currently HumRRO) will replicate all psychometric scaling and equating. Results will be shared between Pearson and HumRRO, with all discrepancies investigated by both parties until a common resolution is reached and applied.

*Final Product (How will the results be packaged and distributed?)*

The final product of this work is a brief technical report describing the third-party contractor’s results, including resolution of initial discrepancies with the primary contractor. For this research, the procedures and the intermediate product yielded from the procedures are perhaps more valuable than the final report. This intermediate product is a summary table in which both Pearson and HumRRO indicate mile-post findings for their scaling and equating work. The table is shared back and forth via secure web site and e-mail notifications. It is updated continually until agreement is reached for all KSA grade/subject combinations. Psychometric, data and contract managers with the KDE monitor this iterative process and associated communications.

1. **Psychometric Consulting and Third Party Checking for the Alternate KSA**

*Purpose (Why do the research?)*

Psychometric processing undergoes parallel, independent, third-party analysis to ensure the accuracy of the computations.

*Audience (Who will use the results of the research and how will they use it?)*

All stakeholders interested in the processing accuracy for Alternate KSA will be assured by this work. However, the primary audience is the technical staff of the primary contractor and those who might perform a technical review or audit of the Alternate KSA. Psychometric information is required during the peer review process conducted by the United States Department of Education.

*Methodology (How will the research be conducted?)*

In parallel with the psychometric consultant (Dr. William Auty, Education Measurement Consulting), the third-party contractor, HumRRO, will replicate all psychometric scaling. Results will be shared between Education Measurement Consulting and HumRRO, with all discrepancies investigated by both parties until a common resolution is reached and applied. HumRRO will also conduct independent replication of processes once they are established. HumRRO will produce classical test theory (CTT)-based item statistics to facilitate review of flagged field test items by content experts.

*Final Product (How will the results be packaged and distributed?)*

The final product of this work is a brief technical report describing the third-party contractor’s results, including resolution of initial discrepancies with the primary contractor. An interim product will be a summary table in which both Education Measurement Consulting and HumRRO indicate mile-post findings for their scaling work.

1. **Research and Validity Studies in Support of KRS 158.6543** **and 158.6455**

*Purpose (Why do the research?)*

The KDE is charged with “maintaining a vigorous ongoing program of research and documentation of the effects of the assessment and accountability system on Kentucky schools.” KDE must also comply with specific research found in Kentucky Revised Statutes (KRS) and to ensure compliance with the Every Student Succeeds Act (ESSA) of 2015 which reauthorizes the Elementary and Secondary Education Act (ESEA). The research activities cover a broad range and, among others, include the following possible studies. Studies are prioritized and completed within the guidelines of the current vendor contract(s).

*Audience (Who will use the results of the research and how will they use it?)*

This research will be used to inform policy stakeholders including the KBE, KDE, the Kentucky Technical Advisory Committee (KTAC), the Legislative Research Commission (LRC), the Education Assessment and Accountability Review Subcommittee (EAARS) the Office of Education Accountability (OEA) and the U. S. Department of Education.

*Methodology (How will the research be conducted?)*

Below we provide a high-level description about how each research study will be carried out. The specific methodology for each study will be determined in cooperation with KDE. HumRRO maintains strong research practitioners to design and implement research based on the custom needs of KDE.

1. **Career and Technical Education End-of-Program Assessment (CTE EOP) Research**

CTE EOP assessment scores may be used as an indicator of postsecondary readiness under the Kentucky Accountability System. To ensure the validity of inferences based on these scores, HumRRO will conduct linking and predictive studies between CTE EOP scores and KSA scores and between CTE EOP scores and standardized tests for college admissions (e.g., ACT, SAT) to examine strengths of relationships between CTE assessments and KSA and the predictive ability of CTE scores on college enrollment and success, respectively. CTE linking and predictive studies will be conducted in Spring 2025 and Spring 2026.

1. **Validity Research**

HumRRO will conduct a study to identify practices common in high-performing versus low-performing Kentucky schools. In Year 1 of the biennium (2024-2025), we will develop site visit protocols based on current best practices literature and conduct a small-scale pilot in schools located in the Louisville metropolitan area. During Year 2 (2025-2026), we will implement these protocols during site visits to a sample of Kentucky schools. We will work with KDE to develop the final sample of schools, but we anticipate that the sampled schools will reflect a range of grade configurations, geographical locations, school-level demographics, and levels of performance (both status and change) on the various accountability indicators.

