The Power of an Effective Educator

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Foreword

By Leslie W. Grant, Ph.D.

Think back to your own K12 education and the teachers who touched your life. Anyone who has had an influential teacher already knows what empirical research supports—teachers make a difference. In *The Power of An Effective Educator,* this message is sent loud and clear capturing the complexities of understanding teacher effectiveness. But it is not enough for us to stop at this finding. What is most important lies in the answer to the question—what do effective teachers do? The review of literature presented here provides answers to this question. The answers can be found in the work of influential psychologist Lev Vygotsky as well as more recent research (over the past twenty years) of the Assessment Reform Group in the United Kingdom. Assessment is at the heart of what makes an effective teacher and as teachers develop greater proficiency in the competencies and skills related to assessment student learning improves. While researchers might disagree on the magnitude of the effect, consensus is that using assessment data to adjust instruction and improve student learning makes a difference (Grant & Gareis, 2014). *The Power of An Effective Educator* focuses on how assessment fits into the complexities of understanding what makes educators effective.

In essence, separating assessment from teacher relationships with students, organization and management of the classroom, and helping students develop a sense of responsibility is contrived. These qualities are integrally related with assessment. A teacher's relationship with students can impact the assessment process and vice versa. When students believe that classroom assessment is being used to help them learn, they have a different view of the assessment process and of the reason why they are being assessed. Rather than seeing assessment as a "gotcha" they see it as a vehicle for learning. Involving students in the assessment process through goal setting helps them to develop that sense of responsibility.

Finally, *The Power of An Effective Educator* provides a conceptual model for thinking about the role of assessment in the classroom—Assess, Teach, Learn. Although a cyclical, ongoing process, notice the placement of the processes. Rather than the traditional linear model that many adults experienced themselves in school of Teach, Learn, Assess, the model is flipped. Assessment comes before teaching, informing the teaching and learning process so that students learn—and the cycle continues. Rather than assessment being viewed as an end, it is a means to an end—student learning. The same goes for effective teachers. They are the means to that same end. *The Power of an Effective Educator* provides a substantive, compelling overview of the research related to effective teaching and how the research into the impacts on student learning has evolved over time. In addition, the review provides concrete ways that teachers impact student learning and how assessment is an integral part of that process. This review helps the classroom teacher think about how assessment data can be used to inform instruction and results in improved outcomes for teaching and for learning.

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Introduction

Teachers, by our collective nature, are in the "getting better every day" business. We seek to be as effective as possible in helping others grow in intellect, compassion, and sense of personal and social responsibility. We devour research on pedagogy, explore techniques and strategies proven to lead students to greater achievement, and join in social and traditional media to share what we learn about learning. Our power is found in ways we empower our students to become vested partners in their own learning.

The purpose of this paper is to share current understandings related to educator effectiveness and implement those understandings in the Renaissance Learning™ accelerated learning framework: *Assess, Teach, Learn*. Specific dimensions of effective instructional practices are discussed, including the purposeful use of STAR™ assessment data and Core Progress™ learning progression for reading and mathematics.

Throughout this paper, concepts related to assessment are based in original meaning of the term—derived from the Latin *assēssus*—which means *to sit beside and make decisions as a judge*. From this origin, assessment was used to assign value to property. For students, learning is their property. They own it and it becomes their capital for success in school, in college, at their career, and throughout their lives.

The structure of this paper is built from Renaissance Learning's three core beliefs about educator effectiveness and student empowerment.

- We are continually developing greater understandings of effectiveness
- Educator effectiveness includes identifiable and teachable behaviors
- Effective educators build empowerment through the insight gained from the skillful use of data

In the first section of this paper, *Develop Greater Understandings*, we wonder about the power of an effective educator and our long-reaching impact on learners. In the following section, *Identifiable and Teachable*, we review commonly cited research and widely implemented standards for teaching to gain a deeper understanding of how we can become even more effective in our craft. The final section, *Build Empowerment through Insight*, explores the Renaissance Learning accelerated learning framework: *Assess, Teach, Learn*.

Develop Greater Understandings

Power and Empowerment

From a physics perspective, power causes an object to change through the application of strength. In the educator effectiveness perspective, power causes student learning to deepen through the application of the educator's strength in the content area, strength in skillful use of assessment data, and strength in presenting complex concepts in a logical, learnable progression. As a result, the power of an effective educator is evident via positive changes in achievement. Measurements of this power include metrics that report student achievement relative to an expected benchmark, such as:

This is the value of the teacher, who looks at a face and says there's something behind that and I want to reach that person, I want to influence that person, I want to encourage that person, I want to enrich, I want to call out that person who is behind that face, behind that color, behind that language, behind that tradition, behind that culture. I believe you can do it. I know what was done for me.

- Maya Angelou

- Grade on an assignment
- Benchmark score on state and/or other high-stakes exams
- National percentile rank (PR)

The power of an effective educator, however, causes another critical change through the application of strength. This strength is the educator's depth of understanding learners and the significance of *student empowerment*. Empowering students is a multi-dimensional, social process that leads students to develop control over their own lives (Page & Czuba, 1999). At school, effective educators empower students via deeper understandings of the world about them; helping them develop skills and resources not only to survive, but to thrive in it.

