WASHINGTON STATE KAPPAN

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The Power of Classroom Evidence:

Assessment That Counts!

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Message From the Editor

by Mary Lynne Derrington, EdD

Give a test, keep the best, shoot the rest. I have no memory of when or where I heard this. However, I clearly recall the conference keynote speaker using this phrase to describe student testing and assessment at the time. The audience snickered more than laughed upon hearing this witticism. We knew it was an apt description of summative testing designed to sort students into good, better, and best boxes. Final exams, SAT, and ITBS were familiar friends to us in the summative testing schema. A chapter test is probably the closest we came to what we now describe as classroom-based assessment.

What a difference a decade makes. This issue, *Power of Classroom Evidence: Assessments that Count!,* illustrates how educators today embrace the practice of formative feedback. We understand the value of frequent feedback designed to probe into the what, how, and why of each student's thinking and knowledge. This practice comes a long way from our former exclusive reliance on a summative test for gathering useful information on each student's learning progress. To paraphrase a Northwest timber analogy, flying over the forest of a student's performance once a year does not give an accurate view of his or her progress. On-going classroom assessment provides a telescopic sight and a clear vision of the individual components of that performance forest right down to the level of a leaf on a tree.

The tools providing this telescopic site is the theme of this issue. The articles throughout place learners at the center of teacher data collection and use. In the lead article, Tracy Thorndike-Christ describes quality formative assessment and gives us a needed update on the essential elements of summative and formative assessment. The background she provides assists our understanding of the lessons in each subsequent article.

A variety of information and tools follow in the next articles to guide assessment of learning as it occurs. The articles by Ellis and Scheuerman and Bond complement each other and extend our ideas about reflective practice. After reading the ideas in these articles, I was inspired to try reflective practices in the graduate-level leadership classes I teach. My positive results, while not a scientific study, encouraged me to think of more ways to use classroom-based evidence practices with adult learners. The articles by Sharratt, Lambert, and Coogan as a collective also provide us with numerous useable ideas for implementing practices in schools and classrooms at all learning levels and add to our repertoire of strategies.

Keeping with our journal mission to focus on both research and practice, authors Jancic, Jancic, and Kenikeberg describe their work in a middle school on closing achievement gaps in special education, a particularly change-resistant problem. The authors illustrate the Herculean trial-and-error efforts involved when implementing ideas into a specific school. At the same time, they provide a compelling picture of how a school staff can initiate an action-research-based process and thereby develop a program that works from the inside out.

The final two articles illustrate how far teacher education has come since my student teaching experience in the sink-or-swim final semester of a four-year program. Carney and Carroll and Trevisan and Neider describe two quality teacher education programs in Washington State that support formative assessment concepts as an essential component of new teacher development. The systemic alignment from pre-service to the K-12 classroom was enthusiastically noted by peer reviewers of these articles.

While there is more to learn on the topic of classroom assessment, it is encouraging that we no longer describe our practice as a process of giving a test and keeping the best. That's a welcome change long overdue.

About the Editor

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Message from the President

by Diana Gilsinger, EdD

Be Part of the Excitement!

It is a great time to be a Kappan in Washington State and your PDK Chapter is buzzing with excitement! Your Chapter Board is working diligently and we are pleased to feature the following successes. Thank you to everyone who has contributed so far. We extend an open invitation to contribute to your chapter—all of us, working together, can accomplish excellence.

- Our Chapter Mission, Vision and Goals have been reviewed and refined.
- Chapter Bylaws have been updated according to chapter priorities and federal requirements. They are awaiting chapter member vote via pdkwa.org.
- Membership is growing each week; we heartily welcome new members as well as continuing members.
- The ***Schools of Distinction Institute and Great School Awards Luncheon*** (September 2009) was attended by 130 members and guests. These 104 "Great Schools" were designated as among the 5% highest improving schools in the state of Washington for Reading and Math achievement over the past five years. PDKWA Board Members presented additional awards at school and district events throughout the state.
- A ***School Funding Forum*** was hosted by PDKWA in December 2009. Ken Kanikeberg, Chief of Staff with OSPI, addressed attendees regarding the challenges of school funding for 2010 and beyond, and Representative Skip Priest provided a workshop on the Priest-Sullivan Proposal and QEC Recommendations. In the afternoon, Peter Callahan (*Tacoma News Tribune*) moderated the School Funding Panel discussion featuring such distinguished officials as Superintendents Dr. Mary Alice Heuschel (Renton), Dr. Nancy Stowell (Spokane), and Dr. Art Jarvis (Tacoma); Senators Fred Jarret, Curtis King, and Eric Oemig and Representative Skip Priest. The panel discussion was taped for later viewing by TVW. Contact www.tvw.org or call 360-725-3979 for copies of DVD #200912-053.
- The 5th ***Washington State Kappan*** journal, **"The Power of Classroom Evidence: Assessment that Counts!"**, is now in your hands. It is another tribute to the hard work, dedication and professionalism of your state chapter board and contributing members. Congratulations and thank you to all of the authors and contributors for their fine work. A special thanks to our great Editorial Board and Dr. Mary Lynne Derrington and journal designer Kate Weisel for your wonderful ideas and work.
- Journal authors will also present at the **Regional Leadership Conference and Great Teachers Institute and Awards Luncheon, April 23-24,** at City University of Seattle's Renton Campus.

The Regional Conference is a two-day event with Friday, April 23, focused on **International Leadership training led by Dr. Sandee Crowther,** PDK International President-Elect (2009-11) and a cadre of outstanding PDK leaders. Friday provides opportunities to socialize with fellow members, learn more about **Phi Delta Kappa International,** and become involved in PDK-Washington State and international projects, activities, and leadership that are designed to fulfill PDK's three tenets: *research, leadership and service.*

Saturday, April 24, features the **Great Teachers Institute and Awards Luncheon.** The focus for the spring journal, and the workshops, is **"The Power of Classroom Evidence: Assessment that Counts!"** The luncheon welcomes our new members and recognizes a several **Distinguished Educators.** The Great Teachers Institute workshops will be presented by the Distinguished Educators and WA-State Kappan authors who will share a wealth of information about state and local progress in the field of assessment and best teaching and assessment practices.

As president of PDKWA, I invite you to take advantage of the many fine events and publications of your statewide chapter. We want your engagement on future event planning. We want your contributions to future journals. We want you to join us online at pdkwa.org, when you visit our site to learn how you can become an active Kappan. Your PDKWA/PDK-International membership is your ticket to become involved in local, state, regional and international Phi Delta Kappa professional development events and initiatives.

Quality Formative Assessment

The New Rules of Measurement for Quality Formative Assessment

by Tracy Thorndike-Christ

"Instruction should not be a Ouija board-like game in which teachers guess what to do next… it should be a carefully conceived enterprise in which decisions about what to do next are predicated on the best available information" (Popham, 2008, p. 14). Every teacher is charged with the task of ensuring that all students learn to their fullest potential. To achieve this aim, teachers must monitor continuously the progress of both the class as a whole and individual students in order to make good decisions about where to begin teaching, when to move on to the next unit of instruction, whether to reteach the present unit, or whether a particular student or subgroup of students needs special help mastering the targeted concept or skill. Each of these decisions impacts the effectiveness of classroom instruction and the quality of student learning. To make good decisions, decision makers need information—but not just any information, good information.

Classroom assessment is a major source of information for the myriad decisions teachers must make. Most teachers are well versed in the use of summative assessment—gathering information via tests, performances, or products to summarize student accomplishment at the end of instruction. Unfortunately, since these data come by definition when instruction is finished, they are available too late to positively impact student mastery of the objectives targeted by the assessment. Summative assessments also tend to cover too long a period of instruction and provide insufficient detail for use in instructional planning and progress monitoring. Further, after studying the quality of data produced by the summative assessment procedures most commonly used by classroom teachers (e.g., different types of tests, scoring rubrics for products and performances) for more than 60 years, researchers in educational measurement have concluded that the quality of the information produced simply isn't very good (Stiggins, 2001).

On the other hand, formative assessment, the planned process of continuously gathering

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information about student knowledge and skill both before and during instruction, shows great promise for improving the learning of all students when it is well executed (Black & Wiliam, 1998). Formative assessment procedures, like any other type of assessment procedure, must be evaluated to determine whether the information produced is reliable and valid for its intended uses. Because the process and purpose of formative assessment is so different from traditional assessments of student achievement used in both classrooms for summative purposes and large scale standardized testing programs, a different way of thinking about reliability and validity is warranted (Stobart, 2006). I will briefly review the concepts of reliability and validity as they are traditionally applied to measurement of student achievement and then discuss the new rules of measurement for formative assessment including suggestions for improving the quality of formative assessment in the classroom.

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Indicators of measurement quality

The quality of any assessment procedure is appraised by the reliability of the scores generated and the validity of the proposed interpretations and uses of those scores. All scores are imperfect indicators of the characteristics they were designed to measure so they are always, to some degree, unreliable. Reliable measures are precise; scores are dependable if they provide accurate reflections of students' knowledge or skill. Validity, on the other hand, requires evidence supporting proposed interpretations of score meaning and documenting the appropriateness of those scores for their intended uses. Assessments can yield highly consistent scores that have no relationship to the characteristic they were designed to measure (Thorndike & Thorndike-Christ, 2010). Using archery as an analogy, reliability tells you whether you hit the bulls-eye on the target; validity lets you know whether you even hit the right target! Clearly it's best if we hit the bulls-eye on the right target so evidence of both reliability and validity is critical.

All formative assessment is done with the *intention* of increasing student learning but good intentions do not always translate into desired results.

Quality formative assessment

The fundamental purpose of formative assessment is to improve decision making to enhance student learning. Consequently, traditional conceptualizations of reliability and validity need to be revised in light of this central objective. All formative assessment is done with the *intention* of increasing student learning but good intentions do not always translate into desired results. Therefore, the quality of information used formatively must be appraised in light of whether it supports its intended purpose; whether data lead to decisions that *actually result* in higher levels of student learning. This is essentially the same criterion we use to assess good teaching (Crooks, 2004).

