



Using PDSAs to Improve Student Achievement and Being *Pretty Darn Successful At it!*

by Jane M. Wheelless, principal, Penn Elementary School

Penn Elementary is a K-5 school in Prince William County, VA, located 20 miles south of Washington, D.C. School demographics include ethnic groups of 33.5% Black/African American; 27.5% white/non-Hispanic; 21% Hispanic; 11.3% Asian/Pacific Islands; and 6.6% other. Of all students, 32.2% are socio-economically disadvantaged and 13.9% have individual education programs. These numbers mirror the district's overall demographics.

Penn Elementary is in the fourth year of Baldrige in Education (BiE) deployment. Its journey toward becoming a BiE school began in the summer of 2006. Margaret Byrnes of Quality Education Associates Inc. trained the administration and a small cadre of staff in using quality tools in a school setting. This train-the-trainers model was used to lead the entire school staff in full deployment of quality systems and processes.

Penn Elementary has used the plan-do-study-act (PDSA) problem-solving cycle at the school, in teams, in classrooms and at student levels. This process is a rapid response to concerns, whether they are schoolwide or specific to an individual student's academic or behavioral goals. Positive results have included improved student academic achievement and behavior. Operational improvements have increased instructional time and improved hallway behavior and transitions. A standard PDSA seven-step model is used throughout the school to ensure problem-solving reliability. Figure 1 shows the PDSA storyboard. This diagram graphically depicts the quality tools that may be used at each step of the process. Figure 2 provides an adaptation of this diagram that is used at all levels at Penn Elementary.

Figure 1: PDSA Storyboard

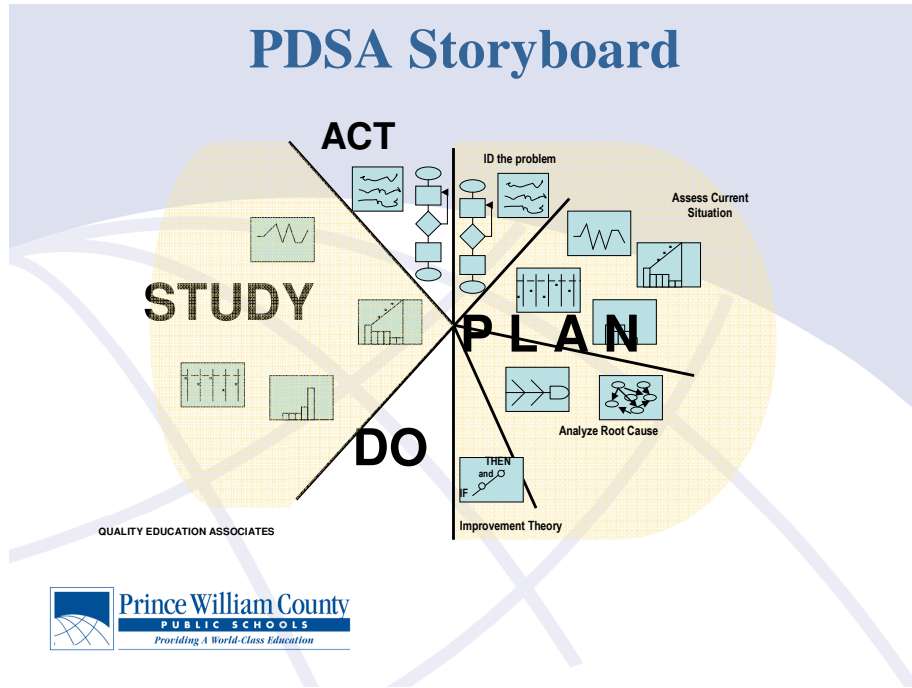
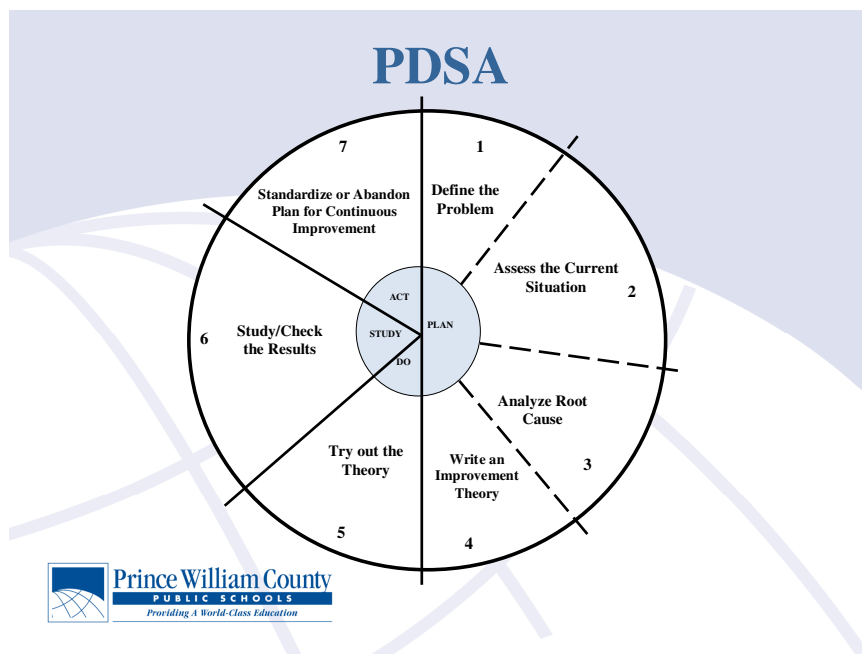


