

Progress Monitoring Leads to Greater Overall ISIP Score and Percentile Growth Compared to Benchmarking

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Key Findings

- Progress monitoring students outperformed Benchmark students across all grade levels (K-3) and Tier 2 and 3 students.
- Differences in progress monitoring were significant, with students taking the ISIP every month for nine months outgaining those who took it only four to eight months of the school year.
- When stratified by grade level and/or tier, Benchmark students often had negative percentile growth compared to progress monitoring.

Overview

Benchmarking and progress monitoring are two approaches used to track student performance and improve student achievement. Benchmarking involves assessing students at set intervals to determine their overall proficiency and identify areas for improvement. This assessment may be done using standardized tests or other measures. Progress monitoring, on the other hand, involves frequent

assessments to track students' growth over time and identify areas where they may be struggling.

Both benchmarking and progress monitoring are useful for improving student achievement. Benchmarking can provide valuable information about overall school or classroom performance, allowing educators to identify areas of improvement at the classroom or school level. Administering standardized assessments at set intervals (e.g., Istation's Indicators of Progress, or ISIP™) informs educators of student performance relative to national or state standards. In addition, benchmarking can help schools and districts evaluate the effectiveness of their programs and policies. For instance, educators can determine whether changes to curriculum, changes to instruction, or other factors have had a positive or negative impact on student achievement when comparing student performance over time.

Progress monitoring allows educators to make data-driven decisions about instruction and interventions. Tracking

individual student progress over time, educators can identify specific areas where students are struggling and adjust their instruction accordingly in real time, which is not as possible with benchmarking. Targeted instruction has been shown to be more effective than a standardized approach (Biancarosa & Snow, 2006; Grimm et al., 2018; Moore, 2007; Torgesen et al., 2007; Wexler et al., 2018). Furthermore, progress monitoring is associated with greater gains in student achievement compared to benchmarking. In a meta-analysis of studies on progress monitoring, students who received progress monitoring showed larger improvements in reading skills compared to those who received benchmarking or no intervention (Fuchs & Fuchs, 2006). Similarly, a study by Stecker and colleagues found that progress monitoring led to greater gains for struggling students compared to benchmarking (Stecker et al., 2008). Recent research also shows that technology-based progress monitoring tools can help improve reading skills for struggling readers in early elementary school (Alqahtani, 2020; Silver-Pacuilla et al., 2004).

Therefore, this study examined overall ISIP scores and percentile gains in relation to benchmarking and progress monitoring. The study employed a quasi-experimental design to examine the following question:

Core Question: What is the effect of using the ISIP assessment as a benchmarking tool compared to progress monitoring on students' achievement as measured by ISIP from the beginning of the year (BOY) in August and September 2021 to the end

of the year (EOY) in May 2022? Do they vary:

- (1) for students by grade (K-3)?
- (2) by tier (Tier 2 and Tier 3)?
- (3) by number of reporting months?

Analytic Sample

Participants in this evaluation included kindergarten through third grade students at the state level in Idaho (n = 80,974) for the 2021-2022 school year. For those who had demographic data, the majority of students are White (92%), followed by multi-racial (3%), Black (1.5%), and American Indian/Alaska Native (1.5%). Approximately 32% were economically disadvantaged, and 14% were in special education. Students included in the current study had one set of non-missing overall ISIP Reading scores for BOY and EOY. Table 1 shows the total number of students by grade level and number of reporting months. Due to the large number of students having nine months of progress monitoring (PM), groups were created based on the number of reporting months:

- (1) **Benchmark (BM):** 2-3 months of reporting
- (2) **PM 1:** 4-8 months of reporting
- (3) **PM 2:** 9 months of reporting

Since the sample sizes were unbalanced between these groups, subsequent analyses examined the change in overall ISIP scores and percentiles with balanced samples. However, the results had minimal to no change, both for means reported and statistically significant results, so the total sample is reported. Lastly, these results are reported using the previous normed scaled scores.

