

Transforming Pedagogy

with 10 A Day[®] and Turning Technologies' Student Response Systems

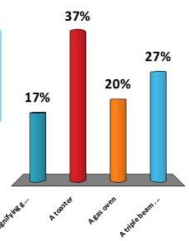
Education is a process of teaching, learning, and outcomes related to a particular subject matter. The utilization of technology within this process can significantly impact both the instructor's methods and the learner's outcomes through increasing efficiency and diversifying instructional options. Few technologies have the ability to transform education as both a pedagogical and accountability tool. Turning Technologies[®] student response systems [SRS] have consistently proven to be a technology that enhances effective teaching methods and provide an efficient process for tracking outcomes which can benefit all stakeholders in the K-12 learning environment.

What is a Student Response System?

Student response technology is straight forward and simple, enabling an instructor to digitalize student data both in the teaching moment and aggregated over time. The core functionality allows teachers to pose a question to the students, students press the button on their wireless ResponseCard[®] keypad that matches their choice, and then the results of the entire group are displayed on a graph. Each ResponseCard has a unique identifier that is registered to the student. This allows instructors to correlate and store response data instantaneously as well as to create over thirty reports ranging from attendance, item analysis, whole group evaluation and individualized student performance.

Which of the following could *best* be used to demonstrate energy being transformed from electricity to heat?

- A. A magnifying glass
- B. A toaster
- C. A gas oven
- D. A triple beam balance



Why the 10 A Day Approach?

10 A Day is a daily review/preview strategy designed to address multiple facets of the learning process. First, it is an instructional practice where “learning is the constant and time is the variable.” (Larry Lezotte, 2003) With daily review, students have multiple opportunities over the entire year to demonstrate proficiency. “65% of the achievement gap is a gap of opportunity.” (Larry Lezotte, 2009) The concept of “spiraling back” provides the additional time that some students require while enabling other students to continue practicing toward mastery. Newly acquired skills are kept fresh through year-long review.

Second, 10 A Day is a preview strategy that seeks to build students' background knowledge or schema in order to learn new skills more quickly. When a new concept is then taught formally, students are able to make connections with prior learning – a key to storing knowledge in long-term memory.



What Makes 10 A Day Unique?

Stiggins' Assessment FOR Learning pedagogy is one of the cornerstones of the 10 A Day approach. While Assessments OF learning check to see if the learners have met required objectives, Assessments FOR learning occur during the learning process. Classroom assessment FOR student learning turns the assessment process and its results into an instructional intervention designed to increase (not merely monitor) student learning, confidence and motivation. (Stiggins, 2006) Response technology is an ideal tool for implementing the type of immediate feedback necessary to maximize this methodology's learning potential.

Turning Technologies' SRS combined with 10 A Day creates interactive classroom environments where ALL students respond and receive the immediate, explicit and descriptive feedback they need to progress in their learning. In this way, the teacher is accountable for ALL students' learning and provides "just-in-time"



remediation for the students who are struggling. This process shifts the teacher's role to that of a coach. With effective teaching that includes detailed instruction in rules, steps and strategies, ALL students can learn. Mastery requires multiple practice sessions, so fast-paced 10 A Day lessons check for understanding every few minutes. This strategy increases student engagement in the learning process as well as provides opportunity for students to achieve the learning objectives.

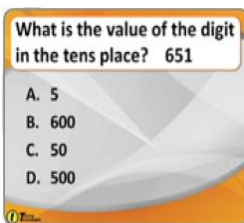
However, 10 A Day is not just about students computing correct answers. An effective learning strategy called Prove/Disprove is embedded within the 10 A Day formative assessment process that takes student thinking and problem-solving to the highest levels of Bloom's Taxonomy. After working the solution to a problem on a student dry erase board, the student proves or disproves each answer choice. Using analysis, synthesis and evaluation, the student is able to discover the mistakes that would lead to selecting each incorrect answer. The instructor then engages the students in a model of peer instruction to prove/disprove with each other before making their answer selection on their ResponseCard keypad.

