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ABSTRACT

Since the minimum competency movement of the 1970s, the importance placed on standardized tests has increased significantly. The intent of this study was to investigate the effects of state testing programs on the instructional practices of elementary school teachers and the effects of such practices on their gifted students' attitudes toward school and motivation. In the first phase of the study, a survey completed by 8,044 teachers provided information about their attitudes and practices. In the second phase of the study, qualitative techniques and the use of focus groups of gifted students and teachers provided information about student attitudes and teacher practices. Results suggest that teachers' perceptions of standards, tests, and students shape their classroom actions. These actions indicate that teachers influenced by testing programs are not likely to engage in effective classroom practices, but instead engage in one-size-fits-all practices. Implications of the perceptions on professional development and talent development are discussed. (Contains 4 figures, 8 tables, and 18 references.) (Author/SLD)

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STATE STANDARIZED TESTING PROGRAMS: FRIEND OR FOE OF GIFTED EDUCATION?

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State Standardized Testing Programs:

Friend or Foe of Gifted Education?

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Abstract

Until the late 1970s, standardized testing had little effect on instruction. However, since the minimum competency movement of the 1970s, the importance placed on standardized tests has increased significantly. The central theme of this reform effort is the need to raise academic achievement of all learners (College Board, 1999). The intent of this study was to investigate the effects of state testing programs on the instructional practices of elementary, teachers and the effects of such practices on their gifted students' attitudes toward school and motivation. Results suggest that teachers' perceptions of standards, tests, and students shape their classroom actions. These actions indicate that teachers are not likely to engage in effective classroom practices but instead engage in one-size fits-all practices. Implications of the perceptions on professional development and talent development are discussed.

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State Standardized Testing Programs:

Friend or Foe of Gifted Education?

Until the late 1970s, standardized testing had little effect, if any, on instruction. Instead, Goslin (1967) found that teachers seldom used the results of standardized tests and he reported virtually no influence of test content on teaching methods or classroom content. However, over the past decade, the importance placed on standardized tests has increased significantly (College Board, 1999). Forty-nine states have appropriated funding to establish assessment instruments as a means of interpreting educational effectiveness (Council of Chief State School Officers (CCSSO), 2000).

Reports abound suggesting that the increased emphasis placed on these test scores results in an increased classroom emphasis on strategies such as basic skills instruction and drill and recitation (e.g., Brown, 1992; Herman & Golan, 1990; Shepard & Dougherty, 1991) to assure student success. Although there has been some study of the extent to which state-testing mandates impact the instructional practices of teachers who are under pressure to raise student scores, no studies have investigated teacher and student perceptions of the impact of these practices on various subgroups such as gifted students, students from economically disadvantaged environments, students with limited-English proficiencies, and students with learning disabilities. Further, the change in teachers' instructional emphasis toward classroom emphasis on basic skill level instruction may in turn contribute to the under-representation of minority groups in gifted programs. That is, minority students, or other traditionally underserved populations of students, may respond negatively to the instructional delivery of teachers geared toward

preparation of students for state tests, many of which are used for gifted program identification (Callahan, Tomlinson, Hunsaker, Bland, & Moon, 1995). Another concern is that all students, including students from underrepresented groups, may not have opportunities in the classroom to demonstrate the behaviors required to receive high ratings on teacher-administered instruments (such as rating scales checklists) frequently the basis for nomination for gifted programs because of the classroom emphasis on facts and skills. The direct consequence of these experiences may be a lower representation of these types of students in gifted and talented programs.

Finally, with the current emphasis on standardized tests at the state level, the instructional practices of the classroom teacher may not be aligned with best practices and consequently may be turning certain groups of students off from learning. According to Ferguson (1998), teachers' "behaviors interact with students' beliefs, behaviors, and work habits in ways" that help to perpetuate the achievement gap (p. 274). To examine this potential impact, we investigated the effect of state testing programs on the instructional practices of elementary teachers followed by an in-depth investigation of the effects of such practices on gifted students' attitudes toward school and motivations to learn.

Review of the Literature

While several studies (e.g., Herman & Golan, 1990; Shepard & Dougherty, 1991) have investigated the effects of standardized tests on the teaching and learning processes, there are no reported studies of the implications for teachers who teach gifted and talented students nor of the impact on the students themselves. Of those

studies that have investigated testing effects, several have direct implications for the education of gifted and talented students.

Herman and Golan (1990) sought to determine if accountability pressures drive schools to narrow their curriculum at the cost of broader student learning. In addition, the researchers were interested in determining whether testing differentially affected instruction in districts serving predominantly economically disadvantaged students and those districts serving predominantly advantaged students. Using questionnaire methodology, the authors concluded that testing substantially influenced teachers' instructional planning. Specifically, teachers reported devising instructional plans that included all or most of the test content and test objectives. In addition, teachers reported adjustment of the curriculum sequence based on what is included on the tests. The authors also reported that teachers in low SES schools were more influenced by testing than teachers in high SES schools.

Shepard and Dougherty (1991) built their study based on the findings of Herman et al. (1990). Again, using a teacher questionnaire focusing on perceptions of the influences testing has on teaching, they surveyed 3rd through 6th grade teachers in two high-stakes districts. The authors reported that 75% of the teachers gave greater emphasis to basic skills instruction, vocabulary lists, word recognition skills, and paper-and-pencil computation than they would if there were no mandated tests. Further, content that was not a focus of the tests received the lowest priority. Fifty percent of the teachers reported giving less emphasis to subjects that were not tested (e.g., science or social studies).

In 1992, Brown examined the meanings that teachers assigned to state-mandated tests and the actions that they initiated following their interpretation of the test results. Using a qualitative research design with 30 5th and 6th grade teachers and 12 principals, the author reported that teachers altered the scope and sequence of curriculum and eliminated concepts that were not covered on the state tests, a practice known as 'narrowing the curriculum.' Teachers also reported reluctance to use innovative instructional strategies and mentioned the use of more traditional instructional methods citing a belief that such strategies would better prepare students for state tests.

Several conclusions from these studies seem apparent. Because of the nature of high-stakes state testing programs, schools may emphasize skill development to the detriment of curriculum or programs that emphasize greater depth and integration of concepts, integration across disciplines, and/or development of higher order thinking skills. Adaptation of scope and sequence of concepts to meet student needs may be diminishing in favor of test-directed one-size-fits-all instruction. Teachers' lack of freedom to experiment also affects their willingness or ability to explore innovative instructional strategies for use with developing this nation's talent pool.