Figure 2: PDSA cycle used at Penn Elementary



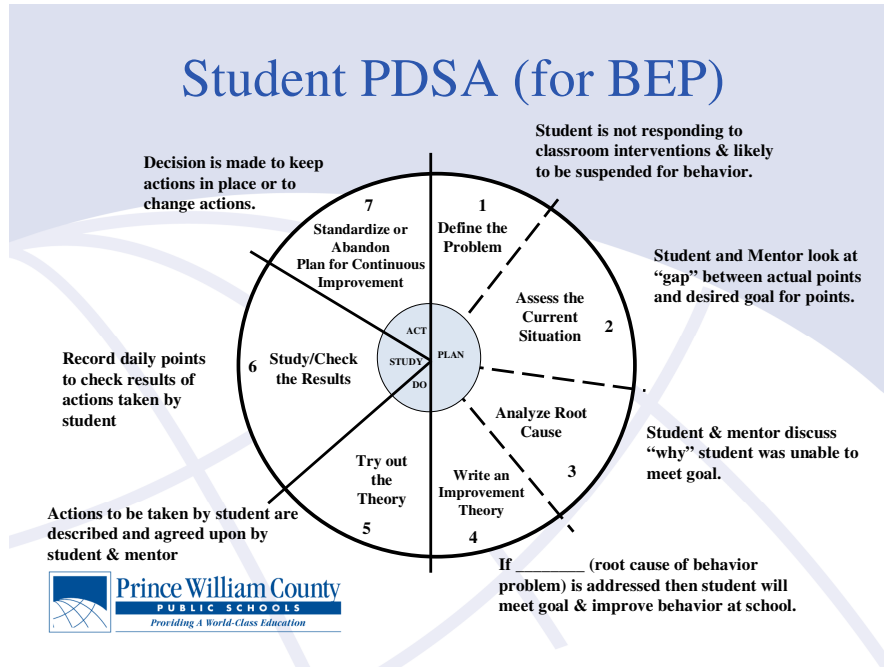


Bambi Minner, Penn's librarian, has used the PDSA cycle with individual students and small groups to improve their comprehension scores on accelerated reader (AR) tests. After looking at standards assessments in 2007, a dip was discovered in third-grade reading achievement. Our rapid response was to identify all students who did not pass the Reading Virginia Standards of Learning (SOL) Test. Each identified student took his or her own reading data results from AR testing and plugged it into a PDSA cycle to look at root cause through self-reflection of reading habits and to establish an action plan for improvement. Student action plans focused on changes in independent reading habits and the appropriate selection of books. As a result of this effort, SOL reading scores increased by 25% for this same group of students in 2008, leaping from a 66% pass rate to a 91% pass rate.

