

**2024-2025 Data Forensics Scope of Work**

**1.0 Purpose/Background**

The Indiana Department of Education (IDOE) maintains several assessment programs for state and federal accountability, including the Indiana Learning Evaluation Assessment Readiness Network (ILEARN) assessment and the Indiana Reading Evaluation and Determination (IREAD) assessment.

The ILEARN assessment measures English/Language Arts (ELA) (grades 3-8), mathematics (grades 3-8), science (grades 4, 6, and high school Biology), and social studies (grade 5).

The IREAD assessment measures foundational reading skills in grades 2 and 3 There are two IREAD windows: spring and summer.

These assessments are administered through a Test Administration Vendor (currently Cambium Assessment Inc. (CAI)). Reporting follows each test administration and is dependent on the contractual reporting requirements for each independent program.

IDOE seeks a contractor to develop data forensic reports outlined in Table 1 below for the 2024-2025 ILEARN (ELA and Mathematics only) and IREAD test administrations. Aggregate units include test session, test administrator, and school.

ILEARN is a computer-adaptive assessment at the item level. IREAD is adaptive through auto-generated unique forms with the same rigor. Any data forensics methods should take the adaptive nature of the assessments into consideration and be appropriate for the specific assessment. This SOW describes processes currently in place. The respondent may recommend alternate research-based methods and appropriate flags as part of their response. IDOE values innovative practices and continual improvement.

Table 1. Data Forensics and Analysis

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| **Analysis/Report Name** | **Description** |
| Response Change | Response change analysis computes the number of wrong-to-right changes compared to total changes for each student. Individual students or aggregate units with large deviations (mutually agreed upon based on current research and standard industry practice in the number of changes are flagged and analyzed. |
| Data Forensics | (Test Administration Time) Test administration time analysis compares individual student total test administration time to the state average. Students or aggregate units with significant deviations in testing time are flagged and analyzed. |
| (Performance Change) Score changes are examined between summative test administrations using a regression model or other research-based method. The scores between past and current years are evaluated, with the current-year score regressed on the test score from the previous year. Between year comparisons of results, primarily focused at units of aggregation (e.g., schools, corporations) are performed starting with the second year of the test administration. A significant score gain or loss between grades is detected by examining the residuals for outliers as compared to distribution of changes. |
| (Person Fit) The person fit analysis compares student response patterns to the overall theoretical model used to analyze students and items. The respondent should recommend a method to compare as well as suggested flagging criteria. |

Additional Data Forensics Analysis:

In addition to what’s listed in Table 1, IDOE is interested in partnering with a vendor who can not only meet the requirements of this scope of work, but also proactively offer thoughtful, innovative suggestions for improving IDOE's data forensics measures.

IDOE is interested in vendor solutions for score change analysis associated with wrong-to-right changes

IDOE is interested in expanding data forensics analysis to include student response time and item revisit. These analyses can support understanding of effortful performance and/or detect item harvesting.

IDOE is interested in vendor solutions to detect AI-generated student responses.

If the vendor offers those analyses, or any additional data forensics analysis, those descriptions should be added as part of the proposal.

**1.1 Contractor Responsibilities/Deliverables**

1.1.1 Following each test administration, IDOE receives a state data file from the Test Administration Vendor. IDOE has established the data forensic threshold for flagging (i.e., indicating a concern) as being four or more standard deviations from the state mean. The selected contractor will use this file to develop Response Change and Data Forensic reports that will flag records that fall outside the established thresholds. IDOE will consider the flagging rules the Contractor includes as part of the solution for updates to the current process. The respondent should identify their process for detecting false positives.

1.1.2 After each assessment window ends, IDOE will send the Contractor a data file via an agreed-on secure method. The contractor will upon receipt of the state data file create both a student level and aggregate level Response Change Report and Data Forensic Report. Details regarding the report formats are shared in the Contractor Deliverable section of this Scope of Work document.

1.1.3 If there are sessions that are flagged at the aggregate level for either report (i.e., Response Change or Data Forensic), the contractor will also develop individual reports for IDOE to provide to identified school corporations. One set of individual reports will include the flagged sessions at the aggregate level for schools within a corporation. Another set of individual reports will include the students (from the student level file) from each flagged session for schools within a corporation. If a corporation does not have any sessions that were flagged at the aggregate level for either report (i.e., Response Change or Data Forensic), the contractor would not create individual reports for that corporation.

1.1.4 The contractor must provide details in their proposal regarding the rigorous quality control processes and measures that will be implemented to verify the reports developed by the contractor are accurate and error free. Sample reports of the analyses and school corporation reports or proposed structures must be submitted as examples alongside the proposal text documenting the contractor’s expertise in this type of analysis.

1.1.5 In addition to producing the two types of reports mentioned above, IDOE may also request the contractor to conduct further investigation into testing irregularities or security breaches beyond the initial data forensics analyses described for those reports, should these arise during the administration of either assessment program.

1.1.6 Requests for additional investigation would be on a limited basis and only in the event IDOE has significant concerns regarding test sessions for a particular school or corporation. The contractor should allocate a maximum of 20 hours for additional research, plus provide an hourly cost for such work.

1.1.7 The contractor must also indicate how it will securely maintain all data files for the duration of the contract, and either securely destroy files or return them to the state at the state’s discretion upon termination of the contract. In addition, the contractor must provide information on their procedures for ensuring confidentiality of all data reports, at the individual and aggregate levels.