10 A Day Student Steps

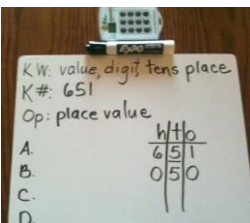
Whiteboard setup.



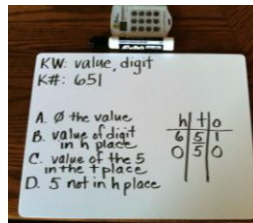
TurningPoint question.



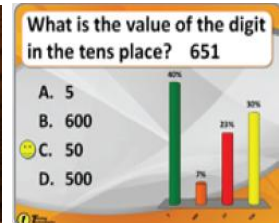
Work through solution.



Prove/disprove.



Aggregate responses.



The 10 A Day process is highly effective in checking for understanding throughout a lesson and in the guided practice phase of instruction. Learning becomes a far more interactive process and teaching starts to look more like coaching. As a result, teachers develop the agility to make critical shifts in their instruction, in response to the student data.

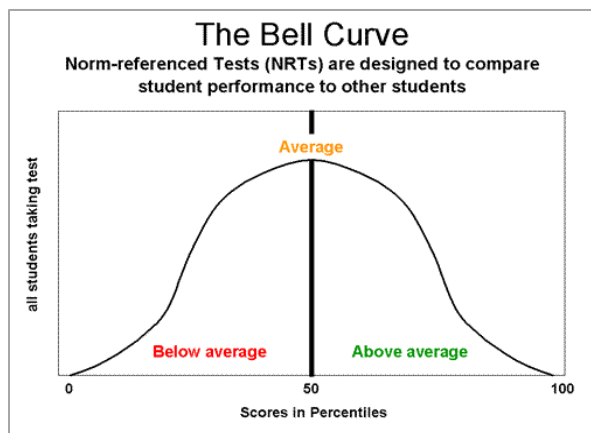
The reaction students have toward assessment data is critical to their ultimate success as learners. Students learn to embrace mistakes as part of the learning process and at the same time lose their fear of being “wrong.” (Stiggins, 2005) Students become motivated to monitor and track their own progress toward proficiency, making their daily work engaging and rewarding. As students work with whiteboards and student response devices, worksheets become obsolete and are exposed for the ineffective tool that they are. (Marcia Tate, 2010) 10 A Day has proven to elicit an optimistic response from learners which encourages them to continue striving to achieve.

How Does Student Response Combined with 10 A Day Impact Pedagogy?

An important pedagogical shift occurs when student response systems are used in the classroom to assess FOR learning. When assessment FOR learning is a common practice, achievement gains of one-half to two standard deviations have been realized on state tests. (Stiggins, 2005)

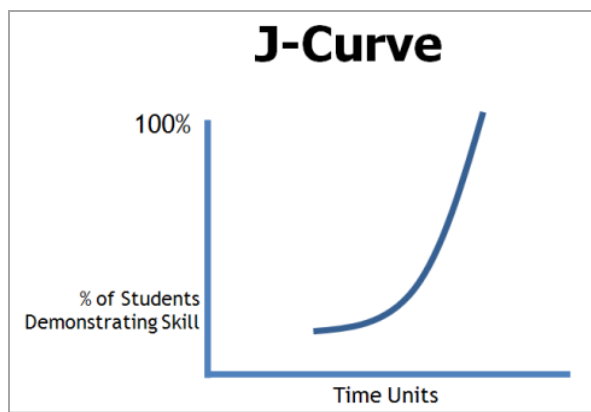
“Assessment FOR Learning occurs to regularly inform teachers and students about the progress of learning WHILE that learning is taking place. Its purpose is to improve learning while there is still time to act – before the graded event.” - Stiggins

Assessment OF Learning dominates Bell-Curve Pedagogy where the focus is on delivering evaluative feedback and comparing students with each other. While Bell-Curve Pedagogy was effective for producing competent factory workers in the Industrial Age, the demands of No Child Left Behind require a new form of pedagogy – a pedagogy where ALL not just SOME students are able to achieve proficiency. This pedagogy is known as J-Curve Pedagogy.