Student Impacts. Very little research has been reported in the literature documenting students' perceptions of current educational reform efforts. One study concerning students' perceptions of educational reform dealt with the assessment of student perceptions of the Kentucky Education Reform Act (KERA). Through individual and focus-group interviews, students indicated that they were knowledgeable and articulate about the aspects of the reform movement that had direct implications for

them. While most of the students felt that KERA might help them be more competitive with students from other states for college admission and employment, students reported increased stress on teachers and on themselves (Appalachia Educational Lab (AEL), 1994). However, the report did not present any findings concerning students' perceptions of their classrooms nor on the ways that instruction had affected students' motivation or ways that instruction might be delivered to increase student engagement in complex learning.

Several recent studies have looked into gifted students' perceptions of their schools and classrooms since the initiation of widespread educational reforms. Clementson and Wenger (1998) reported students' perspectives of their high school. Although the students reported overall satisfaction with what occurred in their schools, many students called for more challenging curriculum and stimulating instruction. Quotes such as "*Too many students coast through high school without being challenged. Mediocrity is becoming the norm.*" or *"The difficulty of most of the classes is far below the level of the majority of the students. Raising the difficulty of these classes would challenge a student's intellect."* or *"I would urge my teachers to make learning more exciting."* (p. 208, 209) are all testaments to students' perceptions of the lack of engaging and complex curriculum.

Gallagher, Harradine, and Coleman (1996) surveyed K-12 gifted students on their views of schooling. Results indicated that students were bored and in need of more complex and diverse instructional materials. While there were some isolated reports of individual challenging experiences, the majority of students reported that instruction was paced too slowly and based on repeated presentation of already mastered material.

Without creative, innovative teaching reflective of educational best practices, segments of our student population may not be engaged, and therefore, see no need to invest in the effort in the learning necessary to reach their potential.

Research Questions

The study sought to investigate a number of issues raised separately by previous studies on state-testing effects, looking particularly at the effects of state-testing mandates on teaching gifted students, including those practices that are appropriate for the identified gifted student and those whose talents may not yet be recognized. Secondly, the study sought to investigate the impact state tests have on students themselves in terms of their attitudes and motivations to learn. Specific research questions included:

1. What are the effects of state testing on schools and teachers relative to (a) curriculum and instructional practices, (b) pressure to improve test scores, and (c) test preparation?

2. What are the effects of state testing on students labeled as gifted and talented? Specifically, what are the effects on (a) gifted students' attitudes toward school, (b) students' motivations as learners, and (c) gifted students' perceptions of the classroom environment?

Research Project Design

The study was conducted in two phases. The theoretical, conceptual framework that was used for both phases of the study was that of an interpretist theory (Erickson, 1986). That is, to understand the actions of others one must consider insider perspectives (Eisenhart & Howe, 1990). Erickson stated, "The task of interpretive

research is to discover the specific ways in which local and non-local forms of social organization and culture relate to the activities of specific persons in making choices..." (p. 129). As teachers are pressured to produce better test scores, they make specific choices to accomplish this goal, for the betterment or determent of sound instructional practices for gifted and talented students (or nurturing at-risk students with potential).

In turn, Blumer's (1972) framework of symbolic interactionism guided the phase focusing on student perceptions of state testing. Blumer's theory is based on the premises that humans act toward things on the basis of the meanings that they have for them, these meanings are derived from social interaction, and they help people interpret situations. The study examined the meanings students assigned to state-mandated tests and the resulting effects on their attitudes, and motivations to learn.

Phase One. Survey methodology was used to compare the instructional practices of elementary teachers who were responsible for teaching gifted students and those who were not, with particular focus on practices deemed appropriate for the delivery of rich and challenging curricula, similar to what one would expect to find in a gifted and talented program or that would promote the level of understanding and processing of information that would lead to identification as gifted.

Sampling Framework. Market Data Retrieval provided teacher level information for all public schools in the U.S. Based on the information provided, 928,170 elementary teachers (defined as grades K-8) were employed in schools across the nation at the time of sampling. It is important to note that approximately 15,000 elementary schools house grades K-8; however, these upper grade teachers were only in the elementary teacher database and not in both the elementary and middle school teacher databases.

In other words, each database was mutually exclusive. Because of the large numbers of teachers, a 1% stratified random sample based on metropolitan status and poverty level was drawn (n=8,044; return rate 17%).

Demographics based on responding teachers are presented in Table 1.

Table 1
Demographics of Responding Teachers

	Below Grade	At Grade	Above Grade	Total
GRADE LEVEL TAUGHT				
Kindergarten	18	61	47	126
First grade	44	93	68	205
Second grade	47	90	62	199
Third grade	69	122	74	265
Fourth grade	81	120	58	259
Fifth grade	69	95	71	235
Total	358	581	380	1289
Average Number of Years Taught	16.1 (9.8)	16.6 (9.3)	17.3 (9.8)	16.7 (9.6)

Data Analysis. Data were coded by state, metropolitan status, and poverty level of the school. Data were then aggregated based on the above mentioned variables for analysis; that is, the responses of individual teachers were averaged with those of other teachers across common grade levels, metropolitan and poverty status indicators, as well as within each state. To simplify the reporting of questionnaire results, similar items were grouped together in categories: curriculum and instructional effects, pressure to improve test scores, test preparation, positive and negative effects of standardized testing, perceptions of the consequences of testing, and teacher background data, including geographic and poverty indicators. Factor analysis was used to verify the meaningfulness of the groupings, or sub-scales.

Phase Two. This phase of the study employed a qualitative research methodology to ascertain teachers' and students' perceptions of the influences that

state testing mandates have on the curriculum, instructional process, and students' attitudes toward school. Seeking diversity of cultural groups, socio-economic status, and metropolitan status, districts in California, Texas, and Virginia were selected for participation in phase two of this study.

Sampling Framework. Using a stratified purposeful sampling design, a series of focus groups were conducted to illustrate characteristics of particular subgroups of interest to the study, (i.e., teachers of gifted students, teachers of mixed-ability classrooms, gifted and talented students, economically disadvantaged students, and LEP students.) Focus group interviews are appropriate when insights are needed, when there is a communication or understanding gap between groups or categories of people, or when one is interested in uncovering factors relating to complex behavior or motivation (Krueger, 1994).

Each focus group ranged in size from 3 to 5 participants. While it is inappropriate in qualitative studies to make generalizations beyond the specific context studied, the stratified design allowed the development of assertions about the effects of state-mandated testing on students, which can be triangulated with the quantitative findings.

A semi-structured interview guide was used to structure and guide the focus groups. The instrument containing the same questions and probes was used for all focus groups, but the order in which they were asked changed according to how individuals responded (Goetz & LeCompte, 1981).