Formative assessment is reliable when it provides dependable information that supports good decisions. Unstable estimates of student proficiency can lead to poor instructional choices—how can a teacher know when to move on or whether to reteach if measures of student learning are inaccurate? Further, students use information from assessments to gauge their current level of mastery and make decisions about adjustments to their achievement-related behaviors. Undependable information is easily misinterpreted; feedback to students based on misrepresentation of their actual skill level can misdirect their efforts which may actually interfere with their learning (Stobart, 2006, 2008). However, when formative assessment is effectively implemented, that is, when it is continuous and ongoing (Black & Wiliam, 1998), traditional concerns about score precision are less relevant. A teacher's misperception of a student's competence one day can be corrected by new information or demonstration of proficiency the next and since feedback to students is continually updated, errors are self-correcting.

Validity of formative assessment is all about consequences—do the interpretations of assessment data that inform teachers' instructional decisions and students' tactical decisions actually benefit student learning? Traditional types of validity evidence focusing on score meaning are less important with continuous formative assessment. If formative assessment lives up to its intended purpose by improving learning, it is valid; the data have proven their utility for informing good decisions. Anything that interferes with the outcome of improved learning is a threat to validity (Crooks, 2004; Stobart, 2006).

Factors that impact the validity of formative assessment

Motivation and trust. Since formative assessment represents a substantial deviation from the assessment practices teachers and students are used to, both must be committed to improving learning through its use. Like teachers, students have plenty of experience with summative assessment. Results of summative assessments, reported to students at the end of instruction, communicate to students what it means to be "good" in school and often clearly convey who is and who is not capable of academic

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Reflective Self-Assessment and Student Achievement

by Arthur Ellis and Richard Scheuerman

Introduction

The idea that human beings should practice reflective self-assessment is an old idea. Socrates (469-399 B.C.), who roamed the streets of ancient Athens as an unpaid teacher of critical thinking, taught that "the unreflective life is not worth living" (Plato, 1952, 210). Confucius (551-479 B.C.), who taught that reflection is the noblest way to learn wisdom and insight, wrote that study without reflection is a waste of time (1995). What do these admonitions from more than twenty-five centuries ago have to do with 21st Century teaching and learning? The answer appears to be, "everything."

Students come to school in order to learn alone in groups, as curriculum researcher John Goodlad (1984, 2004) wryly observed on the basis of his studies. Mainly they listen alone and study alone, surrounded by other students. Goodlad documented that the most probable event in secondary classrooms is "teacher talk" with "seatwork" the most probable event in elementary classrooms. But what would happen if students were encouraged to talk to one another about their work, share their ideas, and be given class time to ponder their progress? These are empirical questions to be addressed by research. The body of evidence supporting reflective self-assessment continues to grow.

Theory and Empirical Evidence

Psychologist John Flavell (1979) developed a theory of "metacognition," which he described as "thinking about thinking." Much of Flavell's work involved children's thinking and was based on earlier works of such luminaries as John Dewey (1910) and Jean Piaget (1976). He and his associates demonstrated that children, with certain concessions to age, are capable of reflection and that they are aware (conscious) of their own thinking. *Meta* is a Greek word for "after" and cognition is the act of thinking. So, metacognition is thinking after or reflecting.

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According to Georghiades, "metacognitive reflection involves the critical revisiting of the learning process (2004, 171)." At the level of instruction in school settings, we could think of problem solving activities as involving cognition (thinking), while those attempts by teachers and students to *reflect* on how they went about a solving problem represent metacognition (thinking about thinking). Cognition is certainly a cornerstone of school learning, but without metacognition as a mediating variable designed to reflect on experience, we end up with the old cliche, "in one ear and out the other." As Fisher concluded, "if we can bring the process of thinking and learning to a conscious level, then we can help them to gain control or mastery over the organization of their learning (1998, 14)."

Three studies conducted by doctoral students at Seattle Pacific University have shown the efficacy of reflective assessment on student learning. Bond's (2003) study involved fifth and sixth grade students who studied probability and statistics in a month-long intervention. Using random assignment of students and teachers to groups, students in the experimental condition practiced reflective assessment activities each day at the end of the class. Students in the comparison group used similar time to do guided practice. Both the end of unit test and the retention test (six weeks later) showed a statistically significant achievement difference in favor of the reflective assessment group. Bianchi's (2007) study of high school biology students studying a unit on

osmosis showed statistically significant gains in favor of the reflective assessment group over that of a comparison group on both on the end of unit test and a retention test (14 weeks later). Finally, Evans' (2009) study of ninth grade English students studying a unit on the hero's journey, showed similar achievement differences in favor of the reflective assessment group over a comparison group on both end of unit test and retention tests.

Reflective Assessment Strategies

There are many ways that students can practice reflective assessment. The good news is that you don't need a grant, and you don't need any new materials. The difficulty (for some teachers) is that you will have to give up some time to allow students to reflect. Typically, end of class reflections take 5-10 minutes. In other cases, the reflective assessment activities are designed as homework. This could be a few minutes well invested since there is evidence that empowering students to think and talk about what they have learned raises their achievement. Following is a sampling of strategies you may wish to try with your own students (Ellis, 2001, 2010).

- **"I Learned"** statements. At the end of a class session, simply ask your students to take a sheet of paper, put their name on it, and write one thing they learned in the lesson. Be patient, some of the sheets of paper will be blank. After all, most students have never been asked this simple question. Other papers will have insightful ideas on them. Use them the next day to give other students the general idea. In time, everyone will catch on. The "I Learned" statements accomplish three things: 1) you will get an idea of what your students thought was important in the lesson; 2) you will have a bridge (furnished by the students) for tomorrow's lesson; and 3) you will be able to remediate if some or many of the students did not learn much of value.
- **"Think Aloud"** asks your students to spend a few minutes in groups of two, at the end of lesson, to discuss what they learned and what was important in the lesson. This gives students a sounding board in the form of their partners in which they share their perspectives and help each other think through the material they have just been taught. When students verbalize what they learned, they raise their own level of consciousness about their learning, and at the same time they have an external check on their knowledge. This "slowing down" of the thought processes through give and take allows students opportunities to do a reality check before they move on to the next lesson.
- **"Clear and Unclear"** asks students to write down something in a lesson that was clear to them as well as something in the lesson that was unclear to them. A middles school student said it all when he wrote, "It is clear to me that H_2O is water. It is not clear to me *how* H_2O is water." The student knew the formula, but did not understand how two gases could come together to form a liquid. What an opportunity for the teacher to clear up a no doubt widespread misunderstanding on the part of the class. "Clear and Unclear" also provides fodder for peer teaching by giving students who do understand something was taught a chance to teach classmates who do not.
- **"Record Keeping"** asks students to keep track of the time they spent studying homework, number of pages they may have read, and what they think they covered in a homework assignment. You will find that when

your students keep track of the time, etc., they spend on homework, the quantity and quality of their work improves. This is also a time-management strategy that improves self-regulation. You can also have students keep track of the time they spend watching television or playing video games. Time management is often the difference between a successful student and an unsuccessful student.

- **"The Week in Review"** strategy places students in groups of three for about 15 minutes on Fridays. The groups are asked to reflect on the week's learning and to write down what they consider to be the important things they learned during the week. Given typical class sizes, you will receive about 8-10 group statements which you can then use on Monday to build a bridge from last week to the new week.
- **"I Can Teach"** strategy is a homework assignment that asks each student to teach something she learned in a lesson at school that day. This is a way of getting students to revisit and reflect on an experience by teaching it to a parent or sibling, or someone else.
- **"Learning Illustrated"** is an assignment that asks each student to draw a picture, make a map, create a flow chart, or otherwise show in graphic or pictorial form what he learned in a lesson or activity. You may be surprised at the results. Some students who struggle with their attempts to verbalize what they are learning are perfectly capable of showing progress when given an opportunity to draw, paint, sketch, or show in graphic form what they know.

Conclusion

The theoretical and empirical evidence in favor of reflective assessment continues to grow. While it is not a panacea for all the challenges of classroom life, it does offer promise of increased achievement by allowing students lesson-embedded opportunities to look back on an experience and to take the measure of their own learning. Even the best activity, the most challenging lesson, will fall short of the mark if we do not give learners opportunities to personalize and capture what they learned. Here is a challenge for you: try reflective assessment activities with your students as a kind of action research project. Keep notes on whether you see improvements in learning. In doing so, you yourself will be practicing reflective assessment.

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Informative Assessment: Teacher and Student Together

by John B. Bond

When classroom-based assessments are structured to serve as learning tools, students, along with teachers, can be engaged in making improvements.

This article focuses on the importance of including students in the formative assessment process. Integrating student reflection into classroom-based assessment is emphasized as a method to make assessment a learning experience. When classroom-based assessments are structured to serve as learning tools, students, along with teachers, can be engaged in making improvements. Such informative assessment that occurs informally in the classroom should be the primary purpose of assessment.

Over seventy years ago John Dewey advocated that the teacher should be the learner's "co-partner and guide in a common enterprise—the child's education as an independent learner and thinker" (Dewey, 1964, p. 10). Dewey's vision has, perhaps, more relevance in today's standards-based environment than it did decades ago when he wrote it.

This article illustrates the importance of involving students alongside teachers in the assessment process. An argument is presented that classroom-based assessment should be an *informative* tool that serves the learning needs of students through the implementation of reflective strategies. While it has become commonly accepted that classroom-based assessments provide the teacher with live, in-the-moment feedback to guide his or her instruction, the opportunity for students to learn through the process has been under-emphasized. Research and strategies are reviewed next that underscore the importance of making student reflection an integral component of the evidence-based assessment process.

Students Need to Self-Monitor

It is the "someone who can make improvements" that is at the crux of the assessment dilemma (Scriven, 1991). When the student is included, along with the teacher, as that someone who can make such improvements, the potential exists to transform the classroom experience. Students need to become the ultimate users of classroom assessment information that is elicited to improve learning (Black & Wiliam, 1998; Wiliam & Thompson, 2008). With this goal in mind, researchers of classroom-based assessments have increasingly focused in recent years on metacognitive activities and strategies that serve both teachers and students. Metacognition, or thinking about thinking (Costa, 2001), is seen as an essential aspect in making classroom-based assessment activities learning experiences for students (Chappuis, 2005; McTighe & O'Connor, 2005; Stiggins, 2008).