Empowered students are vested in the work of learning, as is evidenced by:
- Academic growth
- A sense of responsibility for their own learning
- Working in partnership with teachers
- Interest in assessment data as a means to move learning forward
- Understanding what leads to success and a belief that it is within reach
- Resiliency, perseverance, or grit
- Contributions to social interaction during learning

Documenting empowerment is a complex task requiring a focus that includes analysis of cognitive and non-cognitive measures. In other words, we need to review more than quantitative achievement metrics. Qualitative measures such as point-in-time surveys, long-range participant observation methodologies, and reviews of correlation studies, such as those which track engagement and achievement gains must be considered. Measuring student empowerment is worth the effort to do so, and worth measuring from the child's earliest exposure to school because students taught by effective teachers are more likely to:
- Out-earn their peers throughout adulthood
- Generally enjoy better health
- Live longer with less disability at the end of their lives
- Return a substantial benefit to their communities (Jagger, et. al. 2007: Lleras-Muney, 2005; Wiliam, 2011)

Kindergarten students taught by highly effective educators are less likely to have children as teenagers, more likely to attend college, and more likely to out earn their peers by $1000 per year as young adults (O'Donnell, 2010). While $1000 per year may seem minimal, think exponentially. Think in terms of the numbers of effective kindergarten teachers and the numbers of young scholars they empower each year. Highly effective kindergarten teachers impact the value of students' lifetime earning potential by approximately $250,000 per classroom (Chetty, R., et. al., 2011; Chetty R., et. al., forthcoming). Additionally, these students are more likely to own a home and prepare for retirement.

Imagine the impact if every kindergarten teacher were highly effective, empowering students to build their capital from the onset of their formal education through the realization that learning is a life-long endeavor. Consider the benefit to the community. The power of effective educators is evident to the community via additional tax revenue generated by higher earnings, reduction in health care costs and criminal justice costs. The total economic benefit to the community—per student—is approximated at just over $209,000 (Levin, et. al. 2007).

Educator Effectiveness and Student Empowerment
Developing educator effectiveness is far from a new concept; and the same is true for student empowerment. Coleman's 1966 report to the U. S. Department of Health, Education and Welfare (now the Department of Education) noted distinct differences in educational opportunities available to children based on race and ethnicity. Students from economically advantaged backgrounds, and those in the majority population routinely out-performed their peers from disadvantaged or minority backgrounds. We needed to understand why one group seemed empowered to a greater degree than the other and what could be done to alleviate the gap.

During this same time period, the Hart & Risley 1965 seminal study on language development (cited by Orr, 2012) found a correlation between socioeconomic status and early language development. Students raised in poverty were less likely to have developed adequate vocabulary in their early years to be successful in school. From seven months through their third year, children raised in poverty were exposed to approximately one-third as many words as their peers from working class homes, and about one-fourth as many words as their peers who were raised by professionals (educators, medical workers, business persons, attorneys, etc.). By school age, the "word gap" between advantaged and disadvantaged peers could grow to as much as 30,000,000 words, which led some to conclude that what children lack upon entering school distances them from their more advantaged peers—a distance that grows wider with each passing grade level (Bernstein, 1970; Orr, 2012).

One such application from this conclusion is that educators must be realistic in working with students from disadvantaged backgrounds and set expectations appropriate to their socioeconomic status (Bernstein, 1970); however, establishing learning expectations based on what children lack, rather than how much they can grow, is counterintuitive to people who empower learners. As a result, researchers looked to the one consistent, universal, and controllable variable in student learning—the effectiveness of each educator.

In fact, as Coleman (1966) researched school characteristics correlated to student achievement, he noted that "variations in facilities and curriculums of schools account for relatively little variation in pupil achievement . . . The quality of teachers shows a stronger relationship to pupil achievement" (Coleman 1966, page 22). Further, Coleman states that the impact was progressively greater at higher grades indicating a cumulative impact of effectiveness in fostering student achievement. Effective educators were empowering students—they were causing change through strength (Chenoweth, 2009; Reeves, 2003) and we needed to understand how.

Teachers are the dominant factor affecting student achievement (Coleman, 1966; Barber, M. & Mourshed, 2007; Chetty, et. al., 2011; Wright, et. al., 1997). When looking at teacher effectiveness, researchers found that there is greater variability of effectiveness within schools than between schools (Nye & Konstantopoulos, & Hedges, 2004). When what happens in the classroom is of the highest quality, teachers do empower students regardless of socioeconomic or majority status (Wiliam, 2011).

In other words, teachers matter. They matter a lot.

So how much is "a lot?" How much of the variability in student achievement can be explained by the teacher? Hattie (2003) reports that a student's home life, school, influence from peers, and teacher, as well as the student him or herself impact achievement. Home life, school, and peers influence each contribute 5 % - 10 % (cumulatively 15% - 30%) of the variability in achievement. The student accounts for approximately 50% of the variance; whereas the teacher counts for approximately 30% of the variance. In other words, education can compensate for demographics, socioeconomic status, and peer influences as long as the teacher and student are committed to effectiveness.

The 2012 Program for International Student Assessment (PISA) report provides intriguing data regarding characteristics of students who achieve at school (OECD, 2014). PISA, supported by the Organization for Economic Cooperation and Development, gauges the performance of 15 year olds in dozens of countries around the world. Quantitative results from the annual PISA highlight schools where student achievement is the norm, while qualitative findings from ongoing field studies help us understand how that happens. These results illustrate that, while students from advantaged backgrounds tend to out-perform their peers from disadvantaged backgrounds, in the most effective schools, students from disadvantaged backgrounds perform as well as their peers from advantaged backgrounds.

Among the identifiable variables in schools where students perform equally well on the PISA regardless of socioeconomic status, two emerge as most evident: relationships and resiliency. Students understand that their teachers genuinely like them and want them to succeed. Teachers understand and convey to students, that resiliency, or grit, is a better predictor of success than IQ, talent, or socioeconomic status. Relationships and resiliency define the culture of these schools.