Data Analysis. The principles of credibility, transferability, dependability, and confirmability were adhered to throughout the analysis phase. Transcript-based analysis, the most rigorous analysis strategy, was used to analyze focus group

interviews. That is, focus group discussions were tape-recorded and then transcribed by a professional transcriptionist. The transcriptions and field notes were analyzed inductively to develop coding categories (by question and then overall) from responding teachers and students. Data were then coded and sorted into the categories with typologies and diagrams developed that reflected key findings. (Ryan & Bernard, 2000). Categories were collapsed and reconfigured within each setting and across districts to determine patterns across data (Ryan & Bernard, 2000). Double coding of each transcription (two researchers coding the same data) occurred to aid in definitional clarity as well as serving as a reliability check (Miles & Huberman, 1984). References following direct quotations include the school's pseudonym, source of data, number of document in chronological sequence, and the page number of the document where the citation is located.

Results

This section presents quantitative and qualitative findings regarding the influences that state testing initiatives have on elementary classroom practices. The descriptive quantitative results are based on teachers' perception of the academic ability level of their classes. Teachers were asked to estimate the class's academic achievement/ability level (below grade level, on grade level, or above grade level). All statistical comparisons investigating differences in mean responses were non-significant.

Curriculum, Instruction, and Assessment Emphasize Test Preparation

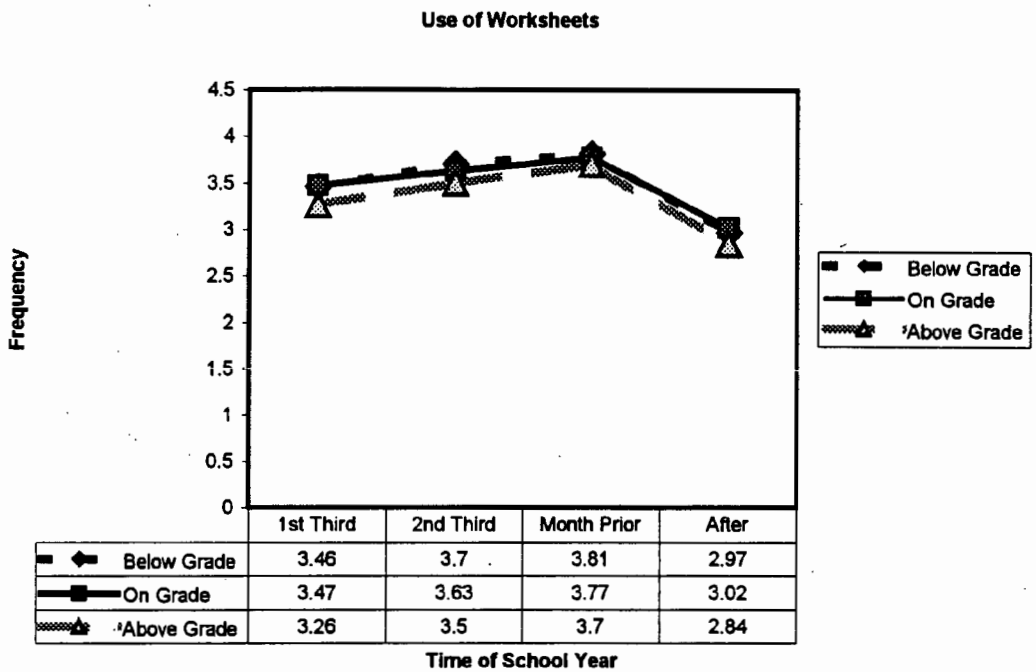
Regardless of the class ability level, teachers reported spending substantial time in preparation for state-mandated tests leading up to the administration of the tests and

a consistently sharp decrease in use of preparation activities after the tests (see Table 2). Specifically, teachers reported an increased use of worksheets, test-taking strategies, reviewing and practicing state-released test items, and giving students opportunities to practice on the types of item formats found on the state tests leading up to the tests with a significant decrease in use after the tests.

Table 2
Use of Particular Test Preparation Activities

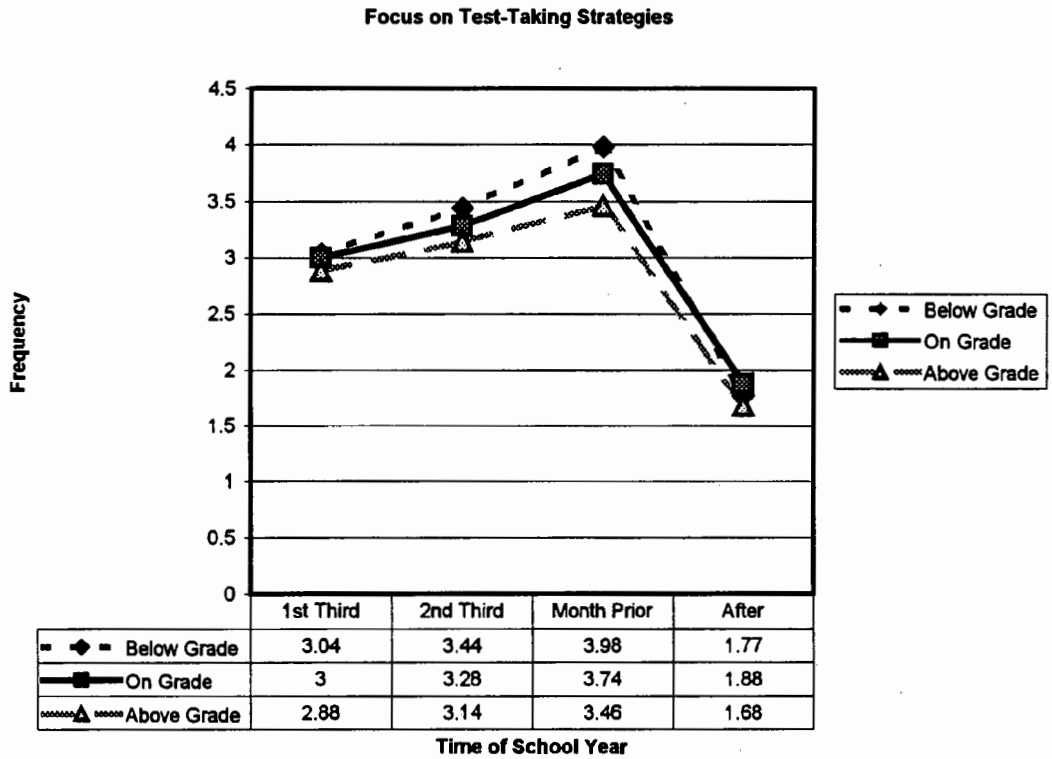
Item	Available Range	Below Grade Level	At Grade Level	Above Grade Level
How much time do you spend in your classroom on the following test preparation activities during the **first 1/3** of the year?	0-5; None to Regularly			
Worksheets for test preparation		3.5 (1.85)	3.5 (1.90)	3.3 (1.96)
Instruction for students on test-taking strategies		3.0 (1.87)	3.0 (1.92)	2.9 (1.82)
Review/practice using state-released test items		2.3 (2.02)	2.4 (2.07)	2.0 (1.99)
Student practice in the kinds of item formats that are on state test(s)		3.1 (1.92)	3.1 (1.99)	2.8 (2.00)
How much time do you spend in your classroom on the following test preparation activities during the **second 1/3** of the year?	0-5; None to Regularly			
Worksheets for test preparation		3.7 (1.71)	3.6 (1.80)	3.5 (1.88)
Instruction for students on test-taking strategies		3.4 (1.77)	3.3 (1.83)	3.1 (1.81)
Review/practice using state-released test items		3.0 (2.00)	2.8 (2.03)	2.4 (2.02)
Student practice in the kinds of item formats that are on state test(s)		3.5 (1.76)	3.4 (1.86)	3.1 (1.95)
How much time do you spend in your classroom on the following test preparation activities during the **month prior** to state testing?	0-5; None to Regularly			
Worksheets for test preparation		3.8 (1.75)	3.8 (1.83)	3.7 (1.81)
Instruction for students on test-taking strategies		4.0 (1.63)	3.7 (1.80)	3.5 (1.81)
Review/practice using state-released test items		3.6 (1.99)	3.4 (1.99)	3.0 (2.06)
Student practice in the kinds of item formats that are on state test(s)		4.0 (1.72)	3.9 (1.77)	3.6 (1.87)
How much time do you spend in your classroom on the following test preparation activities **after** state testing?	0-5; None to Regularly			
Worksheets for test preparation		3.0 (2.07)	3.0 (2.02)	2.8 (2.14)
Instruction for students on test-taking strategies		1.8 (2.01)	1.9 (1.97)	1.7 (1.95)
Review/practice using state-released test items		1.4 (1.88)	1.4 (1.86)	1.2 (1.74)
Student practice in the kinds of item formats that are on state test(s)		2.0 (2.09)	2.0 (2.07)	1.9 (1.98)