Research on Reflective Strategies

A growing body of empirical research supports the inclusion of student reflection in the formative assessment process. While a thorough review of the literature is far beyond the scope of this short article, a few large-scale research projects stand out and deserve attention.

Dignath and Büttner (2008) reported that the inclusion of reflective strategies in lessons had significant positive impact on student learning in two separately conducted meta-analyses. In their analyses of 84 studies the researchers found an average effect size of .69, which is a medium to large practical significance (Green, Salkind & Akey, 2000). This finding indicates the presence of powerful interventions that resulted in much higher performance of students in treatment groups than those in control groups. There is reason to take seriously these results when considered in an emerging pattern of similar findings.

In an extensive survey of the research literature on formative assessment Black and Wiliam (1998) concluded that students need to be engaged in self-assessment in order to understand the main purposes of their learning and thereby grasp what they need to do to achieve. Among the reported findings was the importance of student reflection upon their learning and the teacher's role in facilitating such reflection.

Another meta-analysis conducted by Wang, Haertel, and Walberg (1993) found that students' metacognitive processes have an influence on learning second only to teachers' abilities to maintain active participation. More than 11,000 statistical findings correlating school factors with achievement were reported in this seminal study.

In recent years, research on the effects of metacognitive strategies has increased. A pattern of significant findings (Blank, 2000; Conner & Gunstone, 2004; Gulikers, Bastiaens, Kirschner, & Kester, 2006; Gustafson & Bennett, 2002; Hartlep & Forsyth, 2000; Naglieri & Johnson, 2000) calls classroom practitioners to embrace student involvement in formative assessment processes.

Strategies for Students and Teachers

Reflective strategies should serve the needs of students in addition to providing feedback to teachers. When structured with this dual goal in mind, a teacher does not need to plan a separate strand of formative assessment for student consumption. The literature is rich with learning strategies and techniques that teachers can employ. For example, in his book *Teaching, Learning, & Assessment Together,* Ellis (2001) offers 22 reflective strategies that can be adapted for this purpose. Four easily-implemented reflective strategies are described below:

"I Learned" Statements. *I Learned* statements are efficient ways for teachers to facilitate student reflection on what has been learned while finding out if their lesson objectives have been attained (Ellis, 2001). This strategy fits well during the last five minutes of a lesson or activity. Students are asked to think about what they have learned during the lesson and then write a sentence or paragraph that begins with the phrase *I Learned.* The teacher collects the statements, reviews them to monitor

individual and group progress, adjusts the following lesson accordingly, and returns them the next day (Evans, 2008).

Think Aloud Strategy. *Think Aloud* is an efficient reflective strategy that can be used throughout lessons. When teachers ask students to "turn and talk" about a concept, they are using *Think Aloud.* A teacher can prompt an effective reflective sequence by asking students to first think to themselves what has just been learned, and then share their learning with the person next to them. While students are talking, the teacher should move about the room gauging the level of participation and general understanding of the lesson focus. A written *I Learned* statement can also be included if the teacher wanted to examine closely the content of the conversations.

Clear & Unclear Windows. The *Clear & Unclear Windows* strategy is an assessment technique that can be used at the end of a lesson or series of lessons (Ellis, 2001). Students are asked to draw a vertical line down the middle of a sheet of paper. One column is titled *Clear* and the other column *Unclear.* On the *Clear* half of the paper students are asked to list what they understand, and on the *Unclear* half they list what they do not understand. This strategy causes students to self-assess their learning, while providing the teacher with formative feedback on the lesson or unit goals. It is a strategy that can be used with a range of age levels.

Journaling. The inclusion of *journals* in a class or unit of study is an effective technique to encourage student reflection. Student journals can provide evidence of learning and the progress of concept

development over time. Journaling serves the self-reflective and self-assessment needs of the student and also the evidence-based needs of the teacher. An effective use of journaling includes regular class time for students to write reflectively about their learning and periodic review by the teacher.

Reflective strategies such as the examples above engage students in the formative assessment process. As students think about and self-assess what they have learned and not learned, they join the teacher in owning the learning outcome. The assessment experience is thus transformed.

Dewey's Vision of Shared Ownership

It is the mental reflection during classroom activities and lessons that make classroom-based assessments a formative experience for students. The opportune time for this to occur is when students practice reflective strategies during or immediately following a learning activity. Students are then placed at the center of the assessment process, for it is their metacognitive response to what they have practiced that is the essence of learning. The ownership of the learning is then shared by the teacher and the student. When such assessment routinely includes student reflection as an essential component of classroom data gathering, Dewey's vision of a teacher being a "co-partner" in a student's learning will have been attained.

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Supporting Student Self-Assessment *for* Learning

by Gene Sharratt, PhD

Assessment *for* learning is the process of seeking and interpreting evidence for students to use and for their teachers to determine where the students are in their learning, where they need to go next, and how best to get them there.

Assessment *for* learning differs from assessment *of* learning in that assessment *for* learning is on-going, occurs during learning, is done *with* and *by* learners, is personally referenced and is process focused. In contrast, assessment of learning is summative in nature, occurs after learning, is done to learners, is externally referenced and outcome focused. Assessment for learning is formative and seeks to improve learning rather than prove it. It can measurably improve student performance and requires understanding, careful planning and gradual integration to be meaningful and successful.

Assessment for learning is based on a constructivist view that implies that regardless of how we design, package and deliver learning experiences, in the end learning is a process that is activated and managed by the learner. It's the learner who constructs the learning. An essential component of this constructivist view is active student involvement in assessing and improving their learning.

In classrooms where assessment for learning is practiced, students understand the reason and focus for learning, recognize their personal success in learning, identify and work towards a goal, and understand how to make improvements and achieve their learning goals. Central tenets of assessment for learning include: clear learning targets, identified success criteria (rubrics), formative feedback, effective questions, and peer—and self-evaluation.

Black and Wiliam (1998) support the importance of student involvement in their own learning and recommend teachers adjust their teaching based on formative assessment and student self-evaluation. This ensures students are actively involved in examining their own assessment data and setting meaningful learning goals.

Student Assessment for Learning

Helping students to learn how to assess and reflect on their state of learning will help them learn how to provide their own feedback and thereby help them to become independent life-long learners (Sims-Knight & Upchurch, 2001). It is critical that students know how to assess their own progress. This ability to self-evaluate is a powerful learning tool and can have a strong impact on student performance.

Hearne (1992) recommended that teachers teach students self-reflective skills which include the ability to see how their work meets the standard and what they need to change to improve. Additionally, Hearne (2004) suggests students can: learn to value their own work; use rubrics to assess their work; reflect on how their work is like/different from the standard and state what they need to do to improve. Moreover, students can collect work over time and discuss it with an adult, thus gaining an understanding of the relationship between time, efforts, and outcomes.

When students rely on an external authority for determining their learning success, they don't develop such skills on their own. Research (Bielaczyc, Pirolli & Brown, 1995; Chi, Bassok, Lewis, Reimann & Glaser, 1989) demonstrates the power of students developing such skills, which are often called metacognitive. Several studies (Chi, de Leeuw & Chiu, LaVancher, 1994; Van Lehn, 1996) on self-explanations clarify this phenomenon. Chi, et al., (1994) discovered that good students were

more likely than poor students to explain to themselves what they understood and what they did not.

Additionally, students can be motivated to self-explain and doing so improves their learning (Bielaczyc et al., 1995). Van Lehn (1996) and colleagues demonstrated that most of what students do when they self-explain is fill in gaps in their understanding.

Students make progress when they develop the ability to monitor their own work.

When students actively participate in assessing their learning by interpreting their performance, they are better positioned to recognize important experiences of personal learning. This helps them identify their own strengths and needs. Students should be educated in ways that build their assessment capabilities so they can take increasing control of their own learning and, through this process, become more effective and independent learners (Sims-Knight & Upchurch, 2001).

Students make progress when they develop the ability to monitor their own work. To do this well, they need to understand what quality work looks like (examining models of quality work helps develop this), what criteria define quality work (participation in the development of learning goals and assessment criteria helps develop this), and how to compare and evaluate their own work against such criteria (peer and self-assessment help develop this).

Assessment-capable students also provide better information to teachers. Better student feedback gives teachers a clearer picture of students' learning needs and enables more personalized development of the next teaching and learning steps.

Teaching Students to Examine Their Own Data and Set Learning Goals

A recent study (Hamilton, Halverson, Jackson, Mandinach, Supovitz, & Wayman, 2009) recommends teachers provide students with explicit instruction on using achievement data regularly to monitor their own performance and establish their own learning goals. Hamilton, et al. (2009) state:

> Students are best prepared to learn from their own achievement data when they understand the learning objectives and when they receive data in a user-friendly format. Tools such as rubrics provide students with a clear sense of learning objectives, and data presented in an accessible and descriptive format can illuminate students' strengths and weakness. (p. 19)

Hamilton, et al. (2009) propose educators teach students to examine their own data and set learning goals. These authors offered four strategies to carry out this recommendation. They are:

Explain expectations and assessment criteria.

> "To interpret their own achievement data, students need to understand how their performance fits within the context of classroom-level or school-wide expectations. Teachers should articulate the content knowledge or skills that they expect students to achieve throughout the school year, conveying goals for individual lessons and assignments, as well as goals for the unit and end-of-year performance. Teachers should explicitly describe the criteria that will be used to assess performance toward those goals." (p. 20)

Provide tools that help students learn from feedback.

> "Simply giving students assessment data that are accessible and constructive does not guarantee that they will know what to do with the data. Students need the time and tools to analyze the feedback; otherwise they may simply glance at the overall score without considering why they achieved that score and what they could do to improve. When providing feedback, teachers should set aside 10 to 15 minutes of classroom instructional time to allow students to interpret and learn from the data. During this time, teachers should have students individually review written feedback and ask questions about that feedback." (p. 22)

Use students' data analysis to guide instructional changes.

> "Although data analysis tools help students learn from teacher feedback, they also provide

valuable information that teachers can use to inform instruction. Teachers should collect and review students' goals and analyses to identify content areas and skills that need to be reinforced and factors that may motivate student learning." (p. 23)

Provide feedback to students that is timely, specific, well formatted, and constructive. This recommendation supports the research of May and Robinson (2007) that notes providing students with specific and constructive feedback on their progress was associated with improved student achievement. These authors suggest student feedback should be designed to help students understand their own strengths and weaknesses, explaining why they received the grades and scores they did, and identifying the specific content areas the student should focus on to improve their scores. This feedback should be timely (rapid enough so that students still remember the task and the skills on which they were being assessed), appropriately formatted (teachers should select a mode of delivery, e.g., rubric based, handwritten, or typed), and specific and constructive (feedback should provide concrete information and suggestions for improvement).