J-Curve pedagogy dominates Assessment FOR Learning and is the only pedagogy that will equip ALL students with the high-level skills required for work in the 21st century. Assessment FOR Learning is based on the following formula:

Accuracy
+ Descriptive Feedback
+ Student Involvement
Achievement Gains



Not only does this process gather data to monitor progress and modify instruction, but it also increases students’ motivation to learn. Research demonstrates that Assessment FOR Learning results in the following:

- Evidence of **strong achievement gains** as measured on state tests
- **4 to 5 times greater effect** than reduced class size (Ehrenberg, Brewer, Gamoran, & Williams, 2001)
- An intervention with one of the **highest levels of impact**
- The **largest gains** accrue to the lowest achievers

Research and Learning Pedagogies Supported by Student Response

Student response technology has been used in K-12 education for many years and has been researched heavily. The body of research consistently validates the ability of this technology to positively influence teaching, student learning, and outcomes. Student response systems provide the following benefits:

- **Active Learning:** Involvement of learners directly and actively in the learning process. Instead of simply receiving information verbally and visually, students receive, participate, and do.
- **Agile Teaching:** Agility in teaching involves the ability to adapt quickly, to change course, structure or pace to suit the needs and abilities of the learners. Response systems have the ability to provide continual information to which the teacher can respond and adjust.
- **Identification of At Risk Students:** Strong correlation exists between the registration of a student clicker and student's overall performance in the course they are registering their clicker.
- **Feedback and Understanding:** Active involvement in the discovery process, in addition to immediate feedback, promotes retention and the correction of initially inaccurate response strategies. SRS supports the rapid questioning model and the positive reinforcement of correct responses. Response technology also allows instructors to closely monitor learner's responses and expectation of learning mastery.
- **Engagement:** Depict students' psychological investment in learning, also increasingly used to describe meaningful student involvement throughout the learning environment.
- **Peer Instruction:** The learners are asked a question and formulate their own answers; they then discuss their answers in groups attempting to reach consensus on the correct answer. This process forces students to think through the arguments they develop and enables them (as well as the instructor) to assess their understanding of the concepts even before they leave the classroom.
- **Assessment FOR Learning:** Assessments OF learning check to see if the learners have met required objectives versus Assessments FOR learning which occur during the learning process. Classroom assessment FOR student learning turns the classroom assessment process and its results into an instructional intervention designed to increase, not merely monitor, student learning, confidence and motivation. (Stiggins, 2006)
- **Spacing Effect:** Learners easily remember or learn items when they are studied a few times over a long period of time.
- **Accountability:** The digital collection of data enabled by SRS provides an effective mechanism for tracking performance for accreditation and program effectiveness.
- **Motivation:** There are four steps to promote and sustain motivation in the learning process: Attention, Relevance, Confidence, Satisfaction (ARCS). A learner's attention has to be aroused and sustained, there must be relevance of what is being learned, confidence built and a correlation between effort and results.
- **Formative Assessment:** Feedback is more effective for students when it leads them to the correct answer, as opposed to simply telling a student whether they are correct or incorrect.

Student response systems support immediate feedback and classroom assessment, which can lead to the following positive results:

- Immediate corrective feedback to students
- Differentiated instruction
- Specific group tracking
- Individualized student reporting
- Data-driven instructional decisions
- Decreased student testing anxiety
- Increased student engagement
- Motivation of students to participate in the learning process

(Sartori, 2008)

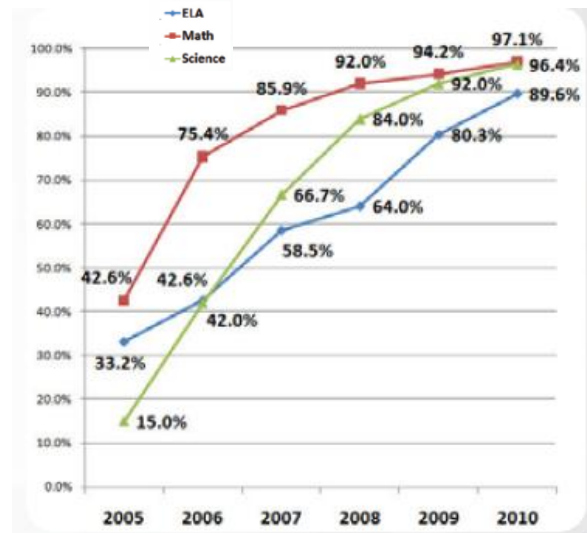
Who Uses 10 A Day?