Note: Means were rounded to the nearest tenth



	1st Third	2nd Third	Month Prior	After
Below Grade	3.46	3.7	3.81	2.97
On Grade	3.47	3.63	3.77	3.02
Above Grade	3.26	3.5	3.7	2.84

Figure 1: Pattern of Worksheet Usage Across the School Year



	1st Third	2nd Third	Month Prior	After
Below Grade	3.04	3.44	3.98	1.77
On Grade	3	3.28	3.74	1.88
Above Grade	2.88	3.14	3.46	1.68

Figure 2: Patterns of Focus on Test-Taking Strategies Across the School Year

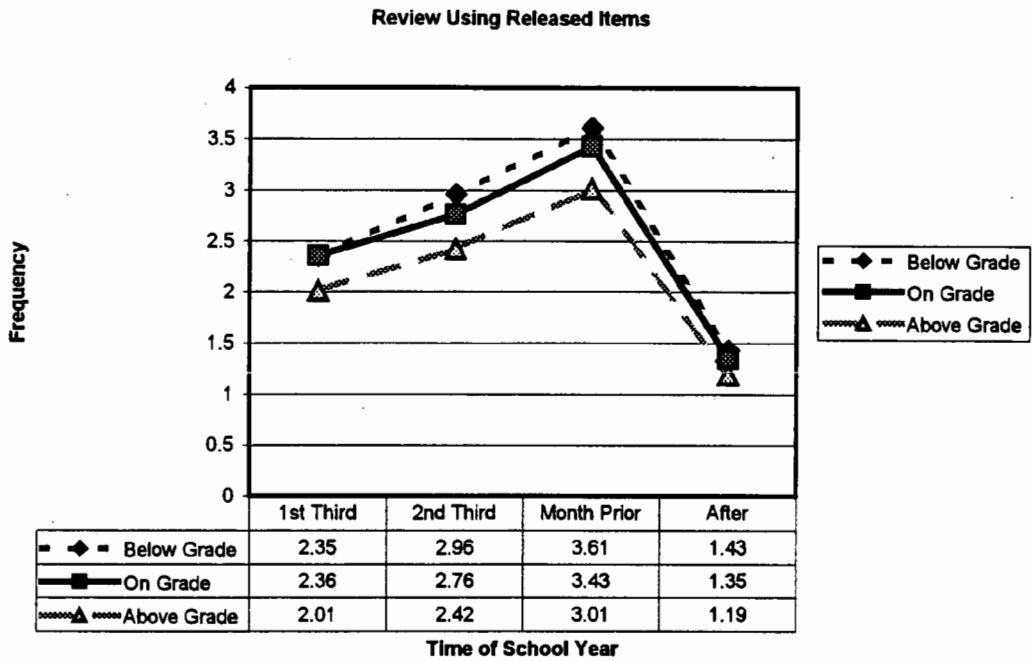


Figure 3: Patterns of Use of State Released Items Across the School Year

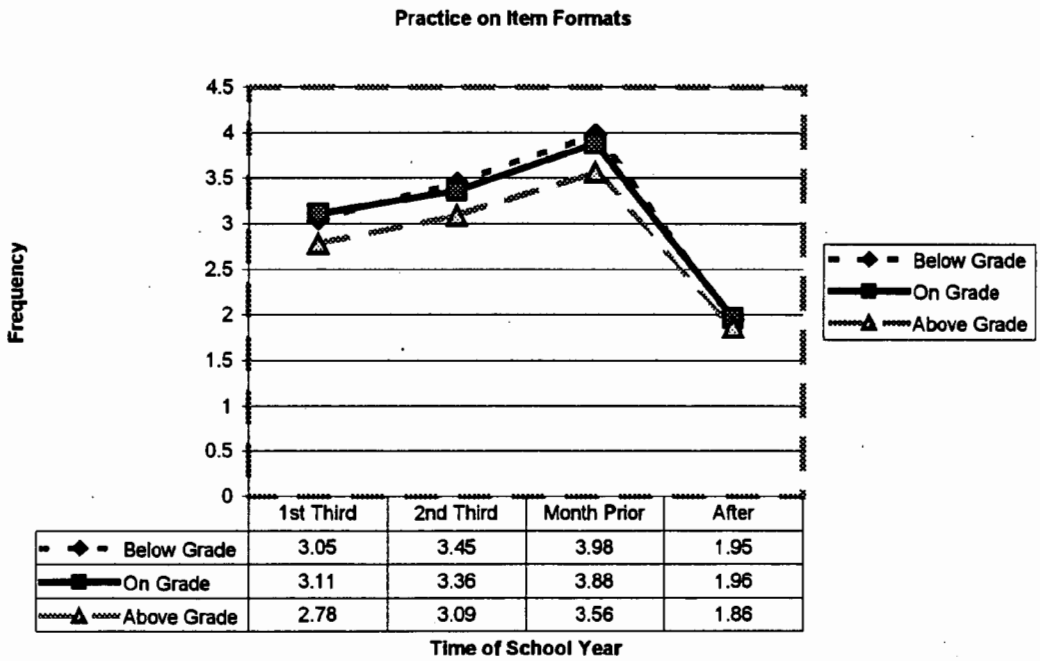


Figure 4: Patterns of Practice on State Test Formats Across the Year

In interviews, teachers and students describe classrooms that focus the majority of time and resources on test preparation at the expense of other strategies and approaches. "I do spend most of my time, I'm saying ninety-five to ninety-eight percent of my time is spent preparing for the test." (Alexander Elementary teacher, #1, p. 9) Teachers seem to believe that the best method for preparing students for the state test is to simulate the testing experience in classroom instruction. Consequently, classroom lessons focus on isolated skills and tend to emphasize facts and rules.