Resiliency or *grit* is defined as perseverance and passion for long-term goals (Duckworth, et. al. 2007). Across multiple studies, differences in grit accounted for variances in success *beyond that explained by IQ or talent* (see Duckworth, et. al., 2007). In other words, students matched in IQ for academic pursuits and/or talent for athletic and

artistic endeavors, differ in grit; and the grittier ones surpass their equally talented, but less gritty, peers. In a study focused on mathematics achievement, the findings indicate that IQ does not predict growth in mathematics; it only determines a student's starting point (Murayama, et. al., 2012). People who empower know that starting points are just that—a place to begin. Starting points are informative, yet finite. Growth is infinite.

The next logical step is to take these findings and build educator effectiveness to implement them in every classroom to empower every student.

Identifiable and Teachable

In this section, we focus on identifiable and teachable qualities of effectiveness, referencing the work of several of the most commonly cited researchers and authors in the field. Additionally, we cite the practical application of the research in terms of frameworks for teaching and established standards for the profession. While the list of organizations, researchers, and authors is certainly not exhaustive, it does serve to show a growing consensus of thought as it relates to identifying qualities shared by effective educators and provides a common language of effectiveness.

> One looks back with appreciation to the brilliant teachers, but with gratitude to those who touched our human feelings. The curriculum is so much necessary raw material, but warmth is the vital element for the growing plant and for the soul of the child.
> *- Carl Jung*

In their on-going explorations of what makes a teacher more effective, Stronge, Ward & Grant (2011) identified 15 teacher effectiveness dimensions. While each dimension leads to some degree of effectiveness, their research indicated that four of the 15 dimensions were consistent among highly effective educators:

- Classroom management
- Organization
- Positive relationships with students
- Greater sense of student responsibility for learning

These four dimensions are widely reported in the educator effectiveness literature and are the framework for our discussion.

Classroom Management

Classroom management is all about instructional time. Effective educators are in essence effective managers. They use time efficiently, establish classroom routines, and monitor student behavior (Danielson, 2007; Marzano, 2007; NBPTS, Stronge, Ward, & Grant, 2011). In doing so, these educators regain precious instructional time. They do so through the adherence to established daily routines and time invested for students to become fluent and automatic in those routines.

> She set demanding goals and insisted on discipline while managing to exhibit respect and concern for her students at the same time . . .
> *- Rep. John F. Tierney, MA, National Education Agency, 2009*

Effective educators continually monitor routines, behavior, and student achievement. We believe that the first and most efficient step to student achievement is to measure its occurrence. The skillful use of formative and interim assessment data provides the greatest of information in the least amount of time. These data, used in concert with the educator's knowledge of each student and how learning progresses in a specific discipline, gives each educator the insight needed to lead each student to succeed. With insight, educators:

- Identify students in need of intervention
- Inform goal setting and instructional practice
- Monitor progress toward goals

In addition to using time efficiently, students in well-managed classrooms understand expectations for behavior and working with the classroom (Stronge, et. al. 2008). As a result, instances of disruptive behavior occur less frequently—approximately one disruption per hour in well managed classrooms as compared to disruptions every 20 minutes in less effectively-managed classrooms (Stronge, et. al. 2008: Stronge, Ward, Grant, 2011). Basically, students know effective teaching when they experience it and their strongest indicators of effectiveness are related to the teacher's control of the classroom and ability to challenge students with meaningful work—both linked to greater achievement gains (MET, 2010).

Skillful use of routines and attention to student behavior results in more available instructional time—up to 30% more (Leigh, 2010; Stronge, Ward, & Grant, 2011; Wiliam, 2011). As a result, students in the hands of an effective educator master content in half to three-quarters of the school year as compared to their peers working with less effective teachers who require a full year of instruction (Leigh, 2010).

Certainly classroom management routines can be taught and in doing so, effective educators and their students gain time to explore concepts at a deeper level, engage in more practice to develop fluency in basic skills and automaticity in applying those same skills.

Organization

The organization dimension is all about being logical—logical in the physical organization of the classroom, logical in selection of appropriate resources, and logical in instruction. Ultimately, organization is about being structured and giving students engaging and relevant work (Ruday, 2014). Effective educators structure the physical organization of the classroom by ensuring availability of materials and resources as well as paying attention to the efficient use of space (Stronge, Ward, & Grant, 2011). For example:

> Ms. McNeil had a natural way of explaining complicated subject matter.
> *- Rep. Edolphus Towns, NY,*
> * National Education Agency, 2009*

- When students work with peers, the classroom is arranged to allow for moving into and out of the group, space for the group to work, and expectations of respect and privacy so that multiple groups can engage in discussions at the same time.
- As students practice skills, read for enjoyment, and reflect on progress toward goals, each one has adequate individual space.
- Teachers have a dedicated space to review data and conference with students.

From the student perspective, the classroom is organized when:

- I can easily navigate among tables, desks, and learning areas
- I have access to materials and resources I need
- New ideas are developed logically in an order that makes sense
- Learning with peers is a routine part of my work in this classroom and there is space to do so
- Time to practice what I am learning is a critical part of learning in this classroom
- I have access to practice via traditional and technology tools
- My teacher and I often conference in a space that invites discussion but allows for privacy

In addition to the physical organization of the classroom, instructional organization plays a role in student achievement. In other words, effective educators understand how learning happens in specific domains (Danielson, 2007; InTASC, 2103; NBPTS, Stronge, Ward, & Grant, 2011).

