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Differentiation and High-Stakes Testing: An Oxymoron?

Is meeting diverse learning needs through differentiation incompatible with the high-stakes testing that is now a way of life for many teachers and students across the nation? Recognizing that testing is here to stay for the foreseeable future, this article considers ways to bring differentiation and high-stakes testing together for the benefit of all learners. The article begins with a review of the importance of attending to individual learning needs, and then discusses conflicts that arise when attention to learner needs collides with attention to high stakes tests. The article defines key skills demonstrated by teachers who effectively differentiate curriculum and instruction, and shares data illustrating one teacher's success in enhancing student performance on high stakes tests. The author suggests actions that educators may take to facilitate differentiation when accountability mandates threaten to undermine the personal nature of education.

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ONE-SIZE-FITS-ALL ACCOUNTABILITY across our nation dramatizes the importance of ensuring that all students have access to appropriate curriculum, engaging instruction, and supportive resources. Because any classroom with more than one student presents a range of learning needs, teachers struggle to provide all students access; what works for some students will not work for others (Berliner & Biddle, 1995). If we expect students to navigate successfully through high stakes tests, then it seems only fair that their teachers have at least foundational skills in differentiation. Differentiation is a conceptual approach to teaching and learning that involves careful analysis of learning goals, continual assessment of student needs, and instructional modifications in response to data about readiness levels, interests, learning profiles, and affects (Tomlinson, 1999, 2003). Teachers who differentiate use ongoing assessment data to inform instruction, increasing the likelihood that students engage with content, develop in-depth understandings, and build the capacity to transfer learning when the time for testing arrives (Tomlinson, Brimijoin, & Narvaez, in press).

Conflicts in Attending to Needs and Tests

According to the National Board of Professional Teaching Standards (1989), expert teachers should base their practice on knowledge of students' abilities, interests, prior experiences, and relationships with family and friends. Conflicts often arise, however, when teachers are missing essential pedagogy and support that facilitate differentiation. At the same time, high-stakes testing's dependence on state-mandated assessments as the dominant or sole criteria for graduation or promotion can threaten teachers' fragile capabilities to meet diverse student needs.

Although standards for best practice emphasize that all learners should develop in-depth understandings, high-stakes may push teachers testing to standardize instruction and simply "cover" content (Schlechty, 1997; Zemelman, Daniels, & Hyde, 1998). When considering teachers' perceptions of the impact of high-stakes testing, a study showed that a majority of teachers reported state testing has led them to compromise their conceptions of what constitutes best practice (Abrams, Pedulla, & Madaus, 2003).

A study of the effects of state testing on elementary schools with a high incidence of student poverty finds that students in those schools work with a narrow curriculum driven by test blueprints, and are offered few opportunities for enrichment (Moon, Callahan, & Tomlinson, 2003). Teachers surveyed in this study admit they tend to match pedagogy with state tests rather than with what research defines as best practice. In another study of the effects of standards testing on gifted students, data indicated that teachers generally perceive state standards as the entire curriculum, see homogeneous instruction as the most efficient way to teach tested content, view authentic learning and problem solving as extras, and target uniform instruction at students who struggle the most (Moon, Brighton, & Callahan, 2003). Gifted learners are primarily expected to repeat what they already know, and wait for a chance to move ahead.

In a study of differentiation and standards testing in middle schools, data showed that teachers

view a test-focused, facts-based curriculum as lacking meaning, rigor, and richness (Brighton, Hertberg, Moon, Tomlinson, & Callahan, in press). This view of curriculum and the expectation to "teach to the test" appear to thwart teachers' efforts to differentiate and contradict what research defines as high quality practice.

Skills of Teachers Who Differentiate

Building both competence and confidence in differentiation requires knowledge of content, a broad repertoire of assessment tools, flexibility in matching tasks to students, creativity in finding resources, continual reflection, and collaborative support (Brimijoin, 2002). Although there are no clearly established rules or steps for how differentiation "looks" in a classroom, teachers who are skilled in providing all students with access to curriculum and instruction focus on certain core principles that constitute best practice and support student success.

Clarity of Learning Goals

Generating explicit definitions of the knowledge, understandings, and skills that students will gain from a learning experience is a starting point for teachers who differentiate well. Resisting the urge to select activities first in favor of beginning with a clear idea of intended results is a process Wiggins and McTighe (1998) call backward design (McTighe & Brown, this issue). Using this process to define learning goals while considering data about students' prior knowledge, performance, interests, learning preferences, and misconceptions can increase the chance that all learners will develop in-depth understandings. By defining the organizing principles of the content to be taught, teachers can move from isolated facts to connections between and among ideas. Exploration of implicit connections and underlying principles of a topic can facilitate transfer of learning and ultimately support student performance on standardized tests (Bransford, Brown, & Cocking, 2000).