Summary

Assessment *for* learning occurs during learning and is done *with* and *by* learners. It is based on the constructivist tenet that learning is a process that is initiated and managed by the learner. It's the learner who constructs the learning. An essential component of this constructivist view is active student involvement in assessing and improving their own learning.

Assisting students to learn how to assess and reflect on their state of learning will help them learn how to provide their own feedback and thus help them improve their performance and become independent life-long learners.

Teachers provide the knowledge and tools necessary for students to acquire self-assessment learning skills. When students are actively involved in assessment for their own learning, they understand the reason and focus for learning, recognize their own success, and identify and work toward personal improvement. When teachers support student self-assessment for learning, students learn best and become life-long learners.

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Response Cards

Assessing and monitoring academically vulnerable students' progress and learning outcomes during inclusive group instruction.

by M. Chuck Lambert

Behavioral, emotional, and cognitive engagement is essential for maximum student learning (Woolfolk, 2008). One of a teacher's primary instructional tasks is to keep students actively involved with their own learning. It can be challenging for teachers to assess levels of student engagement effectively during group instruction. Part of the difficulty lies in the fact that the process of learning cannot be directly observed. We don't "see" learning. Learning is inferred through observable behavior (Bandura, 1986). Matters are further complicated in group settings because commonly used informal assessment strategies like questioning do not permit evaluation of each student's current understanding or unique conceptual or motivational difficulties.

The problem with limited sampling of student understanding

Think about what usually happens when a teacher asks his or her class a question. Some students raise their hands and then the teacher calls on one. The selected student then gives an answer. If the student's answer is correct, the teacher usually praises the student and moves on. If the student answers incorrectly the teacher may assist the student or recruit assistance in answering from the student's peers. The point is that although the teacher recruits participation from the entire class, only one student actually has the opportunity to respond to the teacher's question. The teacher has no way of knowing the extent of understanding or misunderstanding among the rest of the students. He or she cannot even be sure that those who raised their hands have the right answer and the teacher certainly has no basis for conclusions about the level of learning among those who did not.

Another option is to call on students whether they have their hands raised or not. Although this would certainly give a better sampling of the understanding of the class, we are often reluctant to call on a student who does not volunteer. Some students are shy and dislike being the center of group attention. Many may not know the answer to the question and revealing that publicly can be embarrassing and cruel. Creating a climate of fear is not conducive to quality learning.

Willingness to volunteer to answer questions also varies with age. Ask a question of a first grade class and the enthusiasm for answering a question is often dramatically different from the enthusiasm of fifth graders class or high school students. It seems student characteristics, independent of interest in the subject matter or understanding of the material, impact the probability of student participation in whole class questioning. This limits the inferences we can make about learning on the basis of a student who is raising his or her hand.

Herein lies the problem. Without good information about all students' level of understanding while the lesson is ongoing, it is virtually impossible for teachers to adjust their lessons to ensure maximum student engagement and learning.

Response cards

One way to quickly gauge the level of understanding of all students during a lesson is through the use of response cards. Response cards may be actual

cards/signs or wipe-boards that all students in the class hold up simultaneously to answer a question or problem posed by the teacher (Heward, 2008). In contrast to the whole group questioning method described above, where a teacher can only evaluate the learning of the one student who was called on to answer the question, the use of response cards prompts and requires active participation from the entire class.

Students select from a set the appropriate card to reflect their answer or write their answer on their whiteboard and then, on the teacher's signal, all students raise their card. The teacher can then easily assess all the students' responses and make instructional decisions while learning is still taking place.

If the majority of the students got the correct answer then the teacher may decide to move on to the next concept or skill. If there were many incorrect answers, then the teacher may choose to adjust his or her instruction to clarify misunderstandings then provide additional examples or even to re-teach the skill. If only a select few need additional assistance, the teacher can move on and provide those students with remediation during individual work. (Cartledge & Lo, 2006)

The key benefit of response cards is that, armed with a more complete understanding of the level of mastery in the entire class, a teacher can utilize more effectively his or her instructional time to maximally benefit student learning. Response cards have been used successfully with students of all ages, ability levels, and from a wide range of cultures and family circumstances; (Cartledge & Lo, 2006; Randolph, 2008) there are over thirty published studies showing their effectiveness in all types of classrooms (Randolph, 2008). Use of response cards has been credited with improving student achievement as measured by test and quiz scores and also with increasing students' on-task behavior and decreasing instances of disruptive classroom behavior (Lambert, 2006). Also, students like to use response cards. In satisfaction surveys students overwhelmingly report enjoying response cards and would like to start using them in their other classes as well (Lambert, 2006).

For teachers interested in using response cards, some of the more common questions about implementations are listed with suggestions below. In addition to this article, www.Interventioncentral.org is also a resource for educators who would like to start using response cards or other group response strategies, as are the books and articles listed in the references.

Response cards have been used successfully with students of all ages, ability levels, and from a wide range of cultures and family circumstances.

What types of questions work best with response cards?

Response cards work best when a teacher's question has a single or limited number of correct responses and when duration between the question and expected responding is short. For open-ended questions or questions intended to evoke discussion, have an individual student answer the question.

We have been using "white boards" in our classrooms for a number of years. Are we using response cards?

Although dry-erase wipe boards can be used as response cards, often teachers use the technology of dry-erase boards in lieu of notebook paper for solving equations in class or for brainstorming or other pre-writing activities. Using dry erase boards as an alternative to notebook or butcher paper is great, but using boards in this way does not contain the critical components of whole class response and immediate feedback essential for academic returns shown in the response card literature. These components are essential to the empirical foundation for and data-based support for using response cards

(Heward, 2008). Response cards are not an item, they are a system of using a technology such as wipe boards during group responding to facilitate group active student responding. (Heward, 2008)

Are there not higher tech replacements for response cards? What about using SMART Boards, isn't that better than response cards?

SMART Boards, although clearly motivating for

both teachers and students, are not response cards, as only one individual is able to make a response to the teacher question. Response cards must be group responses to a teacher question. In addition, methods such as SMART Boards do not guarantee that students will participate in and benefit from increased opportunities to respond—the hallmark of the response card research. (Austin, 2000)

That said, there are some higher tech alternatives that utilize the same instructional principles and may be just as effective as response cards. Electronic student responders were first implemented in college classrooms the 1960's. There are several student response devices currently available.

Although SMART Boards don't qualify under the umbrella of response card research, SMART Response, from the makers of SMART Board, has created a wireless, handheld remote that each student has in the classroom that the student can use for group responding. Students choose their answer either true or false or using a multiple-choice format. (SMART Technologies Corporation, 2009). Another product is eClicker, sold by Big Nerd Ranch Software. This application is available for the iPhone or iPod touch, and is another high-tech response system making its way into schools. (Ojeda-Zapata, 2009).

There are some challenges with implementation of these technologies. One challenge is that these systems only allow for true/false or multiple choice responding. With write-on response cards, you can ask questions without providing a range of answers showing that students have a greater understanding of the concept.

The other more ominous challenge to implementing these systems is the thousands of dollars of equipment needed. Write-on response cards can be created for a classroom of 30 for around $35 dollars (Heward 2008). With some handheld student responders costing in excess of $1,200 per student (Ferrier, 2009) and no empirical studies comparing response cards and student responders (Randolph, 2007), response cards may be the more prudent choice for teachers, principals and districts.

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Formative Assessment Strategies to Improve Student Learning

by Nancy Coogan

The demand of state assessments provides the basis for rewarding some schools for high performance and sanctions for schools that are of low performance. Teachers have a definite responsibility for these summative assessments, as these inform decisions about students and report progress to parents, school districts, and the state where they are administered. Linda Darling-Hammond (1997) maintains, "This approach, however, has failed wherever it has been tried. A more productive approach would use assessments to guide investments in school and teacher learning linked to changes in practice." (p. 238)

The use of formative assessments help increase student learning especially with our lowest-achieving students. These assessments can support their learning and motivate students to improve. Skillful use of formative strategies focuses on individual student learning using evidence from the students. The purpose of these assessments is to focus on the learners and provide teachers feedback for instructional purposes.

The Research to Support Formative Strategies

The research is clear regarding the use of formative strategies to increase achievement, especially with our lowest achievers. These are referred to as *assessment for student learning* strategies. "We [Dylan and Black] know of no other way of raising standards for which such a strong prima facie case can be made on the basis of evidence of such large learning gains." (p.19) Shephard (2008) gives emphasis to the power of formative assessment. "Formative assessment is defined as assessment carried out during the instructional process for the purpose of improving teaching or learning…. What makes formative assessment formative is that it is immediately used to make adjustments so as to form new learning." (p. 301) Teachers need to continuously refine their classroom

practice and have opportunities to discuss formative strategies with peers.

Wiliam (2007) suggests, "When implemented well, formative assessment can effectively double the speed of student learning". This is not to discount benchmark or common summative assessments.

In Jan Chappuis' latest book, *Seven Strategies of Assessment for Learning* (2008), "The achievement gains realized by students whose teachers rely on formative assessment can range from 15 to 25 percentile points, or two to four grade equivalents, on commonly used standardized achievement test score scales" (p. 3). Formative assessment displays the following characteristics according to Chappuis:

1. Feedback for students is descriptive and moves their learning forward.
2. It provides students opportunities to self and peer assess.
3. Classroom discussions, tasks provided, and homework determine where students are in their learning in relationship to the target they are attempting to reach.

These characteristics, effectively implemented, motivate students, support an increase in achievement, and involve the students in their own learning.

Principals must provide teachers the time necessary to meet, discuss, calibrate, and hold each other accountable to achieve high levels of learning in their classrooms.

Wiliam (1994) affirms, "Feedback is formative only if the information fed back is actually used in closing the gap." (p. 15)

The Practical Application of the Research

The following strategies can be shared with teachers to implement in their practice in order to move learning forward as they make instructional decisions as the result of these strategies.