By its nature, learning involves a progression from naïve to complex understandings; yet despite abundant work with standards, scope and sequence documents, pacing and curriculum alignment initiatives, many educators stand to benefit from understanding precisely how learning happens in each discipline (Heritage, 2008). A learning progression lays out in words and examples the intermediate steps toward deeper and deeper understandings (Pellegrino, 2011).

The power of a learning progression, such as Core Progress from Renaissance Learning is that it lays out a continuum to guide teaching and learning over time so that student competence in the discipline is advanced coherently and continuously (Renaissance Learning, 2013). Core Progress is empirically validated using data from millions of STAR assessments. This means that the order of skills in Core Progress is highly correlated with the difficulty level of STAR assessment items. As a result of this statistical link between STAR and Core Progress, students' STAR scaled scores provide the entry point in the progression of skills in Core Progress. At this point, teachers know what students are ready to learn next and what prerequisite skills they need to strengthen their developing knowledge. This is insight.

STAR assessment data pinpoint where students are; Core Progress provides a learning continuum to take students where they are ready to learn. As a result, effective educators use their knowledge of each student, knowledge of the subject matter, and knowledge of how learning occurs to engage students in systematic, strategic, organized lessons (Danielson, 2007; Darling-Hammond & Ducommun, 2010, InTASC, 2013; Marzano, 2010; Strong, Ward & Grant, 2011).

The organization structure for Core Progress includes:

- Specific discipline, such as *Reading, Mathematics*, or *Science*
- Learning domains within the discipline, such as *Numbers and Operations in Base Ten*
- Expectations within each domain for each grade level
- Skills, sub-skills, and resources to develop mastery

The expectations within each domain at each grade level are expressed in grade-by-grade expectation statements. Each grade-level statement presents the overall learning for that domain at that grade level for that year. From the teacher perspective, these statements provide an overview of the progression for each domain, for example:

> *Number and Operations – Fractions Grade 3: Students develop an understanding of fractions as numbers. They represent fractions on a number line, identify equivalent fractions, and compare fractions with like denominators.*

Because Core Progress provides access to all grade-level domain expectation statements, teachers can review the expectation for the grades prior to and the grades following their assigned grades. As teachers focus on these statements, they build insight about how the domain develops from foundational to complex understanding.

From the student perspective, these statements provide those signposts of understanding along the way, and may even contribute to a mindset focused on moving forward and growing in conceptual sophistication, for example:

- I understand that fractions are numbers
- I know how to show fractions on a number line
- I can explain why two fractions are equivalent
- It makes sense to me to compare fractions with the same denominator

Educators gain effectiveness as they focus on the physical and instructional organization of their classrooms. They use STAR assessment data to gain insight about each student. They deepen that insight with Core Progress as they explore skills students are ready to learn and resources to support that learning. They use that insight to find their own natural way of explaining complicated subject matter.

> She took a vested interest in me as a person and not an athlete. Ultimately, her instruction allowed me to take tougher honors classes in high school, which in turn prepared me to be a good student at Vanderbilt University, one of the most prestigious universities in the country.
> *- Shelton Quarles, Tampa Bay Buccaneers, National Education Agency, 2009*

Positive Relationships with Students
Highly effective educators project fairness, respect, and a genuine interest in students' success in school, and on into their lives outside of school (Gallup, 2014; Stronge, Ward, & Grant, 2011). The National Board for Professional Teacher Standards (NBPTS) recognizes positive relationships with students as a commitment to the learners

and to their learning. In other sources, you see this commitment to students and their learning expressed as an understanding of child and adolescent development. It is also stated in terms of building relationships with learners that focus on success beyond school, and guiding students to accept responsibility for their own learning. In other words, effective educators understand themselves as leaders. They lead students to achieve in school, in their work beyond school, and in their relationships with their communities (Danielson, 2007; NBPTS, 2002; Stronge, Ward, & Grant, 2011).

The classroom management dimension focuses on establishing routines in order to gain instructional time. The organization dimension focuses on logical, systematic instruction. With both dimensions, the results can be quantified. This dimension may appear difficult to quantify; however, one impact of positive relationships with students is realized in an increase in engagement, which is the critical component of empowerment. This dimension can be quantified, in part, by noting increases in student engagement—and like teachers, engagement matters. It matters a lot.

In the Gallup report, *State of American's Schools; the Path to Winning Again in Education* (2014), of the 600,000 students surveyed, those who strongly agreed that their schools are committed to building strengths and that at least one teacher makes them feel excited about the future are 30 times as likely to be engaged learners as their peers who disagreed with both statements. A future orientation is central to engagement. Coyle (2009) writes that a sense of future belonging is essential to engagement. In the classroom, this sense of future belonging is critical to students understanding that the work they do in school today is relevant to what they will do beyond school. One highly-effective, urban high school in the southwest fosters a sense of future belonging by asking graduates to send photos of themselves achieving at their colleges, in their branches of the military, or in their careers and lives. Students walking through the halls are surrounded by images of those who waked those same halls, were engaged in those same classes, and achieved in that same school and beyond.

Undoubtedly, engagement is critical to student achievement. In a 2009 study, Gallup reported that a *one-percentage-point increase* in the Grand Mean (mean of all schools involved in the study) in student engagement was associated with:

- Six-point increase in reading achievement scores
- Eight-point increase in math achievement scores

As this suggests, engagement is critical and it is nurtured through positive teacher/student relationships. The process to build engagement mirrors that of accelerating achievement. This first step is to measure its occurrence. Measuring engagement may seem out of reach; however, classroom observation as well as individual and small group conferences yield important information.

