Tools For Schools®

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INSIDE

continuous IMPROVEMENT

Monitoring the quality of student learning

By Joan Richardson

Some teachers and principals think 'quality' and immediately see run charts and Pareto diagrams. Principal Mary Jo Taylor thinks 'quality' and has visions of sitting in green Jell-O.

Taylor will plop herself into a mound of green Jell-O if the 430 students at Ridgeview Elementary School in Ashtabula, Ohio reach their goal of reading one million minutes at home during the school year.

"They're really motivated to do this and they're reading like crazy. I'll be happy to sit in green Jell-O for them,'' Taylor said.

To Taylor, commitment to continuous improvement is the focus of the school's quality efforts, not making the charts and diagrams that map its progress.

The northeastern Ohio school has taken continuous improvement to heart. The principal and teachers monitor progress towards the school's learning goals. Students track their learning progress and monitor other issues they identify.

> "In quality schools, people monitor their own work, judge their own work, and help others to improve as they improve."
> — John Jay Bonstingl

Keeping the focus on what children are learning is essential, said John Jay Bonstingl, director of the Center for Schools of Quality in Columbia, Maryland. Quality schools create an environment in which no child is lost, he said. "In quality schools, people monitor their own work, judge their own work, and help others to improve as they improve,'' he said.

With the help of a parent at the school, Ridgeview joined Koalaty Kid, a program started by the American Society for Quality to introduce quality concepts to schools.

With funding from the state of Ohio and ASQ, 30 staff members and parents attended a three-day training seminar to learn about quality improvement and how to use various quality tools. During the first two years, an ASQ consultant visited the school six times, spending several hours each time working with staff members to refine their application of the tools to the school's goals.

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Quality

Monitoring the quality of student learning

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Then, through a community survey, Ridgeview identified five concerns:

- Parent involvement;
- Interventions for struggling students;
- Staff development;
- Lunch time/discipline issues; and
- Proficiencies in curriculum areas.

These concerns became the focus of five action teams composed of the principal, teachers, parents, and community representatives.

Teams are relatively independent at identifying problems in their areas and devising solutions. But they frequently overlap with the staff development team in determining how to help teachers develop the necessary knowledge and skills to implement new strategies.

For example, by examining test scores, the proficiency team discovered fourth graders were doing very poorly in algebra and data analysis on state math exams. The proficiency team and the staff development team developed a strategy to address this and ensure that teachers had the skills to implement the strategy.

Then, the teams devised a means for tracking those fourth graders through sixth grade. The school saw dramatic improvement: Algebra/data analysis was the area of "least concern'' when this group reached sixth grade.

Students also are deeply involved in improvement efforts. Every three weeks, all teachers do a one-minute reading fluency check, a two-minute math comprehension test and a three-minute writing test. Teachers record results on run charts — a line graph that plots information chronologically — which they share with students as early as second grade. (Other more in-depth assessments vary according to each teacher.)

"Students get really excited to see their run charts. It's very concrete. It's very easy for them to understand. When they see the lines go up and go down, they want to talk about what made a difference,'' said Tina Holden, a Title I teacher.

Teachers also chart a class average and a grade average in each area. As children become more knowledgeable about the process, teachers share those charts with them.

Holden said teachers encourage students to focus on their own growth and not to become overly concerned with how they compare to the group averages.

Bonstingl agrees. "Students must monitor their progress throughout. That puts them into the role of being a leader of their own educational life,'' he said.

Run charts are most useful with struggling students. Teachers often take this information to the intervention action team. Because of the quantity of information that's been collected, this team can quickly analyze the cause of the problem and develop a plan to intervene, Taylor said. "The intervention might be as simple as wanting a child to know eight new words in the next two weeks and providing ways to help him learn those,'' Taylor said.

The team meets again in two weeks to see if the strategy worked. If it did, then the team plans how to maintain it; if not, it tries a new approach. That cycle is repeated until the student shows progress.

"We've seen this work wonders for a child. Parents come to these meetings. When they see that everyone is very sincere about this, they really try to help too,'' Taylor said.

Students also get deeply involved in problem solving. This year, students have planned how to address several concerns, including home reading.

After collecting baseline data, students found many children weren't reading at home at all.

Using a fishbone diagram (see pages 4 and 5), they analyzed the reasons why. The main reason: too much television.

Next, they designed a program to encourage more reading. On their own, they came up with the green Jell-O incentive.

Taylor said her building has been transformed into a school focused on improving learning and creating a more supportive environment for children.

"When we began, we weren't really sure what we were getting into. But we have gone down a path of true systemic reform,'' Taylor said.

QUALITY IMPROVEMENT PROCESS

1. Plan: Develop a plan to improve.

☑ Identify the opportunity for improvement.