1. **Consistency Across Time/Measures Analyses**

HumRRO will collect evidence of convergent and discriminant validity for KSA by calculating correlations among scores from common tests/content areas, and among scores from different tests/content areas. We will further explore the relations among test scores by conducting regression analyses to explore both method effects and differential impact on student subgroups, by conducting effect size analysis of student subgroup differences, and by calculating correlations among scores aggregated to the school level. We will examine correlations across years to ensure that score interpretations remain stable over time. Consistency across time/measures analyses will be conducted in Spring 2025 and Spring 2026.

1. **Student Classification Accuracy**

The Kentucky assessment system is administered annually in 22 different grade/subject combinations (e.g., Grade 4 Reading, Grade 8 Mathematics). Based on responses to test items, students are classified into one of four basic categories (Novice, Apprentice, Proficient and Distinguished, commonly referred to as NAPD) and the classification results are used to report school and district performance and federal accountability calculations. Given that no test is perfectly reliable, it is important to document the accuracy of these student classification decisions.

Using a previously established methodology, HumRRO will estimate the classification accuracy of Novice, Apprentice, Proficient, and Distinguished (NAPD) categories of the KSA assessments for Grades 3-8, 10 and 11. The resulting report will include proportions of students expected to be classified correctly versus those who are expected to be misclassified. Tables are generated from score-level accuracy results and can be aggregated to NAPD category and to dichotomous Proficient versus non-Proficient status. Student classification accuracy analyses will be conducted in Fall 2024 and Fall 2025.

1. **School Classification Accuracy**

Kentucky’s current accountability system as outlined in regulation 703 KAR 5:270 includes the following indicators: State Assessment Results in Reading and Mathematics; State Assessment Results in Science, Social Studies and Writing; English Learner Progress; Postsecondary Readiness (high school only); Graduation Rate (high school only); and Quality of School Climate and Safety. Indicators are combined to produce an overall school rating that is used to target low-performing schools for comprehensive support. Because of the implications that this overall rating has for schools, it is important to scrutinize how it is derived from the indicator data. Senate Bill 158 seeks to amend current statute to clarify the components of the statewide accountability system and to require that state accountability indicators be evaluated in terms of both "status" and "change."

HumRRO will work with KDE and the testing contractors to gather the appropriate data for estimating school-level classification accuracy given the accountability model. We will produce a report detailing the procedures to be used for quantifying school-level classification accuracy and note any potential difficulties with any of the indicators to be included in the school-level overall score. If an indicator must be omitted from the estimate, we will note the reasons for the omission and suggest ways to include it for future estimations. School classification accuracy analyses will be conducted in Spring 2025 and Spring 2026.

1. **Accountability Research**

Kentucky introduced change into the accountability model beginning in 2022-2023. For each accountability indicator, the current year score (status) and the difference in indicator score from the prior year to the current year (change) are calculated. Status and Change scores for each indicator are used to classify each school into an indicator performance level, using cut scores identified by KDE via a standard setting process.

HumRRO will conduct a standards validation study to verify that the indicator performance level cuts are functioning as intended. This will include basic descriptive statistics summarizing the numbers and percentages of schools, districts, and disaggregated student groups that are classified into each level of Status and Change for each indicator. We will also conduct correlational analyses to look at patterns among disaggregated student groups’ Status and Change classifications and overall school Status and Change classifications. We will also look at the relation between Status and Change for each indicator and if these patterns are consistent across disaggregated student groups. This will inform whether the combination of indicators might be masking areas where disaggregated student groups are underperforming or overperforming relative to the district or school overall. This accountability research study will be conducted in Spring 2025.

We will also conduct a study examining how long schools remain in each accountability color rating, how schools perform after changing their color rating, and the distribution of schools across the color ratings each year. Of particular interest will be how the various indicator scores change as schools change color ratings. We will conduct a series of case studies to examine success stories where schools have maintained their upward performance trends. This study will be conducted in Year 2 of the biennium (2025-2026).

*Final Product (How will the results be packaged and distributed?)*

The final product will be a report provided to KDE for each study. Consulting will be documented by email communication.