Table 1. Total Population by Grade Level and Total Reporting Months

Number of Reporting Months	K	1st	2nd	3rd
1	203	166	170	214
2	742	673	667	671
3	466	476	439	446
4	361	363	411	488
5	552	539	512	838
6	630	430	531	644
7	1053	639	986	1126
8	1891	2296	2236	2510
9	14465	16565	16629	15642

Results

ISIP Overall Score and Percentile Gains

ISIP BOY-to-EOY Gains by Grade Level

ISIP score patterns were examined for students in Idaho elementary schools who used Istation for benchmarking and/or progress monitoring during the 2021-2022 school year. Average BOY-to-EOY score and percentile gains for students by grade level are shown in Table 2 and Table 3. Generally, ISIP score and percentile gains in PM 2 were significantly higher than both PM 1 and Benchmark groups in all grade levels. However, PM 1 still had significantly higher score and percentile gains than Benchmark students in all grade levels. Gains were largest in the earlier grades (kindergarten and 1st grade), with average BOY-to-EOY score gains of 23 to 31 points and 8 to 19 percentiles in both PM groups compared to 11 to 15 points and -11 to -10 percentiles in

Benchmark students. In addition, Benchmark students had negative percentile growth for all grade levels *except* 3rd grade, which had minimal growth.

Table 2. Average ISIP BOY-to-EOY Score Growth by Grade Level

Grade	BM	PM 1	PM 2
K	15.3	27.9*	31.4**
Sample Size	828	3355	14434
1st	10.9	22.7*	24.9**
Sample Size	766	3194	16490
2nd	11.9	19.0*	21.1**
Sample Size	722	3668	16554
3rd	10.8	16.0*	18.2**
Sample Size	749	4609	15605

*Indicates significant difference compared to Benchmark ($p < 0.05$)

+Indicates significant difference compared to PM 1 ($p < 0.05$)

Table 3. Average ISIP BOY-to-EOY Percentile Growth by Grade Level

Grade	BM	PM 1	PM 2
K	-9.7	11.5*	18.7**
Sample Size	828	3355	14434
1st	-10.9	7.6*	11.6**
Sample Size	766	3194	16490
2nd	-1.4	8.4*	11.1**
Sample Size	722	3668	16554
3rd	1.5	6.9*	10.4**
Sample Size	749	4609	15605

*Indicates significant difference compared to Benchmark ($p < 0.05$)
 +Indicates significant difference compared to PM 1 ($p < 0.05$)

ISIP BOY-to-EOY Gains by Tier

Average BOY-to-EOY score and percentile gains for students in Tier 2 and Tier 3 are shown in Table 4 and Table 5. Similar to grade levels, ISIP score and percentile gains in PM 2 were significantly higher than both PM 1 and Benchmark groups in both tiers, with PM 1 having significantly higher score and percentile gains than Benchmark students. Overall ISIP score gains were relatively similar in Tier 2 and Tier 3 students, with PM 1 students having 21 to 22 points and PM 2 groups having 25 to 26 points of growth, on average, compared to Benchmark students' 12 to 13 points of growth. More notable differences were observed for percentile growth. While Tier 2 PM 1 and PM 2 students experienced greater growth than their Tier 3 counterparts, Tier 2 Benchmark students had slightly negative percentile growth, whereas Tier 3 Benchmark students had positive percentile growth (-0.1 vs. +3.2).

Table 4. Average ISIP BOY-to-EOY Score Growth by Tier

Tier	BM	PM 1	PM 2
Tier 2	13.1	22.3*	24.6**
Sample Size	644	3288	16137
Tier 3	12.0	21.1*	25.8**
Sample Size	622	3597	14838

*Indicates significant difference compared to Benchmark ($p < 0.05$)
 +Indicates significant difference compared to PM 1 ($p < 0.05$)

Table 5. Average ISIP BOY-to-EOY Percentile Growth by Tier

Tier	BM	PM 1	PM 2
Tier 2	-0.1	15.3*	19.3**
Sample Size	644	3288	16137
Tier 3	3.2	12.8*	18.5**
Sample Size	622	3597	14838

*Indicates significant difference compared to Benchmark ($p < 0.05$)
 +Indicates significant difference compared to PM 1 ($p < 0.05$)