The dynamics of engagement empowers every student. Teachers who genuinely believe in their students' potential for success inspire a sense of optimism and confidence in their ability to achieve (Gallup, 2013).

Greater Sense of Student Responsibility for Learning
The responsibility to empower students belongs to the teacher; however, students own the responsibility to be empowered. In other words, educator effectiveness provides the environment, resources, management, and organization required for achievement, but learners are responsible for their engagement in that environment and with those resources.

Learner effectiveness matters. It matters a lot.

In this section, we explore documented ways to build learner effectiveness—which is a greater sense of responsibility for their own learning. In essence, it is about ownership. Effective educators foster their students' greater sense of ownership by engineering:

He taught his students that each of us had the ability to tap into untouched levels of human potential, and we had a responsibility to our community and nation to stretch to those heights.
- Rep. Timothy Ryan, OH, National Education Agency, 2008

- Optimally challenging tasks
- Sociocultural approaches to learning
- Goals that reflect students' values and interests
- Personalized practice
- A growth mindset

Optimally challenging tasks are those within the student's zone of proximal development—that is they are neither too easy nor too difficult (US DOE, 2013). While this description of the zone of proximal development (ZPD) is accurate and instructionally sound, there is more to understand about ZPD. We begin with Vygotsky's definition (1978, pp. 86):

> *It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.*

In addition to a range of difficulty, Vygotsky stressed at least four additional dimensions of the ZPD:
- Independent problem solving
- Accessing peers as instructional resources
- Receiving guidance from adults
- Focused on growth

Vygotsky identifies working within the ZPD as both an independent and social enterprise; however, the greater emphasis is on sociocultural interaction. He goes as far as to say that learning requires social interaction with adults and collaboration with peers (Vygotsky, 1978, see discussion pp. 90).

Vygotsky's elder daughter, Gita Vygodskaia (1995) shared ways that her father taught her about sociocultural learning within the ZPD. Although Vygotsky did not use the terms *zone of proximal development* or *sociocultural learning* with Gita, his description, as shared below, clearly depicts his philosophy about students expanding their knowledge by working with more knowledgeable peers, and deepening their understandings as they worked with adults.

> *He suggested to me that I go and ask my classmate about what she didn't understand, and try to patiently explain it to her, and if I couldn't do it so she would understand perfectly, then he [Vygotsky] would be glad to help me. "But here is the most important thing," he added, "you must do all this so your friend is sure you really want to help her, and really mean her well, and so it would not be unpleasant for her to accept your help."*

The concept of working with a group to expand the reach of the ZPD is evident as students work individually and with peers to explore mathematics concepts at deeper and deeper levels. Wiliam (2011) echoes Vygotsky when he writes that activating students as instructional resources for one another expands the reach of conceptual development. Further, it is reported that effective engagement in peer tutoring has an impact almost as strong as one-on-one instruction with a teacher (Schacter, 2000 in Wiliam, 2011).

Vygotsky (1978, 1986) and Wiliam (2011) lead us to understand the ZPD and outline a pathway to providing optimally challenging tasks for students:
- Use multiple data points to understand each student's ZPD
- Use the insight gained from data to guide the degree of challenge for each student
- Lead students to understand that "owning" their learning is a social, rather than isolated, enterprise
- Additionally, lead students to understand that they have power to serve as instructional resources for their peers (Wiliam, 2011)

Setting personalized goals that reflect their own values and interests vests students at a deeper level in their own learning. What is critical to understand here is that the goal need not be far-reaching or lofty. Engage students in goal-setting related to growth as achieved through personalized practice—custom made for each student. STAR assessments provide data to guide in goal setting and personalized practice.

Finally, ***fostering a growth mindset*** is critical to students' sense of ownership for their own learning. As was stated, effective educators gravitate toward growth. Our center of gravity—that irresistible force that pulls us to the core of the profession—is growth. Dweck's concept of a growth mindset (2006) empowers learners by putting them squarely in control of their own learning.

In the growing bodies of research on perception and perseverance, evidence indicates a link between a growth mindset and a student's commitment to reaching long-term goals (Coyle, 2009: Duckworth et. al. 2007; Duckworth & Eskreis-Winkler, 2013; US DOE, 2013). So how do effective educators nurture something as nuanced as a way of thinking?

It begins by quantifying growth. Understand the Student Growth Percentile (SGP) metric accessible via a pre/post administration of STAR assessments. The SGP metric is unique in that a student's growth is reported relevant to the growth of his or her academic peers—those grade-level peers who share a similar pretest score. The SGP highlights growth over time rather than achievement at a single point in time. So how does this play into building growth mindsets? Betebenner (2013) says it best—"The future is yet to be written." When teachers and students recognize growth as the pathway to achievement and that their futures are yet to be written, the growth mindset is nurtured.

Once a focus on growth is established and considered a routine part of achievement discussions, effective educators continue to nourish the growth mindset with organized learning and attention to what we acknowledge in the classroom.

- Use Core Progress learning progression to focus on working through the learning in identifiable and manageable chunks
- Acknowledge perseverance over intelligence or talent—as perseverance can be applied to any endeavor whereas intelligence or talent may limited to specific areas, such as "really a natural when it comes to math" and "a gifted musician"

Throughout the first two sections of this position paper, we have established that the goal of educator effectiveness is student empowerment. In the final section of this position paper, we explore ways to build empowerment through insight.