> The teachers are reinforced to be like simulators. You give a pilot, before he goes out and gets his pilot's license, he's put in a simulator. And he's got trees in front of him and a runway in front of him, and everything else. Same thing with submarines, they're in the water and they've got things, and they're in simulators with these things. That's what teachers are having to do. They're having to make up tests and to use the strategies that are the way that are tested, instead of teaching all of the other stuff around it. Not the big picture, just this limited view. This particular skill. (Alexander Elementary teacher, #1, p. 13)

Teachers were asked to indicate how state test results affected their instruction (see Table 3). The majority of teachers reported, across all class ability levels, that they teach to the tests more than they would if there were no accountability pressures and that they omit information because of lack of time due to preparing for state tests. Thirty-seven percent of teachers teaching in below grade level classes reported not doing certain things that looked interesting or beneficial for students because of state tests; 28% of teachers teaching in on grade level classroom reported not doing things; and 26% of teachers teaching in above grade level classrooms indicated not doing certain things that looked interesting or beneficial for students because of state tests.

Table 3

Item	Available Range	Below Grade Level	At Grade Level	Above Grade Level
How have state test results affected your instruction?	0 –1; Not checked - Checked			
I teach to the state test(s) more than I normally would		64	60	59
I omit certain information because there is not enough time to fit it in because of state test(s)		64	60	52
I do not do certain things that look interesting or beneficial for students unless they are on the state test		37	28	26
I do not do anything differently because of the state tests		19	20	26

Note: Percentages have been rounded to the nearest whole number

Classrooms filled with repetition, practice worksheets, and skill drills are not reflective of the recommended practices for gifted learners, or perhaps any other type of learner. Regardless, these describe common practices in place in elementary schools in the states studied. Teachers seem to recognize the ill-fit of these approaches for their brightest learners yet feel powerless to change directions. "They cannot. The teacher unfortunately cannot take in the gifted child's needs when she's trying to pull everybody else up who doesn't have the skills. The gifted child loses that year." (Barton Elementary, #1, p. 9) Classroom experiences seem to focus on the needs of the class as a whole, and less emphasis is placed on the specific needs of individual students. Because of the pressure to achieve at a specific level, teachers tend to gear the pace of instruction or the level of assignments toward the lower-end of students' academic levels.

> It's true. I feel we're constantly focusing, you know, because we are trying to recover, as Jane said, we're the foundation, and this is where we are trying to catch up. And what we focus on in early childhood is the non-readers, kids working below grade level, at-risk kids, that are at risk of failure. And just once a year do I ever hear about G/T (gifted and talented) nominations, but throughout the whole year, it's constant tracking, and assessing, and collaborating with your teams to focus on the ones that are not working at grade level. Just once a year

> at the end of the year is when you hear about G/T nominations, and everything is just compiled at the last minute. When our whole emphasis is on our low achieving students. So I definitely agree that this is a problem. (Alexander Elementary teacher, #1, p. 18)

Another teacher in the focus group responded to the teacher's lament about the lack of attention to gifted learners' needs.

> We were, as Mr. B. was mentioning... We are so focused on the recovery and the low achieving that we try to pick them up. This year it was an eye-opener for me, too. We were doing UIL (university interscholastic league), we were in a UIL contest this year and that's where I... I had to shift focus and try to find the students that were doing exceptionally well. To send them to the UIL contest. Number sense, math, spelling, story telling, oral reading, poetry, and it was amazing when I had to shift gears. It was like, wow. And then trying to select only a few. We have so many. So many who are way, way up there. Way! (Barton Elementary Teacher, #1, p. 18)

The process of looking for strong students seemed to be the impetus for the teacher to recognize how many bright and talented students were being overlooked in the classroom activities geared toward the most struggling learners.

Teachers that taught only gifted students placed slightly less emphasis on test preparation than those teachers that taught heterogeneous classes of students, a pattern that was echoed in the quantitative findings.

> So a regular child could take up to fifteen times to teach the same concept that you would teach a G/T student who could catch up to you and understand it the fifth time. So yes, we can go faster and we are able to do more with these [gifted and talented] children." (Barton Elementary, #1, p. 5)

Yet, despite the more talented students in the classroom, teachers of gifted students are in many situations still bound by the same parameters as the teachers of mixed-ability students.

> The G/T teacher has to follow the timeline also. And a G/T student can take the test on day one and probably pass the test. But the teacher is still expected to follow the timeline. The gifted student doesn't have to do all of the drilling, working on the objectives day after day, but they have to follow the timeline,

follow the same curriculum as the other kids. So they're losing out, because I don't think they're being challenged. (Carson Elementary, #10, p. 7)

In the face of classroom learning experiences focused on drilling objectives and repeatedly practicing skills, teachers express concern that bright students will not be able to demonstrate talents or cultivate potential talent in school. Teachers fear that the curriculum, instruction, and assessment so focused on preparation for state testing will yield detrimental effects for identification of gifted students, particularly students from underrepresented groups. "It's kind of hard to see those characteristics of gifted kids when everything is [state test] formatted as far as the lack of creativity and higher-level thinking." (Carson Elementary teacher, #13, p. 14)

On the survey, teachers were asked how often they were able to give attention to particular areas during classroom instruction. Again, regardless of class achievement ability level the patterns of responses were similar for each of the areas. While teachers reported giving attention to higher-order thinking skills and problem-solving skills they also reported with similar frequency attention to factual knowledge and basic skills (see Table 5). Teachers report giving little attention to topics not on state tests, the areas of fine and performing arts, and enrichment areas.