1.1.8 Lastly, the contractor is required to assign Project Management staff to oversee coordination and define key milestones for project planning. Project Management staff must be identified in the proposal along with relevant qualifications.

**1.2 Project Meetings**

1.2.1 Project Kickoff Meeting: a kickoff meeting is required for project initiation. The purpose of the kickoff meeting is to introduce key stakeholders, points of contact for the project, address vendor or IDOE questions/concerns, provide an update on the contract status, and discuss next steps for project implementation.

* 1.2.1.1 The contractor shall schedule and facilitate one project kickoff meeting.
* 1.2.1.2 The kickoff meeting will be virtual (Microsoft Teams is preferred, but not required; if the vendor opts for another platform, it must be available via web browser at no additional cost and with no additional software or plugins required).
* 1.2.1.3 The contractor will draft a meeting agenda and provide it to the IDOE at least 72 hours in advance of the meeting. The contractor must provide meeting minutes for IDOE’s review and approval within 24 hours of the meeting completion.

1.2.2 Project Status Meetings: Project status meetings are critical for monitoring progress on project deliverables and ensuring the project remains on time and track to completion.

* 1.2.2.1 The contractor will establish and facilitate three project status meetings for each administration window (ILEARN, IREAD Spring, and IREAD Summer): prior to the start of each window of work, check-in/status during the analysis window and at the conclusion of the analysis for each assessment window.
* 1.2.2.2 Meetings must be virtual and should be hosted by the vendor using virtual conferencing software (Microsoft Teams is preferred, but not required; if the vendor opts for another platform, it must be available via web browser at no additional cost and with no additional software or plugins required).
* 1.2.2.3 After each assessment window and corresponding analysis, a meeting should be scheduled to review the data analyses reports with IDOE staff.
* 1.2.2.4 For status and review meetings, the contractor will draft a meeting agenda and provide to the IDOE at least 24 hours in advance of each meeting. The contractor will provide meeting minutes for IDOE’s review and approval within 24 hours of the meeting completion.
* 1.2.2.5 The contractor will present results of analyses to the Technical Advisory Committee (TAC) as needed following discussion with IDOE.

**1.3 Timeline for Project (January 2025-September 2025)**

Information regarding Indiana assessments can be accessed on the [Office of Student Assessment](https://www.in.gov/doe/students/assessment/) (https://www.in.gov/doe/students/assessment/) website.

* + 1. ILEARN

1.3.1.1 Applicable Grades and Content Areas:

* Grades 3-8 ELA and Mathematics (CAT)

1.3.1.2 Administration/Reporting Windows:

* Spring 2024 ILEARN 3-8
* Anticipated number of assessments is approximately 83,000 per grade level and content area

1.3.1.3 Anticipated Schedule for ILEARN

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| **Task** | **Begin** | **End** |
| Kickoff Call | January 2025 | January 2025 |
| Handoff of state data file from Cambium to contractor | 6/23/25 | 6/26/25 |
| Conduct Data Forensic Analysis; consult Cambium and IDOE as needed during the process | 6/27/25 | 7/18/25 |
| Submit Response Change Report and Data Forensic Report to IDOE; meet with IDOE to discuss the report | 7/21/25 | 7/25/25 |
| Complete Additional Analysis (if requested by IDOE) | Within 90 business days of IDOE’s receipt of reports |  |

1.3.2 Spring and Summer IREAD

1.3.2.1 Applicable Grade:

* Grades 2 and 3

1.3.2.2 Administration/Reporting Windows:

* Spring 2025
* Anticipated number of assessments is approximately 166,000
* Summer 2025
* Anticipated number of assessments is approximately 40,000

1.3.2.3 Anticipated Schedule for Spring 2025 IREAD

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| --- | --- | --- |
| **Task** | **Begin** | **End** |
| Handoff of state data file from IDOE to contractor | 3/31/25 | 3/31/25 |
| Conduct Data Forensic Analysis; consult Cambium and IDOE as needed during the process | 4/1/25 | 4/25/25 |
| Submit Response Change Report and Data Forensic Report to IDOE; meet with IDOE to discuss the report | 4/28/25 | 4/28/25 |
| Complete Additional Analysis (if requested by IDOE) | Within 90 business days of IDOE’s receipt of reports | |

1.3.2.4 Anticipated Schedule for Summer 2025 IREAD

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| **Task** | **Begin** | **End** |
| Handoff of state data file from IDOE to contractor | 7/25/25 | 7/25/25 |
| Conduct Data Forensic Analysis; consult Cambium and IDOE as needed during the process | 7/825 | 8/8/25 |
| Submit Response Change Report and Data Forensic Report to IDOE; meet with IDOE to discuss the report | 8/11/25 | 8/11/25 |
| Complete Additional Analysis (if requested by IDOE) | Within 90 business days of IDOE’s receipt of reports | |

**1.4 Staff Qualifications**

1.4.1 The staff lead for this work must have an advanced degree in psychometrics, educational measurement, or a closely related field, and significant experience in test security and/or data forensics.

1.4.2 The contractor must provide staff member names and resumes highlighting relevant experience to this work. It is expected that the contractor would include psychometric staff and project/program management staff who are well-versed in standardized assessments and the nuances associated with such work.

1.4.3 Prior work conducting these types of analyses for state level clients should be emphasized.