ISIP BOY-to-EOY Gains by Tier and Grade Level

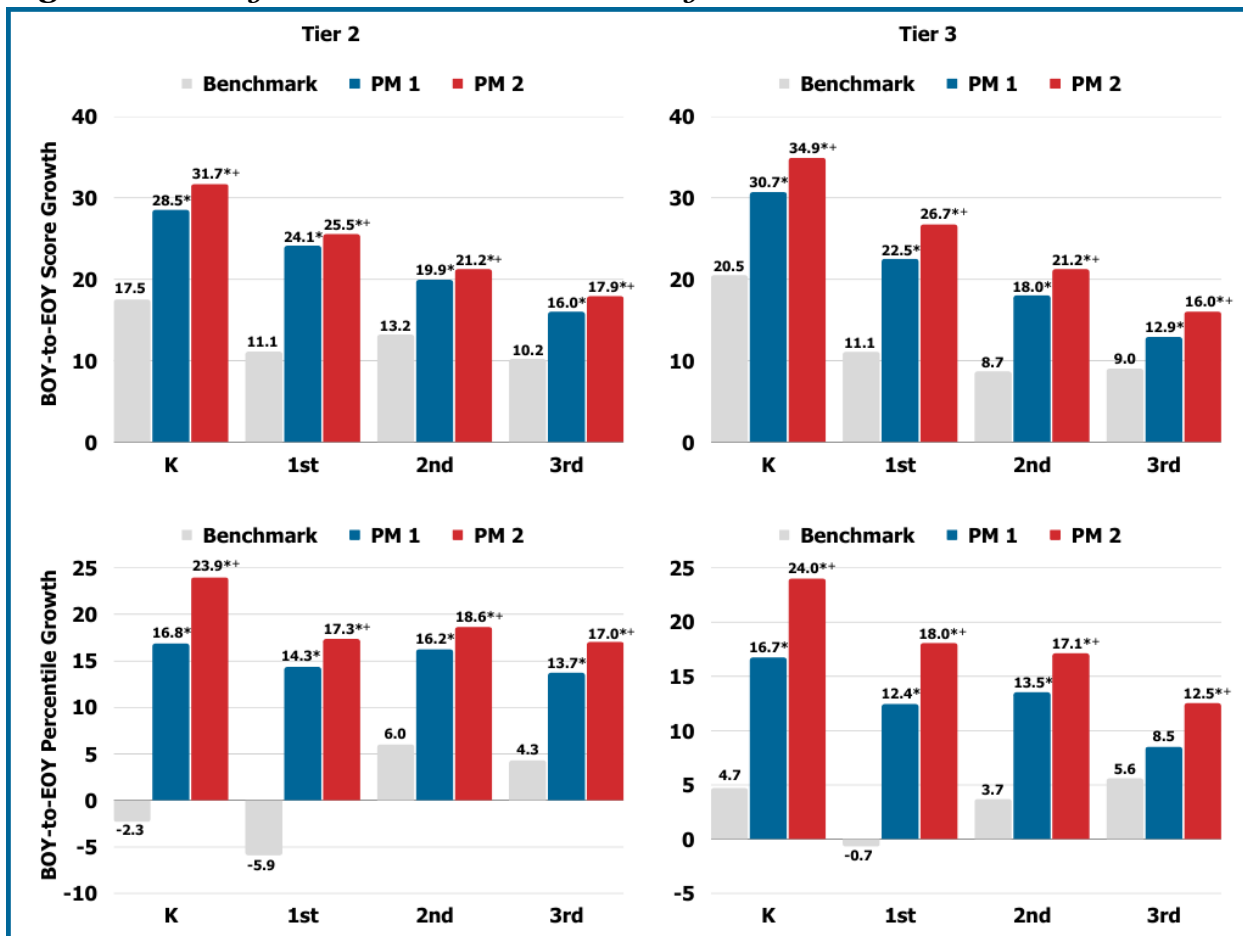
Average BOY-to-EOY score and percentile gains for students by grade and tier level are shown in Figure 1. In line with previous results, the largest gains were observed in kindergarten and 1st grade students. Overall ISIP score and percentile gains in PM 2 were significantly higher than both PM 1 and Benchmark groups when stratified by both grade and tier, with PM 1 students having significantly higher score and percentile gains than Benchmark students. However, one exception was in 3rd grade, where Tier 3 Benchmark and PM 1 students did not have statistically

significant differences in percentile growth (+5.6 vs. +8.5, respectively). There was positive score growth across both tiers and all grade levels, with Tier 2 PM students having gains of 16 to 32 points and Tier 3 PM students having gains of 13 to 35 percentiles, on average. However, Benchmark students across both tiers only had gains of 9 to 21 points in comparison.