Ongoing Assessment

Teachers who skillfully differentiate understand that assessment is central, not peripheral, to designing curriculum and instruction, and assessment is of no value unless it is informative to teachers and students (Wiggins & McTighe, 1998). Effective differentiation is anchored by ongoing assessment, the continual measurement of student response to curriculum, instruction, and assessment itself. When beginning their backward design for a unit of study, effective differentiators use every available piece of data on what and how students understand content. When designing learning experiences, these data help teachers assure that every student has equal and adequate access to content, increasing the chance that high-stakes testing might actually support equity (Darling-Hammond, 2003).

Informing Instruction

Teachers with competence in differentiation use ongoing assessment to make proactive adjustments in content, process, and products. Research from Sternberg and Grigorenko (1997) showed that responsive teachers use data about diverse thinking styles to adjust assignments and design assessments that maximize student performance. By determining a student's facility with concepts and skills or zone of proximal development (Vygotsky, 1978), responsive teachers are able to design instruction appropriate for individual readiness levels. According to Faulk (1996), a focus on concepts and principles linked to individual interests can provide multiple entry points for students. By capitalizing on student interests, responsive teachers may offset what studies (Amrein & Berliner, 2003; Darling-Hammond, 2003) have indicated are potentially negative effects of high-stakes testing—a decrease in student motivation and increasing retention and dropout rates.

Respectful Tasks

Developmentally oriented teachers have respect for the emerging capabilities of individual students and perceive diversities as contributions to the richness of the student population (Zemel-

man, Daniels, & Hyde, 1998). Making certain that learning experiences are interesting, valuable, and important for all students is an ongoing challenge for teachers who strive to differentiate well. Ensuring the respectfulness of each task requires careful analysis of the link between assessment data and learning goals, reflection about students' developmental levels, and constant monitoring of student response to a variety of classroom contexts (Tomlinson, 1999). If a delicate balance of challenge and skills is achieved, engagement is more likely, and optimal learning experiences can lead to an increase in achievement (Csikszentmihalyi, 1997).

Appropriate Strategies

Teachers with expertise in differentiation use a variety of research-based instructional strategies to engage students with content. In his study of effective teachers, Stronge (2002) highlighted research showing that instructional strategies influence student learning almost as much as aptitude. Stronge also pointed to data indicating achievement is higher when students focus on concepts and relevant tasks. Research-based instructional strategies such as nonlinguistic representations, advance organizers, and interactive learning can lead to higher effect sizes on achievement measures (Marzano, Pickering, & Pollack, 2001). Teachers skilled in differentiation paint instruction from a broad palette, drawing from a bank of strategies that have proven to be successful in meeting a range of abilities, interests, and learning profiles.

Flexible Grouping

Successful differentiation is characterized by flexibility in teaching and learning arrangements. When differentiation is working well, specific task assignments, the placement of students in learning groups, the use of materials, the pacing of instruction, and the social context of learning are all modified in a variety of ways to meet student needs (Tomlinson, 1999). Teachers who differentiate well ensure that students interact with content and each other in a multitude of ways every week of the school year. Flexible grouping can exert a pos-

itive influence on the learning environment, promote engagement, and assist students in constructing new knowledge (Brandt, 1998).

Classroom Community

Teachers skilled in differentiation create a community of learners who honor and celebrate differences, competence, belonging, and independence. This is a community founded on trust, shared management, self-governance, a balance of teacher-directed and student-centered learning, and high expectations. To explain how competence, autonomy, and relatedness work in a differentiated classroom community, Tomlinson (2003) used a metaphor of three interdependent cogs. The cogs represent the elements of student needs, teacher response, and curriculum and instruction. Experts in differentiation go beyond simply balancing these elements by making certain they mesh together seamlessly. Students who self-regulate their behavior, know their individual needs are respected, and develop a sense of relatedness are more engaged, and increased engagement is associated with higher levels of academic accomplishment (Connell & Wellborn, 1991).

Case Study Research

A case study of a diverse classroom in a high-stakes testing state illustrates how students in a skillfully differentiated classroom can make dramatic gains in learning and meet high expectations on standards assessments (Brimijoin, 2002). As a 5th grade teacher, Katherine Martez knows her school district expects every one of her students to pass the state tests at the end of the year. Individual performance is especially important because her school is classified as needing improvement, and faces potential loss of accreditation if scores do not rise. The pressure on Katherine and her class is dramatic because her students come to her with average reading scores at the 34th percentile and math scores at the 32nd percentile on national, norm-referenced tests from 3rd grade. On state-mandated, criterion-referenced tests, only 47% of her class passed the reading assessment,

53% passed math, 34% passed social studies, and 42% passed science. Katherine faces these odds with a firm resolve to draw on all her strengths, build on those of her students, and assess, assess, assess.