Physical education teacher Lauren Curran serves as coordinator for our behavior education program (BEP), which is a "check-in/check-out" daily mentoring program. Students using the BEP are given points for appropriate behavior throughout the school day, which is recorded on a daily progress report. This program uses a rapid, daily PDSA to record and analyze individual student behavioral data, look at root causes, determine an improvement theory if the student-set goal is not met, and develop an action for the student to put in place for the next school day.

Figure 3 shows how the PDSA cycle is used when a BEP is in place for an individual student. For the 2008-2009 school year, 15 Penn students who were not responding to classroom level interventions were placed on a BEP. These students were likely to be suspended during that year for behavioral reasons. By the end of the year, 80% of these students responded positively to the BEP intervention and were not suspended from school.

Figure 3: PDSA cycle for a Student Behavior Education Plan



PDSA examples

Penn teachers Mary Pyck and Sarah McGull, have used PDSA cycles at the classroom level to improve homework completion and add instructional time lost by a lengthy morning routine within their classrooms. In Pyck's third-grade classroom, she engaged her entire class in a PDSA problem-solving cycle. She noticed that only 56% (14 out of 25) of her students were regularly turning in completed homework. She shared this information with her class and guided them through the PDSA process to solve this problem. The students agreed the root cause was not having enough time at the end of the day to prepare for dismissal, and they were not always taking home what they needed to complete their homework. Pyck was teaching up to the last minute, and students were hurrying to pack up in a haphazard manner.

The action plan they designed included having Pyck end instruction earlier and having students use a flow-charted method to improve the efficiency of dismissal procedures. They tracked in-process data for two weeks and, through analysis, saw an improvement in homework completion from 56% to 92%. The class decided to keep the action plan in place for the remainder of the school year. In this case, two students—considered outliers—were not able to complete homework by using the PDSA

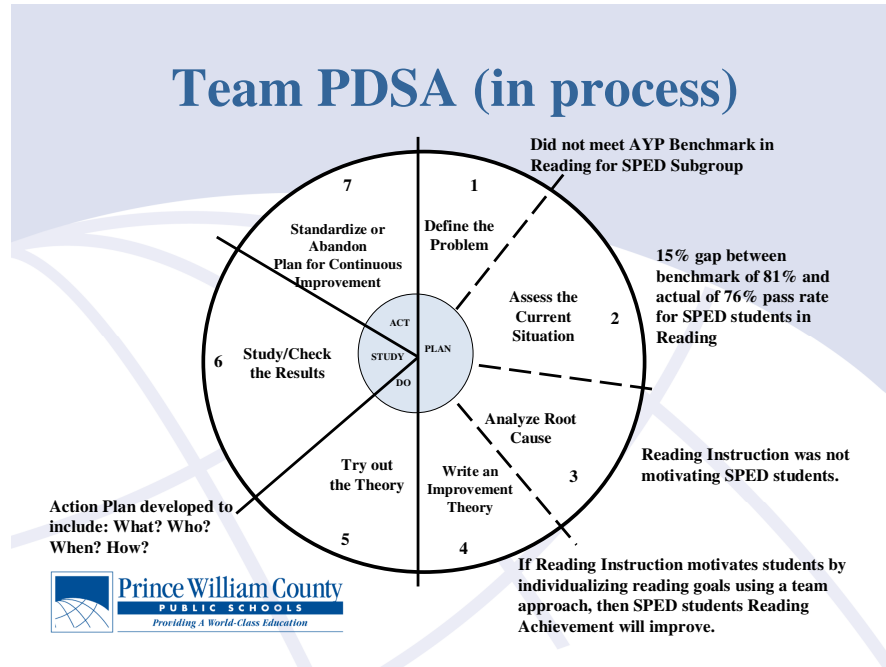


action plan, thereby necessitating Pyck to work individually with these students to gain the desired outcome.

