

WHITE PAPER

## ACADEMIC TREND

How Data-Driven District  
Administrators are Leveraging  
OMR to Enhance Accountability



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*Educators can use this paper to examine their own data-collection methods through the lens of OMR technology and learn to strike a productive balance of affordability, convenience, accuracy, and timing in their assessment process.*

## The data collection disconnect

Over the last two decades, we have experienced an unprecedented technology boom. However, an undeniable fact in today's "technology-driven" age is that with advances, come new and unexpected challenges. Today's standards-based instruction and assessment mandates have brought about testing technologies that, though state-of-the-art, still have numerous weak links in the chain that connects the classroom and the district.

Arguably the most critical link central to the information chain – data collection – is very often an afterthought. It does not take long for administrators to realize that a sound data-collection process is more important – and more difficult – than they had anticipated when trying to fulfill their many requirements for accountability within the district and classroom.



## Why the trend toward OMR?

Optical Mark Recognition (OMR) represents a technology adopted long ago by teachers for its convenience and ease of use. Recently, many district administrators have re-engaged with this trusted method of collecting data, because they are finding that OMR meets the needs of both the classroom and the district for these reasons:

**SPEED** Teachers can give immediate feedback to students and adjust lesson plans based on immediate test results.

**ACCURACY** OMR requires a minimal amount of human intervention (e.g., handling exceptions, entering scores manually, importing/exporting/reformatting data) and

decreases the corresponding margin of error. And, by pre-slugging forms with student and test information, schools can achieve even higher accuracy rates consistently and almost immediately.

### What Is OMR?

**Optical Mark Recognition (OMR)** is the technology of electronically extracting intended data from, most commonly, fields marked with #2 pencils, such as bubbles and fill-in fields on pre-printed forms.

OMR technology scans a printed form, reads predefined positions, records where marks are made on the form, and compares the responses to a “key” of correct responses. The result is a score based on the number of correct responses.

The error rate for OMR technology is less than 1%.

**CONVENIENCE** By using a method that teachers have long trusted and understood how to use, district administrators encounter less push back at the school-level and streamline the process of collecting data in common formats and exporting into existing systems.

**COST SAVINGS** When staff members are able to scan the forms once and easily reuse the test data all the way from pencils in the classroom to computers at the district-level, every link in the chain is more efficient, saving hundreds or thousands of precious dollars for the district.

**FLEXIBILITY** Districts and schools are finding that they can flexibly integrate the forms, scanners, software, and programming work of classroom-based OMR in parallel with other technologies already in use, without displacing them

or disrupting existing processes. Because of the common resistance to change within many districts, OMR represents a sensible method of collecting data from the classroom for district-wide reporting because of its compatibility with online testing applications, plain-paper installations and other OMR processes.

## Data collection: Districts speak out

What is the best combination of process, hardware and software to bridge the data-collection disconnect? In the past, the focus of technology has been limited to the classroom and/or school building: the best product was the one that graded tests efficiently and gave the teacher prompt information to adjust a lesson plan, intervene

with a student and/or re-teach a missed concept to the class the next day. But now that districts need to account for themselves and meet thresholds for Adequate Yearly Progress (AYP), these criteria apply all along the data-path from the classroom to the district’s report.

As the focus has changed, the needs have changed.

*“We need forms that are affordable.”*

Teachers recognize that until online testing becomes the norm, paper forms and scanners will still be necessary. While not every classroom today has the facilities for paperless testing, every classroom has pencils and will have them for a long time to come. As long as bubble forms remain a line item within a district’s budget, they will remain the strongest starting point for data collection.

Aside from cost benefits to the district, there is also enduring value in an OMR-scored test for the classroom. When a teacher can immediately return a graded test to a student, it closes an important loop in the learning process, allowing the student to learn from errors while the test content is fresh.

*“I need my data out of the scanner electronically.”*

This is a central paradox to the data-collection problem, as most basic OMR scanners that function solely to meet the teacher’s needs of scanning and scoring do not always retain and export data electronically, which serves the broader needs of the district. Conversely, the hardware and software that meet district needs are not always practical in the classroom. The solution to this paradox creates a shared need for electronic data at both levels:

### What is Pre-Slugging?

*Pre-slugging, also known as pre-coding, is the process of imprinting answer sheets with student and test information so that the scanner, the students and the teachers can read it. Without pre-slugging, over 20% of tests are typically invalidated by student errors in bubbling important ID fields. Pre-slugging boosts accuracy to nearly 100%. It also saves the time that students spend filling in ID fields and the time teachers spend correcting improperly bubbled fields.*

- Classrooms need software-driven, compact, in-classroom scanning hardware that’s affordable and accessible immediately, so analysis can be done within the classroom quickly;
- Districts need test data from classrooms so that information is fresh and can be imported into existing systems for the disaggregation and analysis that help improve student performance and accountability.

## The results support the trend

**Using OMR data collection, teachers have the information necessary for timely intervention with students, and districts can intervene promptly with principals and teachers to address areas of weakness.**

*“Every teacher in the core subject areas in grades 3-11 is fully aware that the district looks at the data we capture,”* said Dr. Kimber Knight, Instructional Technology Supervisor, Beaumont Independent School District in Texas. *“Teachers know that if we see questionable areas, we’ll be in their doorway the day after scanning, wanting to know what is being done to correct the weak areas. Core supervisors are also aware that assistant superintendents will be in their doorway wanting to know what they have done at the campus level to fix the weak areas. Accountability is at the forefront in our district from the campus level to the top. I can certainly see the results of curriculum recalibration and increased performance levels.”*

**Districts struggle to find an affordable solution that provides both immediate test results and the ability to move the data from classroom to the district for quick analysis and reporting.**

*“When schools scan in tests, teachers can easily click a button and upload the results into the district server. Within fifteen minutes, they can examine the data,”* said Greg Walker, Director of Academic Computing, Pinellas County School District in Florida.

**By greatly reducing the amount of human intervention, districts and schools assure themselves of greater accuracy and higher compliance in the data-collection process.**

*“The schools have the individual information, but we were lacking the reporting function at the district-level and would have to ask the teachers to provide this information with spreadsheets that added an extra step,”* said Dr. Vicki Edwards, Director of Assessment, Deer Valley Unified School District in Arizona. *“OMR data collection made it easier at the school-level because principals didn’t have to pull this together by grade. Teachers can now get an item analysis report that helps them practice for benchmarks and the state exams.”*

## Conclusion

OMR is a trusted technology for collecting data and is resuming its place as a critical link on the chain between classroom-level testing and district-level accountability – both primary drivers of student performance.

With increasing pressure on schools to demonstrate student improvement, districts have found OMR once again to be a valuable tool that allows teachers to focus on teaching and actively monitor student progress, while also delivering data quickly and affordably up the information chain for disaggregation and reporting. Although OMR is not a new technology by any means, the trend toward streamlining data collection from the classroom to the district has proven to increase accountability, save time and money, and markedly improve student performance.