Building Student Empowerment through Insight

Effective educators use data to craft learning environments focused on student engagement, conceptual understanding, collaboration, and growth (Chenoweth 2009; Danielson, 2007; Wiliam, 2011). In this section, we focus on building student empowerment through a model where insight gained from assessment guides teaching, and a deep understanding of how concepts are developed impacts learning.

> The one exclusive sign of thorough knowledge is the power of teaching.
> *- Aristotle*

Renaissance Learning solutions and professional services are implemented in such a model—an interconnected framework of Assess, Teach, Learn. The insight gained from assessment empowers educators to trust their best instructional instincts. The knowledge educators develop about how students learn continually refines those same instincts, and the skillful application of insight and practitioner expertise motivates students, empowers them as owners of their own learning, and accelerates learning.

Assess: Insight to Trust Your Best Instincts

Effective teaching moments are shaped by insight. This is the purpose and the power of good assessment. Wiliam (2011) states that the skillful use—the insightful use—of assessment is critical to educator effectiveness and student empowerment.

As was stated earlier, for students, learning is their property. They own it and it becomes their capital for success in school, in college, at their career, and throughout their lives. Empowering students begins with assessing their learning so that we make informed decisions about growing their capital.

In the education arena, we work within an *assessment continuum* that spans from formative assessment processes designed to inform instruction on one end of the continuum, to summative assessments typically associated with federal or state initiatives and designed to implement far-reaching, high-stakes decisions on the opposite end of that same spectrum.

Accelerated Learning Framework

While it is perhaps common to describe assessments in terms of attributes such as fixed-form, computer-adaptive, or timed, a deeper understanding of assessment is developed as we focus on the purpose of the assessment and the function the data serve (Forgarty & Kerns 2009). For example, educators engage students in formative assessment for the purposes of guiding teaching in real-time. Formative data equip educators with information to make decisions about the next steps in the instructional cycle.
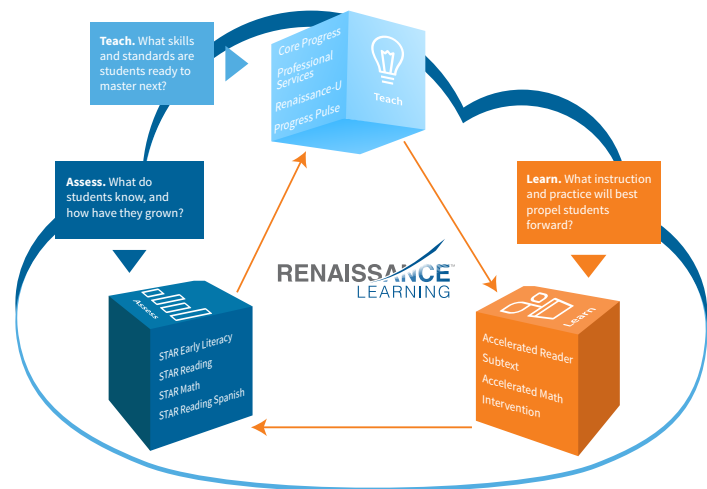
> Insight is the difference between knowledge and discovery.
> *- Renaissance Learning*

Formative assessment describes a process used to provide evidence of student understanding, and then use that evidence to make decisions about what to do next (Wiliam, 2011). Formative assessment is fundamentally and inherently at the core of teaching and learning (Heritage, 2010). Formative data can be generated with something as organic as a teacher asking a question. Teachers carefully craft questions for a variety of purposes, such as to determine the range of students' existing knowledge, check for understanding, and gauge interest. Students' feedback provides information that moves learning forward—even if moving forward means taking a step back to build baseline knowledge.

Data available via teacher and student engagement with learning programs such as Accelerated Reader™ or Accelerated Math 2.0™ can be used formatively. These data are accessible via reports as well as reading and math data dashboards. Educators use the data to answer more far-reaching questions in order to adjust instruction at a deeper level. For example:

- Are my students progressing toward their personalized reading goals?
- Do the data indicate a balance among the amount of reading, the depth of comprehension, and attention to a wide variety of reading?
- As students and I discuss reading progress, is a developing love of reading evident?
- Are students in math groups gaining depth in each skill?
- Could math fluency be at the root of some of my students' math challenges?

Interim assessments, generally administered at specific times throughout the year, are purposeful as they are used to gain deeper understandings about each student. Data from interim assessments are stored and reports generated as needed for analysis among educators and with students. Interim assessment data are used to guide decisions about instructional grouping, support teaching over time, and provide documentation to monitor growth throughout the year.

Interim assessment data function to:

- Identify students potentially in need of challenge or reinforcement
- Guide educators as they establish collaborative instructional groups
- Provide for ongoing progress monitoring
- Indicate need to adjust instruction and/or intervention
- Gauge standards mastery
- Project performance trends
- Measure growth over time

STAR assessments, often used as interim assessments, are designed to respect instructional time—providing the greatest insight in the shortest amount of time. Real-time reporting provides continuous educator insight to map an accelerated learning path to empower each student.

Indeed, effective teaching moments are shaped by insight and the first step to building empowerment through insight is to *understand and act on data*. Formative data serve to guide instruction as it happens. Whether educators ask questions, engage students in digital debate, or create personalized assessments, the function of formative data is to inform instruction. Interim assessments provide deeper insight related to each student. These assessments, generally given at specific points throughout the year, yield stored data, retrievable via dashboards, that continually offers insight to map an accelerated learning path for each student.

In the next section, we explore ways to build empowerment by building assessment maturity and greater knowledge of how learning happens.