Table 5
Areas Receiving Attention During Instruction

Item	Available Range	Below Grade Level	At Grade Level	Above Grade Level
How much attention are you able to give to the following areas in your classroom?	1-3; Rarely to Often			
Higher order thinking skills		2.5 (.61)	2.6 (.56)	2.7 (.48)
Problem solving skills		2.7 (.47)	2.8 (.45)	2.8 (.41)
Topics not on state tests		2.0 (.71)	2.0 (.68)	2.2 (.64)
Fine and performing arts		1.7 (.67)	1.7 (.71)	1.8 (.68)
Basic skills		2.8 (.50)	2.8 (.40)	2.8 (.43)
Factual knowledge		2.6 (.54)	2.7 (.50)	2.6 (.51)
Enrichment		2.0 (.72)	2.1 (.70)	2.3 (.67)

In interviews, teachers describe reduced use of instructional strategies or approaches that are student-centered, time-intensive, or creative in nature. For example, a teacher explained that she was trained in and previously used Junior Great Books methods to facilitate literature discussions but now felt pressure to use reading passages and comprehension questions that resembled those seen on state tests. "I think that we kind of avoided it [Junior Great Books] well, at least in my class because there's really not time for that." (Barton Elementary, #1, p. 22)

Content delivered to students also seems to be directly affected by the state testing pressure. Subjects not included in the state tests often we accorded low priority for most of the school year to create larger blocks of instruction for tested subjects and skills. Acknowledging this emphasis, some teachers articulated concern for the long-term detrimental effects for the students, particularly for the most capable learners.

> It really doesn't make a lot of sense because if you were to compare the U.S. to the rest of the nations, we are so weak in math and science. Duhhh. Math and science go hand in hand. However, science is ignored and it's not until they become juniors and seniors in high school that the emphasis is put on science. Well, it's too late because it was lost in the first grade when science wasn't started then. You know? They always focus on math, but they don't do the higher-level thinking where you tie math into science. And once our kids get to high school and college, they're so far behind, there's no way they're going to catch up. (Carson Elementary teacher, #10, p. 6)

On the survey, teachers were asked to report the frequency of use of particular assessment formats. Again, the patterns across class ability levels were similar for each format. While constructed response items, long term projects, performance items, and multiple-choice items were reportedly used on average "sometimes," test preparation was reported to be the most often used strategy (see Table 6).

Table 6
Use of Particular Assessment Strategies

Item	Available Range	Below Grade Level	At Grade Level	Above Grade Level
How frequently are the following practices used in your classroom?	1-3; Rarely to Often			
Constructed response items		2.2 (.78)	2.2 (.78)	2.2 (.78)
Multiple choice items		2.3 (.71)	2.2 (.71)	2.2(.71)
Long term projects		1.8 (.73)	2.0 (.70)	2.0 (.70)
Performance items		2.1 (.69)	2.2 (.65)	2.2 (.65)
Test preparation		2.6 (.58)	2.6 (.64)	2.6 (.64)

In addition to matching curriculum and instruction, to test content, teachers articulate the importance of matching classroom assessment to the format of the state tests. Teachers feel that they do not have the luxury of giving authentic or performance assessments to students because of time constraints. Teachers believe that the most direct route to success on the state tests is through class experiences that provide drill in the target objectives using materials and resources that resemble the tests. Not surprisingly, teachers also believe that the best way to assess students is through the same format contained on the state tests.

> We have to format our assessments to match the [state test] so when the kids do actually take the [state test] they're not shocked by the test format. Whereas we might prefer essay questions or fill-in-the-blank kinds of things, the [state test] is just multiple choice, bubble it in. So our tests are like that, so they're formatted alike. (Carson Elementary teacher, #10, p. 7)

Other methods of classroom assessment are virtually abandoned with the possibility in some instances of inclusion after the tests are completed. A teacher says that she assigns projects

> ...not very often.... You constantly have to drill and work with the objectives. Constantly. And if we had that luxury of giving projects it would be very nice. We have these thematic units and these projects, it would be very nice to [use them in class] but we can't. We can't really do that while we have to work and work on the objectives. (Carson Elementary Teacher, #10, p. 5)

Gifted students' responses to the emphasis on state tests

Gifted students identify numerous concerns and complaints about their school experiences in regard to the heightened emphasis on state tests. Most consistent among their responses was a sense of boredom and disengagement in classes that frequently practice state testing formats and writing prompts. When asked if the students really get into what they study in school, a student said that, "If I liked what I was studying I would study very hard, but we are just doing the same thing over and over. It is so boring." (Carson Elementary student, #1, p. 2) When asked if they were studying anything that had any connection with their lives outside of school, they said that they were just studying and learning for the [state test]. They are not excited about school because they are studying things that they studied before. While younger students (grades 1-3) are less-frequently tested, they also maintain the most positive attitude about the testing experience. "I think it is a great test." (Barton Elementary student, #4, p. 1) Other elementary students are more critical about the impact that the state testing emphasis has on their learning experience. "It's just stuff we already know. It's just a long review of what we've done all year. We've reviewed it a lot already before the [state test], it is kind of a waste of time." (Barton Elementary student, #5, p. 1) Other students resent the disruption from the learning they enjoy to practice test-taking strategies or to write to specific writing prompts. "It doesn't help us allow teachers to see what is wrong with us in our subjects. It doesn't help us at all. It hurts real learning." (Carson Elementary student, #2, p.1) When asked to explain what he meant by his comment, the student gave a specific example of how he believes test preparation intrudes in his learning. "With Shakespeare or The Odyssey, which we're reading now,

our study is interrupted to do [state test] exercises. It has nothing to do with The Odyssey. It's confusing. It gets in the way of the time we have to be in class." (Carson Elementary student, #2, p. 1)

Some students we interviewed were less verbal about their feelings about the changes in their classroom learning experiences. Some students seemed to internalize the pressure to perform on the state tests. Facing this pressure, some students responded with physical illness, nail biting, and other anxiety-inspired behaviors. A teacher (who is also a parent) describes a scenario with her son and test anxiety.

> A drawback that I see is that it's an overwhelming pressure on young people. I've had my son up at four o'clock in the morning the day before the [state test] and I see his silhouette on the wall, and I wake up and he says, "Mom what if I do badly?" It's a lot of pressure on a kid. We had to go into the school and talk to the counselor. He gets academic recognition, you know, in his subjects for the most part every year, but it's just this anxiety. He never bit his nails before and now they're up to the quick." (Carson Elementary teacher, #13, p. 3)

Gifted children frequently experience the disabling effects of perfectionism, but when overt pressure is communicated in words and behaviors from their teachers in school, pressure to exceed expectations seems a common response.

> I think it's just because I see how stressful, how stressed the kids become. Like our G/T kids, I know from my classroom they wanted to get the 100, they wanted to get that perfect test. They wanted that perfect test and that stress kind of, I see them and they get sick and feel bad, have a headache and they want to go to the restroom and they just... it's horrible to watch. (Barton Elementary, #2, p. 10)

Teachers often communicate pressure in a variety of ways, in many cases unintentionally. For example, in one school there is a widely-held belief that it takes several gifted students' scores to pull up the score of one failing student.