- **Exit Passes:** At the end of a lesson, provide students with an exit pass clearly asking a question to see if they understood the day's learning target. Collect as students exit the class and quickly assess where students are at with their learning for the next day. Students can be heterogeneously grouped the following day. Each student at their table group will be required to explain their thinking.
- **ABCD Cards:** Provide students with laminated cards for each letter. Pose a question and have students respond with one of their four cards. Teachers can quickly determine/assess where students are at. Teachers can also have each letter in one of the four corners of their classroom. Students can also be provided an opportunity to defend their thinking by moving where they believe the correct response is.
- **Dry Erase Boards:** Having teachers use this is a quick formative assessment that determines which students need additional support. Teachers have the opportunity to then group students into heterogeneous groups and have them defend their thinking. Questions are posed to hear why students changed their responses. Some may refer to this as convincing a skeptic.
- **Find It and Fix It:** Rather than providing students with the number of problems they have incorrect on their paper, explain to them that three of their responses are incorrect. Find them and correct your responses.
- **Wheels spinning? Let's get rolling!:** This can be an effective tool as a bulletin board where students pose questions they still have regarding the daily learning target on a sticky note as they exit the class. The teacher uses this information to guide their instruction for the following day.
- **Two Stars and a Wish:** Students do this with their peers, i.e., "I like this because… I like this because… I wish you would have done this… ."
- **Traffic Lights:** Students can begin with a red, green, and yellow card laminated for each table group. Red: You cannot go any further without assistance. Yellow: You have some questions… you are developing, but can still move forward. Green: You are ready to teach someone else. Teachers can pair students up with one another based on their understanding and to move student thinking forward.

Formative assessment strategies are being used effectively in classrooms where student learning is occurring. Teachers in schools where formative assessment is commonplace engage in authentic discussions around teacher practice, the use of data to inform instructional decisions, and how to improve in their own performance and practice.

Challenges Around the Application

Students as learners must be expected to actively participate and cannot "opt out" of their learning. Always hold the student accountable. If a student is unsure, they are encouraged to ask a clarifying question. If a student chooses to pass, it is our responsibility to come back to the learner. The feedback is direct and immediate. Additionally, the quality of teaching may improve by using formative methodologies because it will provide teachers with information on how to improve their instruction.

Yeh (2008) examined the effects of formative assessment and teacher quality.

> … "formative assessment is not merely one of many methodologies which competent professional teachers can use in their classrooms, but a means to raise the quality of teaching and learning, and to do so in a far more cost-effective way than raising the bar for new applicants or replacing low-performing teachers. " (p. 5)

Principals must provide teachers the time necessary to meet, discuss, calibrate, and hold each other accountable to achieve high levels of learning in their classrooms. As a result it is important for principals to allow teachers permission to take small steps and implement one or two strategies initially in order to sustain formative strategies in their practice. Teachers also need to be given authorization to do less of something else. This is a challenging concept for teachers to embrace, as they frequently believe everything has merit. The challenge revolves around changing classroom practices that are considered engrained in teacher pedagogy. Providing monthly time within the school day allows teachers an opportunity to try formative strategies and report out to their peers.

Conclusions

There are many complexities in a classroom, yet there is no doubt regarding the research to support formative assessment strategies, and the benefits of using these assessments for student learning purposes. Students are more motivated, become users of the assessment, and take responsibility for their learning. Good pedagogy combines collaboration with professionals and includes the learner in the process.

Research regarding formative assessments and the relationship between classroom practice and effect size should continue. It is equally important that we continue to support teachers as their practice evolves as they use and implement these strategies. Wiliam (2009) contends, "Every teacher in every school should be convinced that they must get better." Highly-effective building leaders reflect this same sense of commitment. They work daily to ensure every student is improving in every classroom.

"Every teacher in every school should be convinced that they must get better."

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Doing TIME:

One School's Efforts to Narrow Special Education Student Achievement Gaps in an Era of Unfunded Mandates and Shrinking Budgets

by Mitchell Jancic, PhD; Susan Jancic; and Mary Kanikeberg

As we enter a new decade of educational reform efforts proposing to narrow the achievement gaps between high and low performing students, and make high quality, assessment driven instruction accessible to all students, public school administrators and teachers continue to struggle with finding ways to provide the services necessary to ensure educational equity and certify satisfactory annual yearly progress for all students. Indeed, the challenges faced by P-12 administrators to address the unfunded federal mandates of IDEA (2004) and NCLB (2001) in an era of changing student demographics and state budget cuts are Herculean.

Just how does one go about the task of narrowing academic achievement gaps in an era of unfunded federal mandates and stretched budgets? Ferndale School District (FSD) in Washington State piloted a program at Vista Middle School (VMS) that may provide a framework to address the academic needs of special education students in an effective manner—Targeted Instruction with Measurable Evaluation (TIME).

The model employed by FSD to provide the necessary support for individuals with disabilities, and to meet specific IEP goals, had been an inclusion model with both special education teachers and paraprofessionals going into general education class rooms for most subject areas. General education teachers generally favored the approach of having special education teaching staff in their classrooms, and the special education staff was relatively comfortable with the implementation of the inclusion model as well. Unfortunately, student progress remained relatively unchanged—too many students were not making satisfactory yearly progress—and thus Vista Middle School was in their second year of Annual Yearly Progress (AYP) monitoring in the Special Education and Free and Reduced quadrants.

Vista Middle School (7/8), Ferndale School District
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Enrollment (Oct. 2008)
Student Count, 376

Gender (Oct. 2008)
Male, 54.89%
Female, 45.11%

Ethnicity (Oct. 2008)
American Indian/Alaskan Native, 8.97%
Asian/Pacific Islander, 4.077%
Black, 1.63%
Hispanic 10.05%
White, 75%

SpEd & Title I (Oct. 2008)
SpEd, 19%
Free & reduced lunch, 45.12%

Teacher Information (2008-09)
Classroom Teachers, 33
Teachers with at least a Master's degree, 62.5%

Attempted Interventions

VMS implemented a number of school-wide systematic interventions in an attempt to build capacity and ensure readiness to improve student achievement and narrow achievement gaps. First, VMS utilized multiple measures to identify specific student deficiencies. WASL, Dibels, MAPP, SOAR, The San Diego Quick Assessment, FRY Oral Reading Test, Corrective Mathematics/Comprehensive Placement Test, CORE Assessment of Reading Comprehension, and curriculum-based measures (CBM) were utilized to make level and placement decisions for students. VMS then revised its schedule and provided a block for integrated studies (literacy and social studies), in a leveled approach for students, thereby providing a larger block of time for reading instruction. A College Bound (CB) support program

was implemented along with lunch study and after-school study programs for all students. Additionally, VMS implemented Content Literacy Continuum (CLC) intervention strategies as well as a number of non-academic whole child supports, e.g., counseling and extracurricular opportunities. Finally, teachers at VMS participated in instructional coaching professional development and implemented a model of peer coaching.

While these interventions were responsible for positive growth in some areas, they failed to narrow the gaps for special education and Title I students. These students scored far lower than had been expected with demonstrated skill levels in mathematics and reading at the 2nd and 3rd grade levels, with many students identified as being functionally illiterate. Another approach was needed.

Targeted Instruction with Measurable Evaluation (TIME)

As a result of a failing to make AYP with the two identified groups, special education and Title I, and additional budget cuts that reduced a 1.0 FTE special education instructor to 0.5 FTE, members of the special education team at Vista met with the principal to construct an alternative to the current model that might better serve individual student needs and make better use of personnel resources. Two significant insights resulted from these discussions: 1) special education students were not receiving the strategic instruction necessary to make satisfactory progress in the current model; and 2) the current method of allocating paraprofessional services could be made more effective and efficient. Placement test results suggested a need for Targeted Instruction with Measurable Evaluation (TIME) that would provide more intense instructor and paraprofessional supports for students by targeting the specific areas of need for each student. Strategic instruction and tutoring have been effective in providing both short-term support and students learning powerful learning strategies to assist them in all of their classes (Hock, M., Schumaker, J. & Deshler, D., 2001). The students were placed in groups of 5 or 6 in their same area and level of need, e.g., reading and/or mathematics.

Similar to the implemented model for general education students, TIME would group special education students based on their levels and kinds of supports needed for each student. The TIME initiative was framed as a skill-specific model of strategic instruction and formative assessment that would provide a continuum of supports in a manner that incorporated this learning communities' vision for student success and was aligned to other building interventions.

The TIME initiative was framed as a skill-specific model of strategic instruction and formative assessment that would provide a continuum of supports…

The TIME initiative involved *all* special education staff in the building, including Life Skills and Behavioral Disorder (BD) instructors and paraprofessionals, and resource teachers and paraprofessionals. This team participated in half-day work sessions, for a 3 week period, to set up the program protocols, administer placement tests, and train staff with the use of scripted, strategic reading and math curriculum. Additionally, these team members learned how to help students set and monitor their own growth and how to evaluate student results and monitor data. School counselors were enlisted to modify students' schedules, and the custodial staff was pressed into service to prepare small meeting rooms to house 5-6 students and an instructor. Pooling resources

Many team members indicated that the weekly progress monitoring and graphing permitted the instructors and the students to see how much the students had achieved on a week-to-week basis thereby providing them with additional motivation to succeed.

allowed for eighteen groups (9 reading and 9 math) to operate on a daily basis with no additional costs to the building or district. Classes were designed for quarterly (8 week cycle) admission or exiting based upon pre-test and post-testing results. Thus far 78 students (entire special education population at Vista) have been served with TIME.

Positive Outcomes

As a result of creating positive conditions through professional development and capacity building, the strategic intervention planning resulted in improved student performance and greater teacher job satisfaction. Additionally, students have demonstrated increased understandings of how they learn and routinely transfer skills across content areas, demonstrate stronger skills, and discipline issues have been reduced.

Interest in developing a targeted instruction model was the result of attempting to resolve a reduction in staffing by restructuring special education resource allocations; student performance data that indicated unsatisfactory yearly progress, and the painful acknowledgment that special education students weren't improving adequately to prepare them for the rigors of high school instruction.

