Inquiry Teams: Data Use in Schools

Inquiry Teams are a form of Professional Learning Communities where the participants engage in “collaborative, data-driven inquiry and instructional decision making.” Teams need to access and collaboratively analyze data, identify root causes for students performance whether above or below expectations, and use the data to take instructional action.

Collecting data

If teams are examining data from NYSED assessments the teams should be examining building or district data from the IDW. The IDW reports provide a comparison of the local data to regional data to determine if questions are hard or easy and the alignment to the standards. Without the regional data, the team does not know if a low or high score was because the question was hard or easy or because teaching was weak or strong on that topic. The IDW also provides for disaggregation of the data by poverty, limited English proficiency, or special education status. The team can determine if students with special needs are performing better, poorer, or about the same as other students with those needs. A high school team would be able to determine if the English language learner program is stronger or weaker than other programs in other districts. Another question that teams can analyze with IDW data is “is our school improving in performance relative to other districts in Nassau County on the assessment that we are analyzing?”

District level benchmark or interim assessments should also be reviewed by the team. Benchmark assessments evaluate students’ knowledge and skills relative to other students in the district who are taking the same course. Benchmark assessments allow administrators to determine if all students in the district have the opportunity to learn content that the district deems is important.

Teams may also look at classroom sets of work to determine if students are being held to the same standard regardless of who the teacher is in the classroom. Reviewing classroom sets of student work makes it possible to determine errors in student thinking that need to be addressed.

Inquiry process

Collaborative data-based inquiry “occurs when groups of practitioners focus collectively on using data to investigate a question.” A structured inquiry process that is clearly articulated builds capacity for school improvement. The discussion needs to be about instruction and not about root causes beyond the teachers’ control. A protocol focuses teachers on making direct connections between their instructional strategies and student learning performance. The benefits of a structured inquiry process seem to be (Bocala, et al.):

- A sustained focus of the team on instructional issues
- Teacher reflection on current actions, assumptions, and beliefs
- A structure for repeated cycles of action and reflection

There are two viewpoints that data teams can take towards data. Teams should move between the two viewpoints. One viewpoint might be called “proving” and the other might be called “improving.” The proving viewpoint uses data to “show specific gains or loses in student learning.” The interest is in numeric scores and rankings. The focus is on proving effectiveness of instructional programs. Data teams with the improving viewpoint use data to rethink instructional practice.
Data inquiry cycle

During the first phase of the cycle, team members are determining the focus of their data study. The team is developing questions about student learning that can be answered through data. An elementary school principal may ask the question, “Why did my third grade students score the lowest on the mathematics domain of Numbers and Operations—Fractions on the NYSED assessment?” This may lead to additional questions such as, “What can I learn about the NYSED assessment items on fractions?”; “Where are fractions on the grade three curriculum?”; “Are the students of certain teachers more successful?”; “Do all students struggle with fractions or only certain subgroups?”; “Do students do well on the easy questions but not on the complex questions?”; “Are the grade three unit assessments aligned with the Common Core?”; “Are the grade two teachers teaching the pre-requisite skills for fractions?”; or “Which grade four students need to receive small group instruction?”

During the second phase of the cycle team members will gather the data necessary to discuss the focus question and the secondary questions. The principals initial concern may be verified by looking at the IDW GAP report. Data for the second question might include a copy of the NYSED released fraction questions and the IDW GAP report for released questions. The third question may require examining a copy of the districts grade three curriculum. The fourth question may require the printing of the IDW GAP released item report by building and by teacher. To answer the fifth question the IDW GAP released item report will need to be printed by English as a Second Language, Special Education, and Poverty. The sixth question can be answered by analyzing the IDW GAP report, the released item report, and the NYSED Performance Level Descriptions. The seventh question may be answered by examining common grade level assessments or publishers assessments. The eighth question can be answered by an examination of the plan books of grade two teachers and with a focus group discussion. The IDW WASA report will provide data for the ninth question.

During the third phase of the cycle, analyze and interpret data, teams will examine these multiple sources of data. Teams need to consider, “What do these different data sources tell us about the study of fractions in third grade in our building/district?”; “What strengths do we see?”; and “What areas of need do we see?” Teams should consider, “Which challenge should we consider first?” Teams should document what in the data supports their conclusions. The team may want to summarize their work in a report that translates the data into user-friendly visuals.

During the action phase, phase four, teams need to develop an action plan. The action plan to improve the learning of fractions by grade three students. should include a specific goal such as, “The overall percent correct for fraction questions on the NSYED assessment will improve by 10%. As a result, the percent correct for all items will improve.” It is recommended that the goal be specific, measurable, achievable, realistic, and timely.

The team will need to develop hypotheses about the root causes of the problem based on the available data. The members will then need to consider possible solutions to the root causes. The action plan should include specific steps that will be taken to improve instruction. The action plan should consider the data to be collected to monitor the progress of the plan. Suggestions for action steps for the third grade fraction challenge might be:

1. Common summative assessments will be given by all grade three teachers every two weeks during the teaching of fractions.
2. Visuals will be used during every fraction lesson to increase conceptual understanding.
3. Common differentiated practice sheets will be developed with questions to challenge students with strong conceptual understanding.
4. The principal will make weekly walk-about of every grade three classroom during the teaching of frac-
5. The principal will make weekly walk-abouts of every grade two classroom during the teaching of the lessons preparing grade two students for fractions.

6. Peer coaching will be provided to teachers whose students struggle more on the fraction items on the NYSED assessment the previous year.

7. Targeted AIS will be provided for English language learner students at least twice per week for 15 minutes per session during the teaching of fractions.

The fifth phase is to evaluate the success of the instructional intervention. Not only to evaluate whether the action steps were implemented and the degree to which they were implemented but to answer the question, “Did we improve student success on the NYSED fraction items by 10%? The team needs to consider:

1. Has this concern been resolved?
2. What new concern do we have?
3. Where did the plan succeed?

At the end of the fifth phase, the inquiry cycle will repeat. The inquiry team process may be used for concerns with shorter time frames than a year. There may be multiple teams addressing concurrent issues. There may be a team that focuses on student behavior with the goal of reducing student behavioral referrals. The goal for all inquiry teams is school improvement.