McGull led her fifth-grade students through a similar PDSA when a lengthy morning entry routine was causing a major delay in the start of her instructional day. The students designed a morning routine with time allocations for each task that would allow for a 17-minute earlier start to the instructional day. They tracked the start time of the instructional day for six weeks, and they reported that during four of the six weeks they met their goal. The class celebrated each week that it made its goal and committed to making the new morning routine a standard procedure. McGull was happy, as well, to add more than an hour to her instructional time each week. The empowerment of her students to solve this problem was critical to making and sustaining this improvement.

At the team level, PDSAs are being used to address several issues identified through analysis of last year's SOL results. One concern was a dip from the excellence range in third-grade math scores from a 98% to a 90% pass rate. Another problem was that the subgroup of students with reading individualized education programs met the adequate yearly progress (AYP) benchmark through the proxy percent added rather than through their actual SOL reading scores. Currently, both issues have team action plans in place that are being studied through in-process data collection to reach the desired improvement. An example of a current team PDSA is depicted in Figure 4.

Figure 4: Team PDSA (work in progress)



Penn administration has led several schoolwide PDSAs addressing issues that interfere with teachers' ability to teach and students' ability to learn. Schoolwide classroom interruption issues and noisy hallway transitions have been improved through the use of the PDSA cycle at the building level. By changing office procedures, interruptions were reduced by 38% and unexpected classroom visits from parents were reduced by 73%. As a result of the PDSA, standard operating procedures are in place in this area. Schoolwide PDSAs were modeled by Penn administrators early in deployment of BiE to serve as teaching tools for use of PDSAs at all levels within the school.

Penn Elementary staff has learned many lessons through using PDSAs:

- If processes and systems are not monitored, they will deteriorate over time.
- Classroom PDSAs may include outliers, and individual plans may have to be developed in unique situations.
- If the correct root cause is not identified, the improvement theory may be flawed and desired outcomes may not occur.
- Use of a standard format by everyone within a school for the PDSA cycle will ensure fidelity to the process.



- Further deployment challenges include expanding PDSAs to all school teams, including those in the office, cafeteria and custodial area.

For the past two years, Penn Elementary has been recognized as a school of excellence by Prince William County Schools. This is the highest honor given to any school in the district. Criteria for winning the award includes: meeting the No Child Left Behind federal mandate by making AYP; full accreditation by Virginia's Department of Education; reduction in bottom quartile scores and increase in upper quartile scores on SOLs in all four core subjects; high satisfaction survey scores from all stakeholders; and meeting the Virginia Fitness benchmark scores for students in fourth and fifth grades. Since these awards were given in second and third year BiE deployment, it is recognized that a good school became a great school as quality systems and processes became a way of doing business.

As principal of a school nearing full deployment of BiE, it has been an exhilarating professional experience for me to watch the systems and processes take on lives of their own. It has been inspiring to see the positive impact PDSAs have as concerns arise, whether in an instructional or behavioral area or in a school operational or procedural area.

Being in my 30th year as a public educator, I was not sure this "old dog" could be taught a new trick. Through Byrnes' tutelage, however, I have come to realize the power of this systems approach in the field of education.

If you would like to know more about our journey at Penn Elementary, please do not hesitate to contact us through our e-mail addresses below.

Bibliography

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Jane M. Wheelless has been principal of Prince William County Schools' Penn Elementary School since 1998. This is her 24th year as an administrator and 30th year as public educator. She earned her educational specialist's and master's of education degrees from the University of Georgia. Wheelless presented at the 2009 National Quality Education Conference.

E-mail addresses for some Penn Elementary staff:

Jane M. Wheelless, principal: wheelsjm@pwcs.edu.

Linda L. Hange, assistant principal: hangell@pwcs.edu

Bambi Minner, librarian: minnerbj@pwcs.edu



Lauren Curran, physical education teacher: curranlc@pwcs.edu
Mary Pyck, teacher: pyckme@pwcs.edu
Sarah McGull, teacher: McGULLSK@pwcs.edu