> In math I feel the pressure of the [state test] from day one. Especially since I'm told that I have the G/T students that they should pass the [state test]. What if they're sick that day? What if they just don't like to take tests? Most of the time they pass, but you're told, "Okay, you have the top students, so your students

> need to make a 90% or above to help the others students come up so that they we can balance off. It's said to me down the hall, not written in a memo. Well, it's not written down, it's not handed down from the administration saying you have G/T students, you need to have a 95 or above that are passing. But you're told. (Carson Elementary teacher, #12, p. 3)

Teachers are not alone in their belief about the importance of gifted students' scores. The bright students themselves are quite aware of how their achievement affects the entire school. "We are the ones that bring it up. They ride on us even more because if we don't do the recommended scores or better, they get a bad reputation that they are bad teachers or they are not teaching us." (Carson Elementary student, #2, p. 1)

This perception has serious consequences for gifted learners. Across settings, teachers readily acknowledge that gifted students are not adequately challenged, already know much the material covered in class, and need enrichment opportunities, however, teachers hesitate to provide these things for fear of wasted time. Despite these realizations, teachers still feel pressure to emphasize test preparation to assure that the gifted students do what they can do to "pull up" the rest of the student population.

While some students respond to the feelings of pressure with anxiety, other students respond by sabotaging the test. Teachers in one school described their six-step process for problem solving used in math classes. Some students, specifically the gifted students refuse to use the process because they know how to do the tasks and problems without following the repetitive six steps that include asking students to circle the operation, underline the numbers, and put a square around the facts in the sentence. Regardless of students' facility with problem solving, teachers require

students to follow the prescribed steps, often creating a battle between the teacher and the students that results in test sabotage.

> I tell them in my class that it [six step problem solving method] is required. You are not going to turn it in, I'm not going to, I'm not picking up that little test paper until I see some work. Show me some work. (Teacher Barton Elementary, #1, p. 21)

Students respond negatively to this pressure and described with anger their frustration about the prescribed steps. "I don't like it when you already know the answer but you still have to do it [show the six steps] instead of solving it my way." (Student, Barton Elementary, #5, p. 1) Teachers acknowledge students' frustration but fail to respond to it.

> The G/T kids are frustrated for a different reason [than the struggling learners] because they already know it and they have to do it over and over... There is some discussion of the strategies taught to students from the testing and that they are particularly disliked by the gifted students. For some kids, they refuse to use the strategy and then point out to their teachers how well they did on the test in spite of not using the strategy. (Teacher, Barton Elementary, #4, p. 2)

Bright students, frustrated by the teachers' unwillingness to negotiate a compromise in regard to the test preparation strategies, sabotage the tests, sometimes succeeding in spite of the teachers' requirements, but in other instances are likely yielding lower scores than their potential suggests. In these cases, the most talented students are being hindered by teachers' perceptions of the best preparation methods for state tests.

Administrative focus on state tests

On the survey, teachers were asked the degree to which the leadership in their schools focused discussions with them on student test performance as well as introducing or discussing new instructional ideas, which teachers reported occurring a few times per year (see Table 7). The response patterns for each class ability level were

similar for each of the activities presented. In general, the largest proportion of teachers reported that their administrations engaged in reviewing test scores, discussed ways to improve test scores, provided materials for test score improvement, and evaluated their instructional emphases for weak areas reflected in test scores only a few times per year. The largest proportion of teachers also indicated that new or important instructional ideas were also presented a few times a year.

Table 7

Percentage of Responses for Each Category on Administration Focus

Item	Available Range	Below Grade Level				At Grade Level				Above Grade Level			
How often during the year does your school administration engage in the following activities with teachers?	0-3; Not at all to Many times	Many Times	A Few Times	Once	Not at all	Many Times	A Few Times	Once	Not at all	Many Times	A Few Times	Once	Not at all
Reviews test scores at staff meetings		22	47	28	4	20	49	26	5	18	49	28	5
Discusses ways to improve test scores		41	44	8	7	39	43	9	8	40	43	10	8
Provides materials to improve test scores		32	43	8	17	32	42	12	14	28	44	11	17
Checks to see that teachers are emphasizing areas which showed weakness from past test results		28	36	12	24	27	36	11	26	24	41	9	26
Introduces or discusses important new instructional ideas		29	41	10	21	30	41	10	19	29	50	7	14

Note: Percentages have been rounded to the nearest whole number

Across all class ability levels, the majority of teachers reported that as a consequence of poor student test performance, new pressure to change their teaching strategies would occur. Reassignment of grade level or the type of students taught and a private reprimand were also potential consequences that a large percentage (approximately one third) of teachers reported occurring as a result of poor student test performance. Twenty-five percent of the teachers in below grade level classes, 18% of

teachers teaching in on grade level classes, and 15% of the teachers teaching in above grade level classes reported loss of position as a potential consequence of poor student test performance. Roughly a quarter of the teachers reported that there were no consequences to teachers as a result of poor test performance by students.

Table 8
Potential Consequences as a Result of Poor Test Performance

Item	Available Range	Below Grade Level	At Grade Level	Above Grade Level
What are the potential consequences to teachers whose students perform poorly on state test(s) in your school?	0-1: Not checked – Checked			
Potential loss of position as a teacher in this school or school district		25	18	15
Reassignment of grade level or type of students taught		38	31	28
Private reprimand		34	30	32
Pressure to change teaching strategies		67	64	64
No consequences		20	25	24

Note: Percentages have been rounded to the nearest whole number

After testing, instruction changes emphasis

Classroom observations conducted after the state tests are completed shows the dramatic change in emphasis in classroom curriculum, instruction, and assessment. Several teachers describe the inclusion of instructional strategies that emphasize creativity and enrichment. "I don't do projects at all until after the test." (Carson Elementary teacher, #4, p. 1) Other teachers feel permission to teach concepts and skills that they believe are important, but are not among the concepts or skills tested on the state tests.

> After [state test], I'm able to do more activities where they can understand concepts a lot easier than just, "okay, this is what you have to know for the test" and that's it. You know, I'm able to do, I'm able to expand on what it... like when I did linear equations, they understood it because we did an activity that took three days, but it was an activity that helped them understand. If it had been on the

> [state test] it would have had to have been, "Okay here's how you do it. That's it. Learn it." (Carson Elementary teacher, #12, p. 4)

Another startling pattern of teachers' responses regarding instructional changes include a virtual surrender of instruction upon completion of the tests when the tests occur later in the spring. A group of teachers discuss this phenomenon seen at their school.