What was not anticipated was the positive outcome of increased job satisfaction reported by the staff involved with the initiative. The paraprofessionals in the program expressed great satisfaction as a result of being included in the design and implementation phases of the program and preferred providing scripted, strategic instruction to their own groups where they could monitor student progress on specific learning targets, daily. The Life Skills and BD teachers expressed satisfaction regarding working with a cross section of students beyond their usual case load and they appreciated being a part of a cadre. Many team members indicated that the weekly progress monitoring and graphing permitted the instructors and the students to see how much the students had achieved on a week-to-week basis thereby providing them with additional motivation to succeed.

Parents have also expressed renewed confidence and support for their children and have passionately shared their enthusiasm for the program. And even students are expressing great satisfaction in the progress they are making. An 8th grade student who could not add double digit numbers at the beginning of the program has now achieved proficiency and is ready for multiple number division. When recently tested he hit a wall at complex division and couldn't do the work. He said, "I just need to take division class and then I will be able to do division with however many numbers you give me by the time the class ends!"

The inclusion of teachers and paraprofessionals in the design and implementation of TIME; the frequent and on-going assessment of student learning; and the redistribution of personnel resources into more fulfilling roles has had a positive impact on all of the stakeholders in the Vista community.

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Classroom Evidence That Counts for Teacher Candidates

Student-based Evidence of Washington's Standard 5

by Joanne Carney and David Carroll

In Washington State and elsewhere, policy makers are attempting to create a "sea-change" in the way new teachers are assessed for certification. Washington's Professional Educator Standards Board (PESB) has focused upon the re-design of approval standards for professional education programs, beginning with Standard 5, which outlines required competencies for teachers. The intent of these new standards is to make a shift from focusing on the prospective teacher's behavior to a focus on evidence of student learning (WASBE/PESB, 2008).

The new standards will require a partnership between teacher education programs and P-12 schools—a partnership focused on preparing new teachers who are able to collect and analyze classroom evidence to document their impact on student learning. It also means that cooperating teachers will increasingly be asked to assist student teachers in this endeavor.

This article reports on a PESB pilot project at Western Washington University. The project used a K-5 teacher education partnership between the Elementary Education Department (ELED) and three elementary schools in the Nooksack Valley School District as the context for developing evidence-based practices among interns and collaborating teachers. We present here a *Standard 5 Student-based Evidence* framework devised by the project. We believe this framework will be useful for both teacher educators and classroom teachers as they assist interns in gathering student-based evidence (SBE), and show an example of how this framework guides a teacher candidate in analyzing a student work sample. We conclude with recommendations for teacher education programs and schools.

A Framework for Standard 5

While Standard 5 identifies the criteria for essential teacher knowledge and skills (Figure 1, left column), the PESB draft framework provides only a limited number of examples of the types of student evidence in each area. We soon realized that our teacher candidates and classroom teachers would need more specific descriptors to guide them in collecting appropriate student artifacts. We thus decided to develop a framework for Standard 5 student-based evidence.

In devising this framework, we started by asking ourselves, what's the nature of the learning we're looking for? We've been using ideas from *Understanding by Design* (Wiggins & McTighe, 2005) extensively with our teacher candidates. This approach to planning emphasizes focusing first on identifying larger understanding goals, then assessment criteria that would provide evidence of learning, and finally learning experiences to achieve the goals. We used the authors' "Facets of Understanding" to identify dimensions of learning where student evidence might be found. These facets include: Explanation; Interpretation; Application; Perspective; Empathy; and Self-Knowledge.

We noted that these facets describe a variety of ways students might engage with subject matter content—the territory covered by Standard 5.1. After borrowing additional ideas from Tomlinson & McTighe (2006), we fleshed out a set of descriptors (Figure 1, right column) to help our teacher candidates find evidence that their students were engaging with subject-matter content and achieving curricular goals.

After examining the examples of student evidence provided for Standard 5.2, we realized the over-arching theme for this standard was "thinking meta-cognitively." We re-worked those descriptors to make them clearer and more comprehensive (Figure 2, right column).

For Standard 5.3, we identified "contributing to the learning community" as the overarching theme, and added items that would address dimensions of that idea not covered by pre-existing Standard 5 descriptors. The result is shown in Figure 3.

Using the Standard 5 Framework

With this framework, we have been able to guide our teacher candidates in gathering student-based

evidence related to Standard 5 as they engage in a year-long internship in elementary classrooms. This evidence is presented by means of several course assignments—a classroom management inquiry that investigates students' contribution to the classroom learning community, a social studies inquiry involving documenting students' metacognitive awareness of their learning, and, most notably in each intern's Teacher Work Sample (TWS), (Denner, Salzman, & Harris 2002). In the TWS, we are able to evaluate our interns' abilities to pre-assess, design appropriate standards-based instruction, and

Figure 1. Student-based Evidence of Standard 5.1.

Knowledge of Subject Matter & Curriculum Goals **Criteria—***Teacher candidates positively impact student learning that is:* **A. Content driven.** All students develop understanding and problem-solving expertise in the content area(s) using reading, written and oral communication, and technology. **B. Aligned with curriculum standards and outcomes.** All students know the learning targets and their progress towards meeting them. **C. Integrated across content areas.** All students learn subject matter content that integrates mathematical, scientific, and aesthetic reasoning.	***Student-Based Evidence: Can students do any or all of the following to demonstrate their engagement in subject matter content and achievement of curricular goals?*** • **Explain** phenomena, facts and data by referring to concepts or principles, • **Justify** their ideas based on evidence, • **Make connections** to other ideas and personal experience • **Create visual representations,** such as concept maps or flow charts or pictures to represent a concept or problem, • **Tell meaningful stories** about experiences that access the historical or personal dimension of ideas, • **Create images, sketches, stories, metaphors, or models** that communicate personal insights regarding ideas and events (textual or spoken), • **Engage strategically in inquiry** through discipline-based approaches. • **Do real-life problem-solving** using integrated discipline-based approaches and appropriate technological tools.

Figure 2. Student-based Evidence of Standard 5.2.

Knowledge of Teaching **Criteria—***Teacher candidates positively impact student learning that is:* **A. Informed by standards-based assessment.** All students benefit from learning that is systematically analyzed using multiple formative, summative, and self-assessment strategies. **B. Intentionally planned.** All students benefit from standards-based planning that is personalized. **C. Influenced by multiple instructional strategies.** All students benefit from personalized instruction that addresses their ability levels and cultural and linguistic backgrounds. **D. Informed by technology.** All students benefit from instruction that utilizes effective technologies and is designed to create technologically proficient learners.	***Student-Based Evidence: Can students do any or all of the following in thinking meta-cognitively about their own learning?*** • **Communicate the learning targets** and their progress toward them, • **Use learning strategies deliberately** to achieve the learning targets. • **Identify support and resources** to help them achieve the learning targets, • **Choose technology purposefully** to support their own learning. • **Articulate how proper and efficient use of technology enhances learning**. • Communicate the relationship between assessments and learning targets. • **Recognize their own progression of learning** in relation to learning targets • **Set personal learning goals** based upon reviewing their performance.

Figure 3. Student-based Evidence of Standard 5.3

Knowledge of Learners & Their Development in Social Contexts **Criteria**—*Evidence of teacher candidate practice reflect planning, instruction, and communication that is:* **A. Learner Centered.** All students engage in a variety of culturally responsive, developmentally appropriate strategies. **B. Classroom/ School Centered.** Student learning is connected to communities within the classroom and the school, including knowledge and skills for working with others. **C. Family/Neighborhood Centered.** Student learning is informed by collaboration with families and neighborhoods **D. Contextual, community-centered.** All students are prepared to be responsible citizens for an environmentally sustainable, globally interconnected, and diverse society.	***Student-Based Evidence: Can students do any or all of the following in contributing to the learning community?*** • **Participate responsively and sensitively in a learning community,** stepping back from particular details to recognize the larger importance or significance of a situation or event, • **Contribute to the development and maintenance of a learning community,** • **Be aware of and respectful toward the feelings, beliefs, values, and ideas of others in the community,** • **Recognize and engage with different points of view** in the community, • **Recognize** and communicate **how classroom learning connects with communities** within and outside of the school, • **Demonstrate commitment to responsible citizenship** within and beyond the classroom in areas of environmental sustainability and global interconnectedness.

analyze assessment data (including work artifacts) to determine their impact on student learning.

When interns analyze and interpret student-based evidence of learning in a Teacher Work Sample, some of their analysis is presented via tables and charts that graphically show patterns in quantitative data. However, our teacher candidates must also closely analyze and interpret student work samples in a narrative format. The following (Figure 4) is one such example from an intern's TWS showing evidence related to Standard 5.1.

A Teacher Work Sample Mapping Unit

Overall, I feel that my instruction was effective because many students met the learning goals, even if they were not completely mastered. This was apparent when looking at Learning Goal 1 pre and post assessments. This is Mindy's pre and post-assessment on LG1: *Students will understand that maps give the viewer an understanding of a specific area including geographic and community features based on the map-maker's interest.*

It is a perfect example of the growth that happened in this mini-unit. The first map is more like a picture, drawn as if we were standing on the lawn looking at the house. Labels were included, which is more than some students did, but there are no other map features present. The post-assessment on the right is drawn from a bird's eye view, includes geographic features (i.e., the river and the forest), community features (roads, houses/buildings, parking lots, campgrounds, etc.), a legend detailing what the symbols on the map mean, and a compass rose.

Notice how the intern has explicated before and after examples of student work in detail with her commentary, interpreting the evidence and making detailed connections between elements in the work and the elements of the learning goal. In addition to evidence of this type, interns also include other course assignments, artifacts capturing student voice in the form of self-assessment and records of classroom discourse.

Conclusion

After engaging in our pilot project with the Nooksack Valley School District, what recommendations do we have for teacher education programs charged with implementing Standard 5, with school partners?