☑ Document "how we do things now.''

☑ Determine the root cause of the problem.

☑ Select a solution for improvement.

☑ Develop an action plan for implementing the improvement.

2. Do: Carry out your plan.

☑ Pilot the proposed changes on a small scale.

3. Check: Gather information and study results for the pilot project.

☑ Identify what you learned about the process and how you could improve upon it.

4. Act: Adjust the process, based on your new knowledge.

☑ Standardize the new methods.

☑ Review and repeat the steps.

To learn more about Koalaty Kid, contact the American Society for Quality, (800) 248-1946, ext. 8740.

Brainstorming for causes

COMMENTS TO FACILITATOR: Brainstorming is a method for tapping the resources of the entire group. Through brainstorming, a group strives for quantity of ideas, not quality. To ensure that that happens, the facilitator asks participants at the beginning to refrain from evaluating or criticizing ideas when they are announced.

TIME: 30 minutes.

SUPPLIES: Sticky notepaper, pens, pencils, chart paper, marking pen.

PREPARATION: Post chart paper on a wall where it can be seen clearly by all participants. Distribute sticky notepaper and writing tools.

Directions

1. Identify the problem. Write the problem on chart paper or a chalkboard at the front of the room.

2. Ask each participant to silently write as many causes for that problem as they can, using a separate sticky note for each cause. Allow five minutes of thinking/writing time.

3. In sequence, each participant shares one idea aloud with the group. Write each cause on the chart paper.

4. If an idea is unclear, allow participants to ask for clarification. The participant who suggested the cause should re-write the idea on another sticky note, using language that is more clear to everyone.

5. When the group runs out of causes, use prompts to elicit more ideas. If more are suggested, ask a recorder to write down those ideas on sticky notes.

6. To analyze the causes, lead the group through a discussion that answers five questions for each idea.

- What are the feelings about this cause?
- What are the positive aspects of this cause?
- What is wrong with this cause?
- What other ideas could be added to strengthen this cause?
- What additional information do we need about this cause?

7. Turn to pages 4-5 and use the fishbone diagram to continue working with causes identified through brainstorming.

Every system is designed to get the results it achieves.

Results are inevitable.

Fishing for root causes

The problem is not tests per se but the failure...to be results focused and data driven. Coaches regularly adjust performance in light of ongoing results, even dramatically altering their lesson plans in light of unexpectedly poor results.

– Grant Wiggins, director of the Center on Learning, Assessment and School Structure

COMMENTS TO FACILITATOR: This activity builds on the brainstorming described on Page 3. The chart is known variously as the Ishikawa, fishbone, and cause-and-effect diagram. In this activity, participants see how various causes relate to each other.

TIME: One hour.

SUPPLIES: Chart paper, sticky notepaper, large marking pen.

PREPARATION: Using chart paper, prepare large, blank fishbones *(see page 5)* for the total group (or subgroups if that is appropriate) and mount them on the walls.

Directions

1. Write the problem statement — the effect of the process — in the rectangular box at the head of the "fish.''

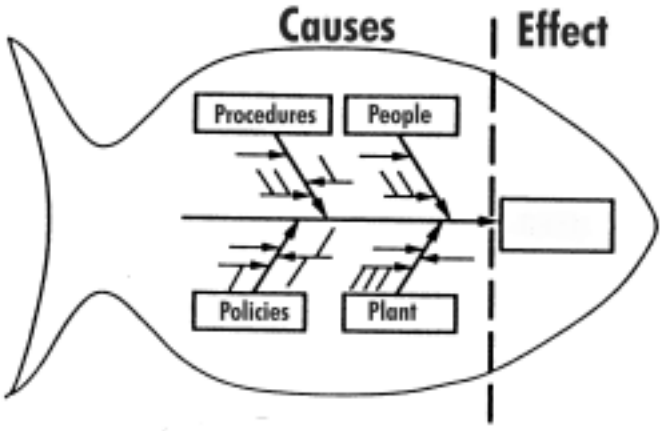
2. Have participants randomly stick their ideas onto the fish.

3. Silently, participants should group the sticky notes into categories. (Since they have heard these ideas expressed already, this process should take only a few minutes.)