Teach: Create Powerful Teaching Moments as Often as Possible
Powerful teaching moments are the result of using data in the most insightful way. Not only must we understand what students know and what they are ready to learn; we must also understand how to lead them through those next steps in learning.

Just as there is an assessment continuum, there is an *assessment maturity curve*—a continuum of knowledge, skills, and actions that bridge assessment and learning. Building assessment maturity among educators belongs in the zone of proximal development as surely as building math power among fifth graders belongs there. The same principles apply. Assessment maturity begins with acquiring vocabulary to develop concepts.

> I just gave you what I knew you needed before you had to ask for it. Education is the miracle, I'm just the worker. But I'm a teacher. And that's what we do.
> *- From "Miracle Workers" by Taylor Mali*

As educators work with peers, they develop greater assessment maturity (Grant, 2011; MetLife, 2012; NEA, 2013), and often that takes the form of professional learning communities, teacher cadres, or action teams.

The assessment maturity curve includes:

- Purposeful use of assessment
- Effective implementation of workflows and processes involved in assessment
- Practitioner expertise to interpret data and adjust instruction based on data

Purposeful use of assessment is the foundation for assessment maturity. As was discussed in the previous section, there may be a tendency to describe assessments in terms of their format, such as fixed-form or computer-adaptive; however, conversations about assessment gain power when there is a greater focus on the purpose for assessment and the function of the data. Stiggins (2007) leads us to understand purposes for assessment and functions of data as he distinguishes between assessment of learning and assessment for learning. According to Stiggins (2007) the purpose of assessment of learning brings is to check achievement status. On the other hand, the purpose of assessment for learning is to guide students to learn more.

Understanding the *purpose* leads educators to engage in *purposeful*, or *deliberate*, use of assessment and its data. In assessment of learning, the data function to inform others about student achievement, gauge standards mastery, and sort students accordingly. With the deliberate use of assessment for learning, the data function to inform students about their own learning, and inform instruction as their teachers guide them to meet the achievement targets "that underpin standards" (Stiggins, 2012).

Effective implementation of workflows and processes involved in assessment is essentially fidelity of administration and how the administration itself has the potential to impact data quality. Renaissance-U™, cloud-based professional services support educators as they understand what is required for effective implementations, be it for formative or interim assessment, reading or math personalized practice, acquiring vocabulary, or developing math fact fluency.

Practitioner expertise to interpret data and adjust instruction based on data, at the upper end of the assessment maturity curve, is in essence data literacy. Data, in the rawest form, are simply numbers. Insight is understanding data in the context of the human they describe. Insight requires data literacy as well as a deep understanding of students and how they learn. Core Progress, as discussed throughout this document, lays out a continuum to guide teaching and learning over time so that student competency in the discipline is advanced coherently and continuously. For example, if a student is struggling with long division, use Core Progress to map backward through the progression of skills involved in long division. Which prerequisite skills need attention? Could it be that place value is at the heart of the student's long division struggle? If so, which readily available resources can be used to develop place value mastery?

Core Progress bridges assessment and instruction as STAR pinpoints where students are, and Core Progress provides a learning continuum to take students where they are ready to learn. In this way, Assess, Teach, and Learn become interrelated via assessment maturity, data literacy, and a deep knowledge of learning.

Assessment provides data to inform instruction. Teachers use STAR assessments, coupled with their practitioner expertise and knowledge about each student, to understand—deeply understand—what makes sense, what is confusing, and what skills are needed to move forward.

Teachers use Core Progress to understand the progression of learning so they can take action on that data with access to detailed information and actionable resources. During instruction, teachers use Progress Pulse™, a Renaissance Learning student response tool, to access student feedback in real-time and keep instruction moving in the right direction.

Professional learning communities play a critical role in developing maturity about data, about teaching, and about learning (Chenoweth, 2009). Effective educators are committed to working within their own zone of professional development in these communities. Within the zone, they recognize the problems they can solve independently, and seek help from campus leadership, grade-level colleagues, and experts in the field to solve those that appear just out of reach.

The concept of a professional learning community, or a zone of *professional* development, gains power as educators participate in online learning such in concert with online and onsite data consulting and job-embedded support. Consider expanding the zone of professional development by creating a professional learning community. This digital community becomes a place to share information, challenge ourselves to move to the next level of effectiveness while interacting with more capable peers—eventually becoming the more capable peer to others.

The blended model of onsite services, online data consulting, and working in a digital community builds a zone of *professional* development that empowers teachers with knowledge to develop deeper insight as well as the actions to implement that insight.

In a nutshell, effective educators merge their development assessment maturity with their knowledge of each student, knowledge of the subject matter, and knowledge of how learning occurs to engage students in systematic, strategic, and organized lessons (Danielson, 2007; Darling-Hammond & Ducommun, 2010, Heritage, 2008; InTASC,

2013; Marzano, 2010; Strong, Ward & Grant, 2011). In the next section, we explore the third component of Assess, Teach, and Learn. This entire paper was built for this component. Every word you read, every image you browsed, every bullet list you highlighted leads you to the following section.

Learn: We make it Personal
In the Assess and Teach sections we explored ways that effective educators understand and act on data. In this section, we explore ways that skillfully implemented Renaissance solutions empower students as owners of their own data and engineers of their own learning. In essence, this section is about *learner effectiveness*.