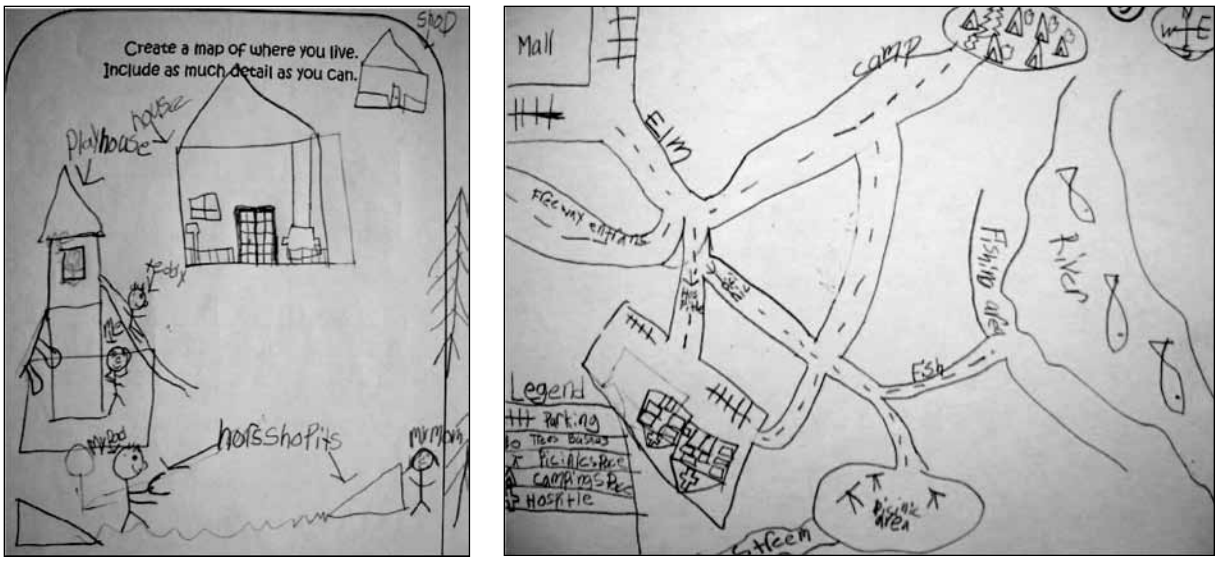

FIGURE 4.

1. Collecting evidence that shows a progression of learning requires an extended time period in the classroom: ***Teacher education programs may need to redesign field experiences.***
2. The learning culture of the classroom is highly influential in shaping the availability of SBE—if the classroom teacher isn't committed to having students develop understanding of subject matter, tracking their own learning processes, or learning how to contribute to the classroom learning community, the targeted evidence won't be available for an intern: ***Extended collaboration between teacher education programs and schools is necessary to create positive learning communities with a focus on the collection of SBE.***
3. Novices need guidance to collect & analyze complex evidence of student learning over time: ***All those participating in the internships of teacher candidates—host teachers, university supervisors, as well as university faculty—need to work with interns as they assess and document their impact on student learning.***
4. Teacher education coursework and assignments ought to structure and scaffold the collection and analysis of SBE: ***Capstone program assessments should use SBE to document essential competencies for licensure & program improvement.***

In summary, all those involved in the education of teachers must collaborate to support preservice teachers in learning how to gather, analyze and present classroom evidence that counts—evidence that they are able to positively impact their students' learning.

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Formative Classroom Assessment Instruction at Washington State University's Teacher Preparation Program

by Michael S. Trevisan and Xyanthe N. Neider

In a comprehensive review of empirical studies that investigated the impact of formative classroom assessment, Black and Wiliam (1998a) found strong, positive gains for student achievement when formative processes were used effectively and strategically to support instruction. The findings were consistent across grades, subjects, and demographic groups.

The results are compelling. The authors argue that no other school improvement strategy can make the same evidence-based claims for raising standards. Several authors have urged policy makers and legislators to seize the opportunity that formative assessment provides and fashion policies and secure resources to help teachers develop knowledge and skills in formative assessment (e.g., Black and Wiliam, 1998b; Heritage, 2007; Stiggins and DuFour, 2009).

Policy makers in Washington State have taken this call seriously and recently revised programmatic standards for teacher preparation programs to include knowledge and skills in the use of formative classroom assessment (Office of the Superintendent of Public Instruction, 2009). These expectations are broadly stated and many teacher preparation programs are just now in the process of developing a programmatic response. This article illustrates how the teacher preparation program at Washington State University (WSU) has addressed these new formative assessment requirements through its classroom assessment course. Based on Sadler's (1989) framework for formative feedback, the course utilizes three primary avenues towards formative assessment that are yielding positive outcomes: (1) student self-reflection, (2) student-instructor conferences, and (3) a revision process used in the development of assigned projects that includes both self- and peer-assessment.

After introducing the foundational elements of the course, each formative assessment component is addressed. This is followed by a discussion of how students and the program are progressing toward desired formative assessment outcomes.

Pre-Service Formative Classroom Assessment at WSU

The assessment course at WSU works to develop the assessment competence of students in the program by first providing a foundation for skill development. To this end, Stiggins' (2001) five keys to sound assessment are introduced at the beginning of the course. These keys are: (1) use of clear and appropriate targets, (2) focused purpose, (3) use of an assessment method that makes sense, (4) a sufficient sample of student information, and (5) control for bias and distortion. Stiggins' keys to quality assessment act as an advanced organizer for the course content as students learn about targets, purposes, methods, and the like. As Heritage (2007) argues, knowledge of assessment fundamentals is the foundation for learning about formative classroom assessment. Thus, students are provided a solid basis to develop their knowledge and skills in formative assessment.

> …knowledge of assessment fundamentals is the foundation for learning about formative classroom assessment.

Second, Sadler (1989) articulated a framework for student feedback that is central to formative assessment and forms the basis for all formative assessment instructional components. The framework provides the pedagogical means to help students move from passive recipients of grades to self-monitoring achievers concerned with attaining high standards. The essential elements of this framework are: (a) identification of the gap between where a student is and where they need to be with respect to a learning

Although these conferences take time, they are proving to be a powerful tool in modeling student-teacher conversations in relation to course objectives…

target; (b) strategies to close the gap; and (c) student involvement in the assessment process so that they developed a shared understanding with the teacher about the expectations, and take ownership for their achievement. This framework is incorporated in the formative oriented instructional components of the classroom assessment course at WSU.

Component 1: Student Self-Reflection

As an element of every assessment created in the class, students are expected to articulate how they have met Stiggins' (2001) five keys to sound assessment. In addition, in preparation for their final assessment of pre-service teaching competence, students are also expected to describe how each assessment meets five Performance-Based Pedagogy Assessment (PPA) criteria (i.e., alignment, technical soundness, multiple modes and approaches, formative/summative assessment, and feedback) mandated by the state (Office of the Superintendent of Public Instruction, 2004). In developing their own classroom assignments, students begin to think through and reflect upon how these five keys and PPA criteria have been met while using evidence and the language of assessment. Based on Sadler's (1989) formative framework, students begin to think about where they are in their learning and development in the course and where they need to be to meet expectations (i.e., gap identification). This activity is also closely tied to the revision process, which is further explained later in this paper.

Component 2: Student-Instructor Conference

A second formative assessment component that is implemented within the assessment course is the student-instructor conference. Midway through the semester, students meet with the instructor to discuss their performance relative to the course goals. In the conversation, the instructor further articulates course expectations and provides examples of previous student work that illustrate various stages of learning toward course expectations. In this discussion a rubric is used which identifies areas of mastery, areas that are emergent, and areas that need work. Through dialogue and demonstration, the student is better able to consider her or his own class products as evidence and use the rubric to assess performance relative to course expectations. At the end of the term, students are then able to use this information to consider further growth and write a reflection on their learning and assessment skills over the term. The student-teacher conference builds upon Sadler's (1989) framework by providing feedback to students, involving them in the assessment process, and allowing them to take ownership over their achievement. This strategy helps students to move from receiver of knowledge to active learner, from student to teacher, and places the responsibility of learning on the student. Although these conferences take time, they are proving to be a powerful tool in modeling student-teacher conversations in relation to course objectives and opening up spaces beyond the classroom where the pre-service teachers can continue to reflect upon their progress.

Component 3: Assignment Development and Revision

The basic assessment strategies available to classroom teachers—selected response, essay, performance, and personal communication, are dealt with through corresponding class projects (Neider, 2009a, 2009b). There is an extensive draft and revision process for each assessment project. Each assignment unfolds over the period of 3-4 weeks. Once the assignment is introduced, students are given class time to brainstorm with each other, use their books, and ask questions of the instructor. The following week a first draft is due, at which time they work with the assignment rubric to self-assess the quality of their work. Over the next week, students can then make revisions to their assignment based upon their insights from the self-assessment. The revised draft is then made available for peer-assessment in the next round of feedback and revision. According to Andrade (2007), "in the hands of students, a good rubric can orient learners to the concept of quality… [and]…inform self- and peer assessment, and guide

revision and improvement" (p. 61). Through self- and peer assessment and subsequent revision, students are better able to work with the assignment criteria, begin to use their new assessment literacy, develop sophistication in providing feedback, and give and receive feedback for continuing improvement, all of this before turning in the final draft. Again, based on Sadler's (1989) framework, the process involves students in the assessment process to help them monitor their own progress and take ownership for their achievement.

Moving Toward Desired Outcomes

Students have many opportunities to juxtapose their learning in the course with experiences in practicum classroom sites, experiences that occur simultaneously with the assessment course. Practicum experiences allow pre-service teachers to observe how current teachers utilize various assessment methods, which in turn, helps pre-service teachers think through the functionality of different methods for varying purposes. Periodic student feedback during the assessment course indicates that students are continuously drawing connections between course concepts and their practicum sites, witnessing the use of formative assessment and noticing the depth of information that is culled from the assessment process. Students draw connections between theory and practice by being participants in the assessment course, constructing the various course assignments, and conducting self reflections that link classroom learning to practicum experience. Many students mention that they have come to realize their thinking has changed about different classroom assessment practices, particularly with respect to the instructional use of assessment. Students report for example, a growing appreciation for the use of selected response assessments in quickly gauging where their class is in relation to targets and providing them information about how and where to change and direct teaching.

Another indicator that students see connections between the assessment preparation they receive and the challenges of classroom teaching comes through feedback from former students during their first year of actual teaching. These insights are obtained from Educational Benchmarking Inc. (EBI) first-year

alumni survey data initiated by OSPI (Board of Examiners, 2009). Survey data for the last five years consistently show ratings from our former students, now teachers, in the mid-4s to high-5s on a 7-point scale for the following items:

- Degree that education course work addressed assessment of learning
- Degree that education course work enhanced your ability to formally assess student learning
- Degree that education course work enhanced your ability to informally assess student learning.