> Teacher 1: Most teachers are teaching for the [state test] and once it's over, they pretty much stop teaching. And the kids are also noticing that. You know, I had a remark, "Miss, the test is over. Why do we have to even do any work?"
>
> Teacher 2: That's true, they don't want any grades. They don't want to do anything any more because the tests are over.
>
> Teacher 3: Let's play! The [state tests] are over! (Carson Elementary teacher focus group, #12, p. 1)

The students seem confused by the mixed messages they receive in classes. Through their actions and words, teachers seem to communicate to the learners that the test is the purpose of schooling. Following that logic, students are puzzled why learning continues after the conclusion of the tests. In their minds, the conclusion of the tests seems to signal the end of the academic experience.

Some instructional activities observed after the completion of state testing seems to lack an instructional purpose or objective and seems more focused on entertaining the students more than educating them. The decision to spend the precious instructional time that teachers complain is so limited on activities that have questionable educational value presents an interesting paradox between the description of their beliefs and their actions.

> After the tests, we always have, like, fun activities. You know, this year we had [parties]. We did one on Greece and we had an Italian – or a Roman—that we had you know, spaghetti that they brought in. Then we had Egypt, and we

> mummified a chicken. That was fun. And you know, they really enjoyed it. And you see the kids happy and you see them smiling. (Carson Elementary teacher, #10, p. 4)

Upon completion of the state tests, some teachers feel that the students need fun activities that will keep them engaged and entertained. While some teachers seem to interpret this as entertainment alone, other teachers use this small window of time to include all content, strategies, and field trips that were considered unimportant during the major portion of the academic year. In all classrooms observed in the weeks following the state tests, the climate and attitude of teachers and students were remarkably different.

Summary and Implications

This study had two major aims: a.) to investigate the effect of state testing programs on the instructional practices of elementary teachers and b.) to investigate the effects of such practices on gifted students' attitudes toward school and motivations to learn. We conducted a large-scale national survey to investigate teachers' (self-reported) practices, followed by a more in-depth look into elementary classrooms in three states, California, Texas, and Virginia to triangulate the data and to hear the voices of students in regard to these prevalent patterns. The conceptual framework that guided this study was that of interpretivist theory (Erickson, 1986) and symbolic interactionism (Blumer, 1972). We sought to understand the factors that influenced classroom decision-making in regard to state-mandated testing and gifted students' interpretation of the testing experience. From a symbolic interactionist perspective, the meanings that teachers assign to the standards, the tests, and the consequences of the tests influence which path they select to complete them. The perceptions that teachers

hold of the standards, the tests and the students interact and define how they conceive of curriculum and implement instruction and assessment.

Teachers' perceptions

For the teachers we observed, how they interpreted the meaning and purpose of state-mandated testing influenced how they responded to them in their individual classrooms. The concept of "state testing" carries over into at least three specific areas including the standards, the actual testing instrument (including the consequences they assigned to the test) and the students as recipients of the testing experience. Numerous beliefs about the testing process and these areas emerged from teachers' survey responses, interviews, and actions.

Standards. Teachers assign meaning to the standards, which affect how they use them to guide their instructional program. The educators that view the standards as finite and unbending appear to be the least creative in how they seek to accomplish them. A prevalent pattern across classrooms and teachers is the belief that the standards as operationalized by the state assessment are the gospel, and most teachers feel unable to deviate from them. In some instances, teachers perceive the standards as checklists and fail to conceptually organize content to create logical frameworks for the students. In other cases, teachers view the standards as lockstep. As such, they teach the standards without provision for re-teaching fundamental prerequisites or extending or enriching based on documented student needs.

The prevailing belief among teachers is that the most direct and efficient method to communicate the standards to students is direct instruction in a whole-group classroom format. While teachers are able to clearly describe a variety of instructional

approaches, teachers in elementary classrooms frequently deliver large amounts of information to students by lecture and students practice skills by using worksheets and classroom drills. Other instructional strategies such as the use of literature discussion groups, (e.g., Junior Great Books), hands-on science experiences, and art-infused projects, among many others, are recognized by teachers as luxuries and not essential to their mission.

Tests. The perception that what is being assessed is what is most important leads teachers to surrender their professional judgment in what is important, how content is taught, how mastery of the content is assessed. A direct consequence of this relinquishment of decision-making power is that subject areas not tested are given little classroom emphasis. Some concepts are not taught at all; others are skimmed or briefly summarized. The test provides the template for the delivery of instruction and assessment.

Teachers perceive that only way that they can be assured of adequately covering the necessary skills and knowledge is to mimic the testing format in repetitive, patterned activities and practice tests. Teachers believe that to deviate from this preparation agenda will not adequately prepare students for the tests. Therefore, to engage in classroom experiences that emphasize creativity, open-ended responses, and real-life application of knowledge and skills are luxuries that neither teachers nor students have time to indulge. Interestingly, this is all in light of teachers' indications that there are few direct consequences to poor student test performance. In spite of the limited actual consequences, the perception of poor test performance appears to motivate teachers to

disregard best practices and engage in ineffective and inappropriate classroom practices for students.

Students. Regardless of whether teachers recognize or articulate differences among various learners in their classrooms, they fail to respond to this diversity in their classroom practices. The result is one-size-fits-all instruction that not only mimics the state test format but also is limited to the content specifications of the test. Further, the pace of delivery and level of instruction are geared toward the least capable learners in the classroom, leaving gifted students bored and often disengaged in learning. Even with the knowledge that some students have already mastered specific standards, teachers continue to insist on regimented learning experiences that impose a "ceiling effect" for student learning.

Teachers' perceptions of the standards, tests, and students shape their classroom actions. As such, there are serious implications for teachers' professional development. For example, many of the school districts we observed mandate some degree of differentiation of instruction as a vehicle to address academic diversity in mixed-ability classrooms. The teachers' perceptions discussed above lessen their willingness and ability to construct instructional activities for diverse learners' needs. Other professional development initiatives may meet with similar resistance due to the conflict between their perceptions of the test and the underlying assumptions of the initiatives.

Gifted students' perceptions and reactions

Gifted students' perceptions of school are shaped by their classroom experiences that are heavily focused on test-preparation, skill practice, and repetition.

These bright learners express frustration and resentment about their lack of opportunities to continue to learn new things or revisit familiar concepts in greater depth. Gifted students perceive additional pressure (on top of their own need to succeed) to carry the burden of their lower-performing peers. This pressure is manifested in a variety of behaviors from overt anxiety to test sabotage.

The implications for these bright learners are significant. The most obvious consequence of this scenario is the underdevelopment of bright learners' potential. Students in classrooms that focus on low-level tasks with low expectations for student performance, miss opportunities to develop the skills and attitudes necessary for success in rigorous academic and arts programs. Most tragic, perhaps, are the students currently underrepresented in gifted programs across the nation, specifically students of color, students in lower socio-economic conditions and students lacking in rich cultural experiences. The development of talent in these populations is dependent upon the provisions provided by schools and if schools no longer prioritize talent development, it is likely that these students will continue to be underrepresented in gifted programs and advanced level classes.

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