> All learning has an emotional base
> *- Plato*

As we learned in the previous discussions related to perseverance and grit, a student's passion for long-term goals and the determination to practice are better predictors of success than IQ or talent. The research on practice is well established. Practicing a skill myelinates, or insulates, the connections in the brain required to perform that skill (Coyle, 2009; Lemov, et. al., 2012). The greater the myelin, the stronger the connection and the faster it fires signals to other parts of the brain. Practice builds fluency as firing these signals becomes more and more routine. Fluency builds automaticity so that the brain fires off the most rudimentary elements of a skill—addition for example—so quickly that students perform them "without thinking." Make that without observable, conscious thinking. The power in fluency and automaticity is found is a much higher mental process, for example when a musician has such command of intervals—the distances between notes—he reads music at sight and eventually composes music for others to read. As Lemov (2012) states, "creativity, it turns out, is often practice in disguise."

Effective learners practice the right things, at the right time, and in the right order. This requires:
- Personalized goals for practice
- Continuous feedback on their work

It's all about empowerment through insight. In the Assess, Teach, and Learn model, teachers are empowered by the insight gained as they access data, draw upon their practitioner expertise, and act upon their knowledge of how learning happens. They use this insight to empower students—who are empowered by the insight they gain from feedback, social interaction with peers, and direction in the next steps in learning.

STAR assessment data inform suggested independent and instructional reading ranges for Accelerated Reader 360™. Likewise, the data inform grouping of students for optimally challenging math practice for concepts within the grade level with Accelerated Math 2.0™. Working in this way, educators can truly personalize goals for their students. With Accelerated Reader, students strive to meet goals in three distinct areas: quantity of reading, difficulty of the reading, and quality of reading.
- Quantity of reading refers to amount of text—an indicator of engaged time in reading. Are my students reading enough each day?
- Difficulty refers to the range of reading—often as represented by a ZPD measure. Are students practicing at a level that makes sense but allows for personal interest and challenge?
- Quality of reading refers to comprehension—the most critical factor. Are students practicing at the right level and practicing with dedication to improving reading?

Instant, personalized feedback regarding reading practice with Accelerated Reader 360 acknowledges progress toward goals and leads to significant gains in comprehension and positively impacts student achievement (Borman, G. & Dowling, N. 2004; Holmes, C. & Algozzine, B. 2006; Husman, J., Brem, S., & Duggan, M., 2005; Johnson, R. & Howard, C, 2003; Nunnery, J. & Ross, S., 2007; Nunnery, J., Ross, S., & McDonald, A., 2006; Samuels, S. & Wu, 2003). When that feedback is coupled with resources to guide students to discover additional books, such as those offered through Book Discovery in Accelerated Reader, that match quantity, difficulty, quality, and interest levels, students gain insight.

Empowered learners understand that reading matters. It matters a lot.

The same is true of personalized practice and immediate feedback for Accelerated Math 2.0, but with an expanded emphasis on sociocultural nature of learning. An effectively managed Accelerated Math 2.0 classroom is an inherently active and social place. Students are empowered through a continuous feedback loop, access to peer assistance and resources to support practice, and data that pinpoint where students are on the pathway to math achievement at their grade level. The convergence of sociocultural learning, ongoing feedback, and intensive engagement in math practice has been shown to lead to gains in student achievement (Brem, S., 2003; Springer, R.et. al, 2007; Ysseldyke, J. et. al., 2003; Ysseldyke, J., & Tardrew, S., 2007).

Practicing in an inherently active and social environment with access to peer help and learning resources, and feedback that shows progress along a mathematics learning pathway fosters insight among students.

Empowered learners understand that math matters. It matters a lot.

In the Assess, Teach, Learn model, the insight gained from assessment empowers educators to trust their best instructional instincts. The knowledge educators develop about how students learn continually refines those same instincts, and the skillful application of insight and practitioner expertise motivates students, empowers them as owners of their own learning, and accelerates learning.

Summary

The purpose of this paper was to share current understandings related to educator effectiveness and implement those understandings in the Renaissance Learning accelerated learning framework: *Assess, Teach, Learn*. Along the way, we discovered that the power of an effective educator is realized through student empowerment which reaches far beyond the classroom, the campus, the district, and into the community. This paper highlighted four identifiable and teachable dimensions of teaching common to effective educators. First among the four dimensions is classroom management—a dimension that reclaims instructional time. Next, we reviewed the organization dimension which is all about understanding how learning happens so that you have a natural way of explaining complicated concepts in a logical manner.

Positive relationships with students became the third dimension. As the research unfolded, we learned that this dimension is all about engagement as students who feel part of the classroom and the learning tend to perform higher on reading and math measure of achievement. We also learned that this third dimension included a sense of future belonging—a sense of success beyond school. The fourth dimension—students developing a greater sense of ownership for their learning—introduced the concepts of learner effectiveness. We understand that the four dimensions support effective educators in their efforts to empower students, but student share an equal responsibility to be empowered. We help them understand and accept that responsibility by engaging them in optimally challenging tasks, sociocultural learning opportunities, focusing on growth, and acknowledging perseverance or grit.

In the final sections of this paper, we presented the Assess Teach Learn model. With this model, the insight gained from assessment empowers educators to trust their best instructional instincts. The knowledge educators develop about how students learn continually refines those same instincts, and the skillful application of insight and practitioner expertise motivates students, empowers them as owners of their own learning, and accelerates learning.

We certainly have not addressed all available research, but we included those that are best known and most widely referenced. We did not acknowledge all models of instruction, standards or frameworks for teacher effectiveness; however, we did call on those most widely implemented. We did not outline explicit connections to every Renaissance Learning product or service; however, we did highlight those used to support reading and math, the two disciplines most often reviewed for evidence of student achievement and effectiveness.

Essentially, we learned that teachers matter. They matter a lot.

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