Sixth Street Prep School

Linda Mikels, Principal (2001 – 2010)



- Sixth Street Prep School is a conversion K-6 charter school in southern California. The school demographics are 90% poverty, 90% ethnic minorities and 50% English learners.
- By implementing 10 A Day with TurningPoint student response systems to improve student achievement, the school became a 90/90/90 school and a National Blue Ribbon recipient in just nine years.
- Teachers worked collaboratively to build 10 A Day questions with carefully chosen distractors.
- Grade level teams met weekly to review and analyze student achievement results and plan the 10 A Day questions for the following week.
- Common procedures K-6 were developed by the teaching staff, e.g. whiteboard setup, prove/disprove steps, and peer instruction process.
- Student proficiency has grown in **language arts from 19% to 89.6%**, in **math from 30% to 97.1%**, and in **science from 15% to 96.4%**.
- The schools' Academic Performance Index (API) has increased from **599 to 960 out of 1000**, and the **achievement gap has been closed**.



Liberty Elementary

Ailene Cammon, Principal

- Liberty Elementary, a K-6 school in Victorville, CA, was mentored by Sixth Street in the 10 A Day strategy. The school was on the “watch” list for program improvement and turned to Sixth Street for answers.
- Sixth Street teachers and principal taught the strategy and coached the Liberty staff throughout the year.
- Liberty used 10 A Day with TurningPoint response systems at all grade levels and with all student sub-groups.
- TurningPoint increased the level of student engagement, effectively decreased the incidence of student discipline, and nearly doubled proficiency among ALL subgroups in just one year.
- Their success story has attracted visitors from all over the state to learn this new process.
- Both Sixth Street Prep and Liberty were awarded the American Society for Quality (ASQ) Team Excellence Award for their Close the Achievement Gap project.

How Can Our School Achieve the Same Success?

While the daily review/preview technique and the integration of Turning Technologies are a key component, 10 A Day is actually a comprehensive program based on proven techniques that encourages educational reform throughout multiple levels and channels of the learning environment. All components work in tandem to build the necessary collaborative infrastructure to facilitate the shift in educational focus from teaching to learning.



Key 10 A Day Program Components:

- **Leadership Principles & Principal Walk-Thru's:** Buy in and commitment at the leadership level to the program's philosophy, process and pedagogical approach is an absolute necessity. School leaders must set the tone and guide the program's course through modeling and walk-thru's.
- **Daily Review/Preview:** Instructional strategy to build students' background knowledge or schema in order to learn new skills more quickly.
- **Turning Technologies' Student Response Systems:** Student response technology allows teachers to build interactive assessment questions that every student responds to using a wireless handheld keypad. The Turning Technologies' systems allow for immediate data capture of student learning as well as supports progress monitoring and comprehensive reporting to differentiate instruction.
- **Professional Development:** A key component necessary to help teachers build the skills and strategies needed to shift from teaching to learning. Interactive assessment items with carefully chosen distractors are capable of measuring a wide range of content and providing the teacher with explicit information about students' understanding of the content.
- **Question Development:** Every interactive assessment question should be development intentionally to properly assess student learning and help students gain the knowledge needed to successfully meet standards.
- **Common Procedures:** The establishment of common procedures across all classrooms, students, and teachers becomes schoolwide practices and allows everyone to be familiar with expectations and the learning process. Common procedures include both classroom materials (student whiteboards and response systems), instructional techniques (prove and disprove strategy, coaching, peer review) and common classroom procedures

More Information

For more information on Sixth Street Prep's results and the 10 A Day Program, please contact Turning Technologies to discuss your school's unique learning and achievement objectives.

Turning Technologies: www.TurningTechnologies.com

Turning Talk User Community: www.Turning-Talk.com

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