Katherine devotes considerable time to unpacking the 5th grade standards to tease out concepts and principles that spiral and connect. For example, she sees that every 5th grade standard across all four disciplines fits under the overarching concepts of patterns, change, and conflict. She uses these concepts to design interdisciplinary lessons, whenever possible, and practices backward design, articulating a “know, understand, and do” roadmap for each major learning experience. In a math lesson on greatest common factors, for example, Katherine draws attention to the point at which factors begin to repeat themselves, making an explicit connection to patterns, one of the “big ideas” the class has focused on across all academic content this year.

Viewing the assessment process as dynamic, Katherine sees herself as a gatherer of data not only to shape instruction but also to determine its effectiveness. She sees her role as data collector in three dimensions: to determine students’ existing understandings and achievements; to track their responses to moderate challenges; and to measure their outcomes against expected performance goals (Brimijoin, 2002). She uses multiple methods for preassessment, such as webbing, KWL charts (what students already Know, what they Want to know, and what they Learn about a topic), oral questioning, and group discussions to determine readiness levels. She often creates her own assessment techniques, such as “glass, bugs, or mud,” based on a car windshield metaphor. When it is time for students to begin applying basic concepts and principles on a particular topic, Katherine asks: “How many are clear as glass? How many have bugs on the windshield? How many have windshields covered with mud?” Students know from modeling and demonstration that glass means understanding and applying concepts and skills accurately and independently; bugs means understanding the basic concepts but needing to build confidence through application with guidance; mud means needing additional practice to

develop basic concepts and skills. Having already designed learning experiences differentiated by readiness, Katherine can make on the spot adjustments based on students' spontaneous glass, bugs, and mud assessments.

Katherine helps students set goals for peak performance, and then differentiates by designing optimal routes for success. Although all students are working to master content and meet the same state benchmarks, she designs multiple paths for applying and demonstrating knowledge, understanding, and skills based on the varying entry points of her students. Katherine uses ongoing assessment to hone the match of task to student, making sure every assignment is appropriately challenging and respectful. She uses a myriad of strategies, including compacting, tiered lessons; ThinkDOTS©; graphic organizers; Role, Audience, Format, and Topic (RAFTs); and anchor activities and task cards to engage and focus this diverse group.

Compacting

When compacting instruction, Katherine uses results from informal and formal assessment to identify areas where students demonstrate advanced understanding and skills (Renzulli & Reis, 1994). Students who already show mastery of content may “buy time” to explore the content in more depth, more breadth, at an accelerated pace, or on an interdisciplinary level. This provides opportunities for students who begin a unit with advanced knowledge to make progress, rather than simply waiting for others to catch up. For each student whose work is compacted, Katherine creates a contract that documents alterations in learning tasks, as well as evidence of mastery at each stage of the unit.

Tiered Lessons

Tiered lessons are one of the mainstays of Katherine's instructional repertoire. She develops assignments at different tiers of difficulty so individual students are moderately challenged. After mapping what students will know, understand, and be able to do, Katherine begins with the advanced

tier. She designs a task for advanced learners that targets key learning goals, and then creates as many other tiers as necessary to meet the range of learning needs in her class. For novel groups in language arts she may have two tiers, in math she may have three tiers on a fraction lesson but four on a division activity, and in word study she frequently has five tiers to match developmental spelling levels across her class.

Katherine finds that one of the most fundamental, low-prep applications of tiering is simply varying journal prompts. Rather than writing one prompt to elicit student response after a science experiment, discussion of a novel chapter, or a history lesson, she creates two versions by adjusting the level of sophistication and abstraction. Sometimes she assigns students a particular prompt, but more often she asks them to choose, providing scaffolding for those who “choose up” and guiding those who “choose down” toward the more challenging selection.

ThinkDOTS©

Katherine is well aware of the role interest plays in “hooking” students in a learning experience, so she often modifies journal prompts based on student interest rather than readiness. She also uses ThinkDOTS© (Brimijoin, 2002) to offer choices for students as they explore content and apply skills. After defining the “know, understand, and do” of the lesson, Katherine creates six tasks that target students' knowledge of a particular topic based on state standards. She types each task in a 3 × 2 table and marks each task on the back of the page with a dot corresponding to the dots on a die. The tasks are laminated and cut apart, holes are punched through the cards, and they are placed on a ring. To play ThinkDOTS©, the student rolls a die, flips to the card with corresponding dots, and completes the activity. Katherine sometimes tiers ThinkDOTS© cards, color-coding the dots to correspond to a range of readiness levels. She considers thinking and learning styles by weaving options for visual, written, and oral expression, critical analysis, movement, and collaborative work into ThinkDOTS© tasks.