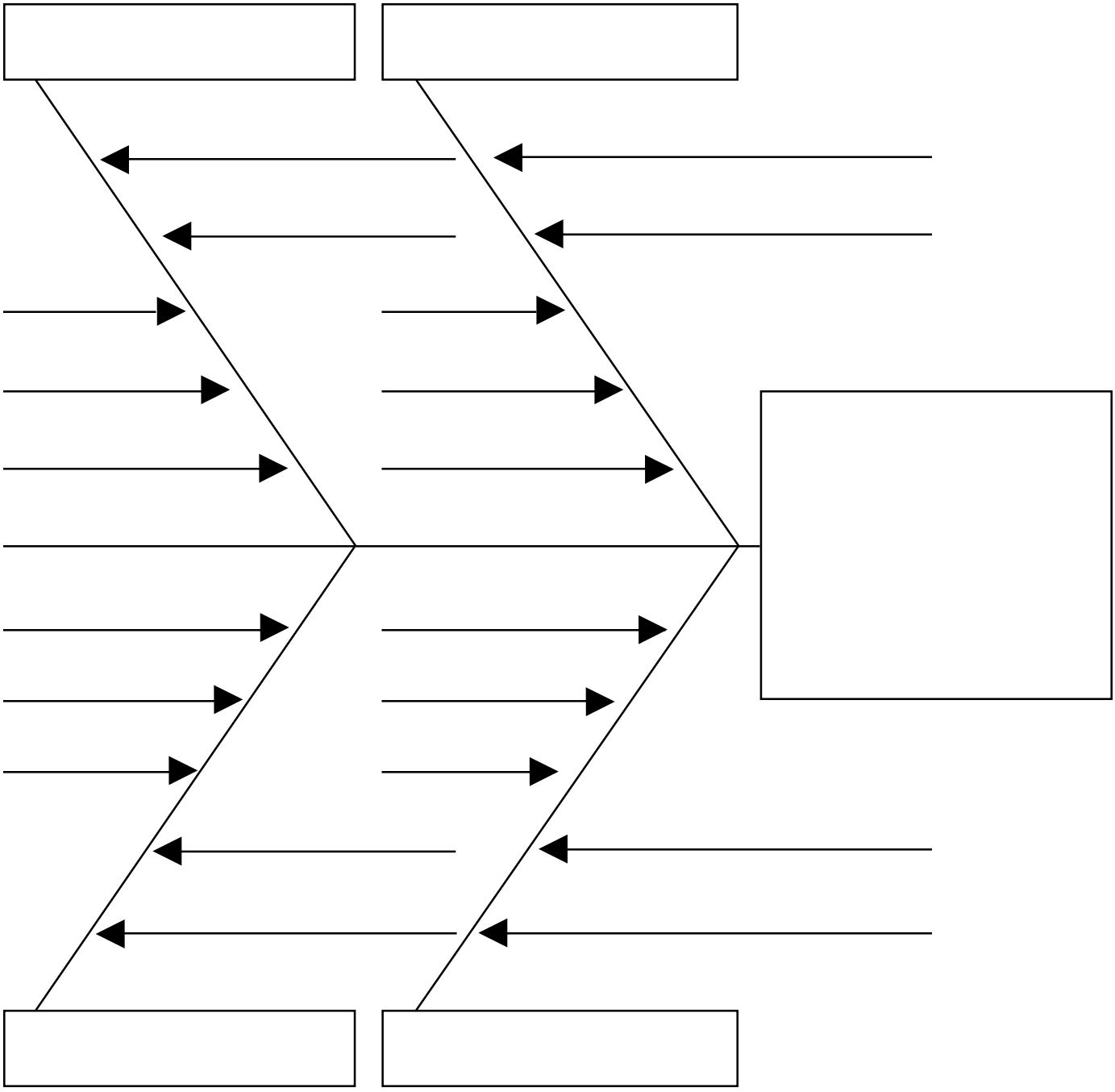
4. Lead a discussion about the groupings until the group reaches a consensus on how to label each category.

5. After participants agree on the groupings, each group should be labeled. Write those labels into the rectangular boxes at the outer edges of the fish skeleton.

An example of a diagram is shown below.



Fishbone Diagram



Identifying priorities

MINOR CAUSE

AVERAGE CAUSE

MAJOR CAUSE

COMMENTS TO FACILITATOR: This activity provides an efficient way to identify the priority causes. At the end of this activity, participants should be ready to begin developing action plans for their priority causes.

TIME: 30 minutes

SUPPLIES: Writing paper, pencils.

Directions

1. Ask the group to vote on each cause on the bones of the fishbone diagram. (If a large group has subdivided into smaller groups, each small group should select a new facilitator.)

2. Point to each cause and read it aloud. Instruct participants to vote in this way:

- Major cause — five fingers
- Average cause — three fingers
- Minor cause — one finger

3. Count the number of fingers for each cause and record the count next to the item on the diagram. Priority causes are items that received the greatest number of votes.

4. Identify between five and 10 causes that received the most votes. Post the sticky notes with those causes down one side of the chart paper. (Note: Every group should decide in advance how many causes to include on its priority list. These will become the focus of the group's action plans.)