Stark differences were observed for overall ISIP percentile gains. Tier 2 Benchmark students had negative

percentile growth in kindergarten and 1st grade and relatively small growth in 2nd and 3rd grade (+6.0 and +4.3, respectively), whereas PM groups had growth of 14 to 24 percentiles. Tier 3 PM groups experienced similar amounts of growth as Tier 2 students. However, Tier 3 Benchmark students only had slight negative percentile growth in 1st grade (-0.7), with relatively smaller growth observed in all other grades. Tier 3 PM groups had significantly higher growth of 12 to 24 percentiles, excluding 3rd grade PM 1 students.

Figure 1. Average ISIP BOY-to-EOY Growth by Tier and Grade Level



*Indicates significant difference compared to Benchmark ($p < 0.05$)

+Indicates significant difference compared to PM 1 ($p < 0.05$)

Conclusion

This study provides evidence that using the ISIP Reading assessment for progress monitoring can lead to greater overall ISIP scores and percentile growth. Furthermore, monthly ISIP reporting resulted in greater gains compared to both benchmarking and progress monitoring of 4 to 8 months. These gains were largest in kindergarten and 1st grade, even when stratifying by Tier 2 and Tier 3 students. Benchmarking still resulted in score and percentile gains in some instances, but there were also many occurrences of negative percentile growth.

Benchmarking and progress monitoring are two approaches that can help improve student achievement. While benchmarking is useful for evaluating overall performance and identifying areas for improvement, progress monitoring enables educators to make data-driven decisions about instruction and intervention, leading to greater gains in student achievement. Educators may use both approaches in conjunction to achieve positive outcomes but should at least implement a progress monitoring approach for better results.

References

- Alqahtani, S. S. (2020). Technology-based interventions for children with reading difficulties: A literature review from 2010 to 2020. *Education Tech Research Dev* 68, 3495-3525. <https://doi.org/10.1007/s11423-020-09859-1>
- Biancarosa, G., & Snow, C. (2006). *Reading next: A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York Portfolio List*. Alliance for Excellent Education.
- Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly*, 41(1), 93-99. <https://doi.org/10.1598/RRQ.41.1.4>
- Grimm, R. P., Solari, E. J., McIntyre, N. S., & Denton, C. A. (2018). Early reading skill profiles in typically developing and at-risk first grade readers to inform targeted early reading instruction. *Journal of School Psychology*, 69, 111-126. <https://doi.org/10.1016/j.jsp.2018.05.009>
- Moore, D. W. (2007). Direct instruction: Targeted strategies for student success. *National Geographic*, 1-3.
- Silver-Pacuilla, H., Ruedel, K., & Mistrett, S. (2004). *A Review of Technology-Based Approaches for Reading Instruction: Tools for Researchers and Vendors*. The National Center for Technology Innovation.
- Stecker, P. M., Fuchs, D., & Fuchs, L. S. (2008). Progress monitoring as essential practice within response to intervention. *Rural Special Education Quarterly*, 27(4), 10-17. <https://doi.org/10.1177/875687050802700403>
- Torgesen, J., Houston, D., Rissman, L. (2007). *Improving literary instruction in middle and high schools: A guide for principals*. Florida Center for Reading Research, Florida State University
- Wexler, J. K., D.M., Lemons, C.J., Mitchell, M., Clancy, E., Davidson, K.A., Sinclair, A.C., & Wei, Y. (2018). Reading

comprehension and co-teaching
practices in middle school
English language arts classrooms.
Exceptional Children, 84(4), 384-
402.