Graphic Organizers

Recognizing that many students need to visualize information in a logical and pictorial format, Katherine often uses graphic organizers during instruction to provide wider access to content. The Venn diagram is a staple for her—she uses it in social studies to compare the causes and effects of the Civil War, in math to determine which factors are shared by two or more numbers, and in novel study to examine the similarities and differences in characters. Katherine often thinks aloud as she models the use of graphic organizers, helping students internalize such strategies so they can draw on them when studying or reading independently.

RAFT

When Katherine is searching for a strategy that will appeal to a broad range of thinking and learning styles, she uses the RAFT method developed by Nancy Vandervanter (1996, as cited in Santa, Havens, & Maycumber), an English teacher who participated in the Montana Writing Project. To design a RAFT task, Katherine articulates the learning goals and then creates a Role related to content (assume the role of a blood cell), an Audience (the heart), a Format (a travelogue), and a specific Topic (Where do I go after I leave you?). She may design five or more tasks for a RAFT on a science topic and leave a wild card option for students to design their own with her approval. Sometimes she assigns specific RAFT tasks to students, and other times she lets them choose. She does find the strategy works better when she develops a generic rubric for RAFT products to ensure that student work is accurate, organized, and thorough.

Anchor Activities and Task Cards

Katherine could not implement any of the strategies described without the help of anchor activities and task cards. Meaningful activities that students complete while waiting for instructions or when work is completed help to anchor instruction in valuable experiences that reinforce or enrich

content knowledge. Katherine might use multiplication problems, vocabulary practice, or a review of the photosynthesis process as anchor activities during a math, language arts, or science lesson while she meets with students to begin a multi-tiered lesson. Students know to return to the anchor activity if they finish their tiered task before others. Providing students with step-by-step instructions on task cards is another way Katherine builds self-governance and autonomy in her classroom as she differentiates for all learners.

Katherine knows that creating the appropriate learning community has to occur for differentiation to be effective. She continually confers status on students for contributions, applauds unique perspectives, and sets high expectations for everyone. She and her students agree on three all-inclusive classroom rules: respect everyone and everything; always do your personal best; and recognize there is no time to waste. She asks students to be accountable to themselves, the groups they work with, the class as a whole, and to her. By sharing control with her students, Katherine's management plan is more proactive than reactive, averting many problems that often undermine differentiation.

Katherine's confidence in her ability to differentiate and her growing competence in meeting individual needs were affirmed by state assessment results. At the end of 5th Grade, 74% of her students passed the reading assessment; 58% passed math; 58% passed social studies; and 74% passed the science assessment (Brimijoin, 2002). In some cases, individual students bettered their 3rd Grade scores by nearly 30%. After reflecting on these results, Katherine says:

I am convinced of this The facts stuck because they were scaffolded into existing information, taught at the students' readiness levels, hooked in with interests, and nailed down with instruction targeted to the students' strongest learning styles Differentiation works in a Standardized Testing World. It isn't just something we "could" and "should" all do if it "weren't for these darn tests." We can't afford not to do it and expect to meet state standards. (Brimijoin, 2002, p. 263)

Uncoupling the oxymoron of high-stakes testing and differentiation, Katherine believes she must teach responsively for each student to have the best possible chance of transferring learning to test taking.

Suggestions for Educators

Although it is not possible to generalize about data on achievement from this case study, it is possible to use the *what*, *how*, and *why* of Katherine's differentiation to inform practice. A close study of the principles of curriculum design she utilizes, the strategies she enacts, and the learning community she creates can help to resolve conflicts facing novice and veteran teachers and administrators as they attempt to facilitate and build expertise in differentiation.

To build expertise in responsive teaching, educators need to develop the knowledge, understanding, and skills of differentiation. Professional learning characterized by mentoring, coaching, and study groups provides a context that actually models differentiation (Brimijoin, Alouf, & Chandler, 2002). By differentiating professional learning, teachers can live differentiation as they are learning about it.

Funding for education initiatives should be earmarked to provide time, resources, collaborative learning, and recognition for teachers who polish their ability to differentiate. These teachers are a valuable resource and need opportunities to share what Schlechty (1997) called knowledge work by demonstrating best practice in differentiation to reduce the conflict between testing every student and teaching every student.

Conclusion

The importance of attending to individual learning needs in America's classrooms has reached a critical level as diversity multiplies across the student population. The context of high-stakes testing creates conflicts between what teachers believe is best practice and how they address accountability pressures in real time.

The diverse developmental levels, backgrounds, and learning preferences of today's students obviate the same-size nature of high-stakes testing. As counterintuitive as it may seem, it is possible for teachers skilled in differentiation to improve student achievement and, at least to some degree, make differentiation and high-stakes testing compatible.

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