5. On a separate piece of paper, ask participants to silently prioritize causes by assigning a number 1-6 to each cause, with 6 being the most significant cause.

6. Collect the rankings and calculate the average for each cause. Re-order the sticky notes according to the group's ranking.

Adapted from a presentation by James Cunningham, educational consultant, National School Services, Wheeling, Ill., during the 1997 NSDC Annual Conference.

Learning about QUALITY

- **Benchmarking: A Guide for Educators** by Sue Tucker. Corwin Press, 1996. Contains real-world strategies and techniques that teach how to make continuous improvement part of your school's plan. Stock #P666. Price: $15. Order from the American Society for Quality, (800) 248-1946.

- **Communicating Student Learning,** edited by Tom Guskey. ASCD, 1996. Offers guidelines and examples of reporting methods for K-12 grades and how to turn reports into good communication with parents. ASCD stock # 196000S79. Price: $21.95, members; $25.95, non-members. Phone (800) 933-2723.

- **"Data-Based Decision Making,"** by Jon Marshall. This chapter in *Professional Development in Learning-Centered Schools*, ed. by Sally Caldwell, offers an in-depth look at how to use data to explore a difficult educational issue. NSDC stock #B46. Price: $14, members; $17.50, non-members. Phone (800) 727-7288.

- **Improving Student Learning: Applying Deming's Quality Principles in Classrooms** by Lee Jenkins. Quality Press, 1997. Provides a wealth of examples of quality tools that have been used in K-12 classrooms. Answers critical questions about what to measure and how to measure improvement. Stock #H0921. Price: $30. Order from the American Society for Quality. Phone (800) 248-1946.

- **Results: The Key to Continuous School Improvement** by Mike Schmoker. ASCD, 1996. Author declares all school efforts should focus on results, that schools can improve if they examine and refine processes that most clearly contribute to results. ASCD stock #196017S79. Price: $16.95, members; $20.95, non-members. Phone (800) 933-2723.

- **Schools of Quality** by John Jay Bonstingl. ASCD, 1992. Offers insights into how to avoid common problems when implementing quality practices. ASCD Stock #196019N14. Price: $16.95, members; $20.95, non-members. Phone (800) 933-2723.

- **Tools and Techniques to Inspire Classroom Learning** by Barbara Cleary and Sally Duncan. Quality Press, 1997. Using actual classroom examples, demonstrates how teachers can use a variety of quality tools and techniques to advance learning. Stock No. H0952. Price: $20. Order from the American Society for Quality. Phone (800) 248-1946.

- **"Translating School Improvement into Numbers,"** by Joan Richardson. *School Team Innovator*, February 1997. This article describes a cycle for data-based decisions. Find this in the NSDC Online Library, www.nsdc.org/library or order a back copy by phoning (800) 727-7288.

If you have a resource that has been particularly helpful to you, please contact Tools editor Joan Richardson. See staff box for contact information.

Tools For Schools

Ask Dr. Developer

Dr. Developer has all the answers to questions that staff developers ask. (At least he thinks he does!)

Test results can help make better decisions

Q Tests, tests, tests....that's all you hear in schools. I'm tired of all this emphasis on test scores. We're letting tests drive the curriculum. Why can't we just teach children what they need to learn instead of worrying about "measuring the results'' all the time?

A Dr. Developer used to be skeptical about our increasing reliance on test scores. But I've been converted since realizing tests are just one tool schools can use to collect information about how well students are learning.

Data that compare, analyze, and inform are tremendously useful to us as we strive to make the best decisions about how to teach all children to high levels. Without objective data, we often believe we're doing better than we are. Without objective data, we might inadvertently miss information that could help us make better curriculum and instructional decisions.

When we've introduced a new strategy, examining the data we collect is one way to know when we've been successful. That helps keep all of us motivated to continue the hard work of reform. When we haven't been successful, that hard data can nudge us in a new direction.

If we're not getting the appropriate information from tests, then we need to identify other sources that will give us a full picture of a school's performance. What could we learn by examining student work? By maintaining student and teacher portfolios? What could we learn if we examined test results in light of attendance figures or if we disaggregated test data according to gender, race, and socioeconomic status?

Becoming knowledgeable about the results of your work also will improve the relationship between schools and the public. The public — including legislators — understands test scores. It's up to us to educate the public about other ways to measure success. We must learn not only how to use hard data to defend the choices we make but how to use that data to guide decisions.

Showing the connection between the work we do and the results we achieve is the ultimate test, wouldn't you agree?

Send your questions to Dr. Developer, 1128 Nottingham Rd., Grosse Pointe Park, Mich. 48230.

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