According to EBI performance indicators these ratings are interpreted as "good" to "excellent". In sum, as WSU students progress from pre-service education to work as classroom teachers, they report that they are well prepared for the assessment demands of the classroom.

Closing Remarks

By engaging WSU pre-service teachers in self-reflection, student-instructor conferences, and a revision process for assignment development that incorporates self- and peer-assessment, students are introduced to powerful ways to use formative assessment in their classrooms. These three primary methods of using formative assessment in their preparation exemplify Sadler's (1989) framework for student feedback in the context of formative assessment. Students begin to recognize their learning relative to the targets and make plans on how they will meet course goals. They can see where they are and where

they need to be at the end of the course in relation to standards. The many avenues for feedback—student-instructor conferences as well as the self- and peer assessment opportunities, give students information they can use and act upon and involves them in the assessment process, returning the onus for learning to the student. Further, revisions to an assessment project and the ways in which students receive feedback scaffold learning for students. Although many of the pre-service teachers are at first resistant or reluctant, most usually begin to see the benefits and usefulness of these methods.

The power of formative classroom assessment for student learning has captured the imagination of educators and policy makers alike. States have the opportunity through education and credential policies to ensure that pre-service teachers leave their programs with assessment competence (Trevisan, 2002). Washington State has taken this opportunity seriously, implementing pre-service training expectations that foster formative assessment capabilities of its credentialed teachers. WSU continues to respond in kind and provide the necessary formative assessment education for its pre-service teachers. Through modeling formative assessment practice in the assessment course for pre-service teachers, students begin to see the functionality, purpose, and power of using formative assessment practices in their own future classrooms.

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PDKI's mission is to support education, particularly public education, as the cornerstone of democracy. Its vision is to be the experts in cultivating great educators for tomorrow while continuing to ensure high-quality education for today and the future.

Washington State's PDK Chapter 1599 is PDK's first state chapter. It was created five years ago when we initiated a chapter merger and chartering process. At the September 17, 2005 Charter meeting I stated, "We want this state chapter to promote and model collegiality, to be a common cause organization for all educators and future educators. We want this organization to be a network of leaders and a strong promoter of innovation and quality in education." I now add to this a call to action, "Education must be transformed to prepare our students to meet the challenges and opportunities of 21st century information and communication technology… and PDK can and is helping to improve and honor sustained improvements in student achievement and the preparation and continued development of teachers. In the fall of 2009, PDK-WA joined the Center of Educational Effectiveness (CEE) and honored 104 *Schools of Distinction* for demonstrating "exceptional academic growth" while exceeding the state average performance in 4th-, 7th-, and 10th-grade reading and math, as measured by the spring WASL. We will continue this recognition on September 25 with the second annual *Institute and Awards Luncheon* because we believe that this timely research is essential for data-driven planning and decision making when combined with professional development that is focused on effective leadership, support through "system-wide" school improvement, the quality of teaching and learning, collaborative relationships within the school, and the sharing of best practices among award-winning schools and ALL schools in the state.

What can we learn about Great Schools and Teachers? What do great schools do differently—why they are effective, and how do they select and develop great teachers? We believe the key is to help students learn by making sure that every child has an effective teacher every single day. Empirical research shows that an effective teacher has more impact on student performance than any other school-based factor. In this journal, research publications, chapter meetings and conferences we will examine teaching and leadership as it is currently practiced and honor teachers, administrators, schools and school systems that are increasing student achievement and success.

We will answer the question, "Where is Superman?" We need to tell different stories to challenge the documentary *Waiting for Superman* by Oscar-winning director Davis Guggenheim, who previously directed Al Gore's "An Inconvenient Truth." *Waiting for Superman* was a big hit at the recent Sundance Film Festival. Voted best U.S. documentary by Sundance moviegoers, Guggenheim's film exposes the immense flaws in America's public school system and follows the lives of a handful of parents and their children who struggle to find alternative routes to a better education. Significantly, Guggenheim profiles both low-income and middle-class children. http://sundance.bside.com/2010/films/waitingforsuperman_sundance2010

Improving public education is a never-ending

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Quality Formative Assessment: Thorndike-Christ

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success. Young children make little distinction between effort and ability when it comes to doing well in school. Trying hard makes you smarter and smart people try hard. Over time, students recognize that some people are successful without exerting much effort while others try very hard but fail anyway; beliefs about the relationship between ability and effort start to change. Students learn that outcomes are not necessarily controllable and that effort, at least for some people, doesn't always lead to success. Ability starts to be seen as an entity, a fixed, uncontrollable trait that one has a certain amount of and that amount cannot be substantially changed through effort (Dweck, 2000).

When students believe that ability is a set of skills that can be increased through effort, as young children typically do, they tend to focus on *learning goals—improving* their competence by gaining knowledge and skill. They measure success in terms of progress and improvement over their own past performance and attribute both their successes and failures to controllable causes, namely their own effort. Students with entity views of ability tend to focus more on *performance goals*—how they look to others. Success, for them, is measured in normative terms, in how their performance compares to that of others. Relative position among classmates indicates level of ability.

Those with a history of academic success concentrate on *proving* their level of competence through outperforming others and getting the highest scores. Students with entity beliefs who don't rank well among their peers attribute their failures to lack of ability. Since they expect to fail, they tend to be more concerned with avoiding looking stupid than with improving or proving their competence. These students *know* they are not smart enough to be successful so they tend to engage in a variety of self-defeating, ego-protective strategies, e.g., putting forth only minimal effort, giving up easily (Dweck, 2000).

Classroom assessment practices contribute to climate that promotes one or the other of these goal orientations. When assessment focuses on progress and improvement, learning goals are supported. When classroom assessments are used to rank order students, especially if they do so publicly, a teacher has created the perfect climate for the development of performance goals. If formative assessment is to be effective in improving student learning, i.e., valid, students must believe that continued effort will lead to improved competence and feel safe admitting difficulties and mistakes. Teachers can increase the level of trust by providing informative, constructive feedback in a way that is sensitive to the needs of each student and avoiding assessment practices that compare student performance to that of others.

Understanding the learning task and the learning process. Teachers must understand clearly how concepts and skills are learned and how to address effectively common difficulties students encounter during learning. Clear learning objectives and detailed criteria for evaluating student learning are required so that students fully understand what is being asked of them.

For formative assessment to work most effectively, students need a variety of types of information from their teachers including: a) the specific curricular objectives, b) how mastery of those objectives will be evaluated and c) where they are in the process of mastering them. Students can then identify areas of strengths and weakness relative to carefully articulated achievement expectations, make adjustments to their behavior, and thus improve their level of content mastery.

Ultimately students must learn to assess their own learning so that they can make timely and appropriate adjustments to their learning tactics. To be most helpful, feedback to students must be informative; it must focus on particular qualities of a student's work relative to clearly defined criteria and provide guidance about how to improve (Popham, 2008). Well-crafted rubrics with clear descriptions of evaluative criteria can be especially helpful for this purpose. Teachers must monitor effectively each student's learning and give feedback when he or she is most receptive to it (Crooks, 2004). Careful consideration of these factors makes it highly likely that formative assessment will positively impact student learning.

Conclusion

Good teachers continually strive to maximize the learning of each student with whom they work and effective classroom assessment can help them achieve that aim. The purpose of formative assessment is to improve student learning by continuously collecting data to help teachers make better instructional decisions and students take ownership of their learning and make good tactical decisions. Unlike the labor and time intensive process of establishing measurement quality following the traditional rules of measurement, establishing the validity of formative assessment is easy. If student learning is improved by use of the information it provides, formative assessment is working.

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About the Author

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battle. It is a crusade for PDK International and PDK-WA. We are advocates for the children and parents who rely on public education. We must always pay heed of Mark Twain's warning, *"I never let my schooling interfere with my education."* In PDK we identify, teach and honor the skills and legacy of great teachers. We continuously support those that want to learn to be *better* teachers.

Empowerment, recognition, satisfaction, and success come from being an active participant within a professional learning community such as Phi Delta Kappa. We invite you to join PDK-WA as we work to change local, national, and worldwide legislative and governance priorities so that we can improve educational outcomes. We invite you to help us promote the pursuit of excellence in our schools and to attend our events that bring you first hand information on educational issues locally and globally.

You can apply for membership in Phi Delta Kappa-Washington State at www.pdkwa.org.

About the Author

John Armenia, PhD, Immediate Past President 2005-2009.

Call for Article Submissions

The Washington State Kappan,

a journal for research, leadership, and practice

Fall 2010 issue theme —

Schools of Distinction: What We Are Learning...

Deadline for submission — **June 21, 2010**

The fall issue will focus for the second year on the Schools of Distinction. Articles describing how a School of Distinction implements one of the Nine Characteristics of Effective Schools will be considered. Strategies should be described in sufficient detail for replication by others. Schools, and administrators and teachers from school districts that are repeat Schools of Distinction awardees will be given priority for inclusion in this issue. Deadline for submission June 21, 2010.

Spring 2011 issue theme —

Innovation

This issue will include new and promising practices in Washington State P-12 and higher education. We are looking for programs and practices that are not just change for change sake, but those that connect to research and the Washington State Kappan goals: leadership, practice, and research. Examples can be wide and varied and might include on-line learning, Race-to-the-Top, and many others.

Manuscript Submission Guidelines

Manuscripts and book reviews may be submitted by e-mail as an electronic attachment to Mary Lynne Derrington, Editor, *Washington State Kappan, a journal for research, leadership, and practice.*

MaryLynne.Derrington@wwu.edu • (360) 650-4320

1. Preference will be given to articles with examples or applications pertinent to Washington State.
2. Articles should focus on one of the journal foundations: research, leadership, or practice.
3. The preferred length of the article is between 800 and 1200 words.
4. Submit the article as a Microsoft Word file, as an attachment to an email.
5. A photograph of the author is optional. However, current email address is requested and will be published.
6. APA guidelines should be followed.

Send proposals to and obtain additional author guidelines from the editor. All papers will be subject to peer review and evaluated for connections to the theme, uniqueness of the contribution to the field, applicability to Washington State educators, and adherence to manuscript guidelines.