Influences of High-Stakes Testing on Middle School Mission and Practice

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Abstract

This study explored the effects of high-stakes testing and accountability on the fundamental practices associated with middle school philosophy. Participants were middle school educators, including administrators and teachers, from Pennsylvania middle schools. An online survey was used to collect data for this study. The survey addressed the following middle school practices: grouping for instruction, developmentally appropriate instructional practices, interdisciplinary and integrated curriculum, interdisciplinary teaming and planning, and advisory programs. Participants were also encouraged to add comments throughout the survey. Findings revealed that since the implementation of No Child Left Behind (NCLB) and the associated high-stakes tests, developmentally appropriate practices in middle schools have been altered to provide additional time for test preparation. In many cases, tested subject areas (specifically reading, writing, and mathematics) were given more instructional time during the school day. Furthermore, special area subjects (i.e., electives) were often sacrificed and, in some cases, advisory time was used for remediation. Implications for practice focus on the need to maintain a balance between test preparation and practices deemed appropriate for middle school students.

Introduction

Since the middle school concept emerged in the late 1950s and early 1960s, proponents have introduced myriad recommendations and prescriptions for teaching students in the middle grades (McEwin, Dickinson, & Jenkins, 2004). Associated with middle grades education is the commitment to young adolescents and their unique qualities. National Middle School Association (2003) "seeks to conceptualize and promote successful middle level schools that enhance the healthy growth of young adolescents as lifelong learners, ethical and democratic citizens, and increasingly competent, self-sufficient young people who are optimistic about their future" (p. 1). Educating the whole child, including the

intellectual, emotional, social, moral, and physical domains, is central to the philosophy of middle grades education. "For middle schools to be successful, their students must be successful; for students to be successful, the school's organization, curriculum, pedagogy, and programs must be based upon the developmental readiness, needs, and interests of young adolescents" (NMSA, 2003, p. 1). In *Turning Points 2000*, Jackson and Davis (2000) stated, "The main purpose of middle grades education is to promote young adolescents' intellectual development" (p. 10). They added,

> It is to enable every student to think creatively, to identify and solve meaningful problems, to communicate and work well with others, and to develop the base of factual knowledge and skills that is the essential foundation for these 'higher order' capacities. (Jackson & Davis, 2000, pp. 10–11).

In *This We Believe: Keys to Educating Young Adolescents* (NMSA, 2010), NMSA clearly defined best practice for today's middle schools. For example, teaming, is a well-documented middle school practice. Teaming not only leads to increased communication between school and home, but also advances more positive student attitudes leading to increased student achievement (Flowers, Mertens, & Mulhall, 1999; Flowers, Mertens, & Mulhall, 2000a; Flowers, Mertens, & Mulhall, 2000b; NMSA, 2010).

No Child Left Behind

Prominent among the challenges that face middle grades educators is the issue of high-stakes testing. Teachers and administrators across the country have experienced the pressures associated with such testing. Meeting Annual Yearly Progress (AYP) goals has become a factor in the use of instructional time for test preparation. For those schools that cannot meet AYP, the consequences can include potential remediation and/or corrective measures. Nichols and Berliner (2007) addressed NCLB legislation as follows:

> We are concerned here with only one of the provisions of NCLB, the one requiring that states adopt a system of accountability whereby students, teachers, administrators, and schools are evaluated annually on the basis of students' standardized test performance and that consequences follow when student scores are low or annual gains in school achievement are not made. (p. 7)

Moreover, accountability dominates the discussion on assessment of classroom and school performance.

"Because of the pressure to raise test scores, particularly in the urban school districts, teachers are compelled to teach the skills and knowledge that will be tested, neglecting more complex aspects of the subjects and, indeed, some subjects altogether" (Hursh, 2008, p. 92). Zhao (2009) captured this sentiment when he stated, "Several studies discovered that NCLB caused a large proportion of schools to teach to the test and to reduce instructional time for subjects not required by NCLB" (pp. viii–ix). He further noted, "Some states, schools, and teachers have even been found to cheat on behalf of their students in order to meet the NCLB requirements" (p. ix). Finn (2008) added to the discussion in his book on school reform:

> Because it's generally true in education that "what gets tested is what gets taught," too cramped a testing plan may narrow the curriculum. If only reading and math "count," for example, school may focus overmuch on drilling youngsters in those skills and neglect history, civics, science, not to mention art, music, and languages. ... If teachers can determine which topics will actually appear on the year-end test, they may further restrict what they cover in class. (p. 250)

In another discussion on standardized tests, Bracey (2009) asserted, "Schools under the gun to raise test scores increasingly rely on strategies that get immediate, but short-lived, results" (p. 34). This tendency is further supported by those noting a shift in instructional tendency to incorporate test-taking skills. "Schools participate in gaming strategies to avoid adverse consequences, and teachers reshape instructional activities to mirror standardized tests" (Valli, Croninger, Chambliss, Graeber, & Buese, 2008, p. 51). Thus, NCLB has noticeably impacted educators' content coverage and the use of instructional time.

Developmental Needs

Many middle schools and programs have been designed to address the wide range of developmental needs of the emerging adolescent. Among these needs are those associated with the physical development of the young person, such as providing opportunities to move around the classroom. Young adolescents are learning about themselves and their physical growth. It is during this stage of development that their need to socialize increases. Rather than sit in rows with limited opportunity for interaction among peers, instruction in the middle school typically allows

for movement and peer interaction. Cooperative learning and other flexible grouping strategies are among the instructional practices that address the young adolescent's need for physical movement and social interaction. Pitton (2001) stated, "If teachers do not recognize the impact of these developmental differences, then they will not be able to respond accordingly" (p. 24). Emotional development ties into this as well. For example, the middle school student yearns to be accepted by peers. Instructional practices such as grouping, that take into account the developmental characteristics of young adolescents may be more supportive of the emerging adolescent, but may be less conducive to an environment focused on test preparation.

Nonetheless, pressure to increase test scores is a prominent component of the instructional process. While a body of literature ties increased achievement to accepted middle school practices (Backes, Ralston, & Ingwalson, 1999; Lee & Smith, 1993; Mertens & Flowers, 2003), other studies have demonstrated the departure from best practice in the wake of recent assessment demands.

In their study of accountability and the changing practice of middle school educators, Green and associates (2008) expressed their concern that best practices for students in the middle grades may, in fact, be at risk. They pointed to the increased emphasis on the requirements of NCLB and the attainment of AYP as major factors. "This study indicates that pressure to prepare students for annual tests is leaving teachers with less support and motivation to pursue teaching within the framework of the middle school model" (p. 60). In a separate study, Faulkner and Cook (2006) reported on the demands of assessments as they pertain to middle school instructional practice. Teachers were asked about the influence of state-mandated tests on their instructional practice and choice of teaching strategies. "There was an overwhelming sense that the state assessment dictated their practice and, in a sense, forced them to use ineffective, teacher-focused instructional strategies" (p. 7).

Mastery and Performance Orientations
Goal theory, in the educational psychology literature, offers clear distinctions between mastery and performance orientations to learning (Brophy, 2004). Students with a performance orientation are motivated to get good grades. For it is the achievement of good grades that gives the students personal satisfaction. Deep understanding of content is valued less than the high grade. Mistakes

are viewed as exposing weaknesses, for example, "Rather than ask for help when they need it, they prefer to conceal their difficulties by leaving items blank, taking wild guesses, or perhaps copying from neighbors" (Brophy, 2004, p. 91). Rote learning and short-term recall are a means to an end.

Mastery orientation, on the other hand, is associated with the student who uses his or her ability to learn to the fullest extent he or she can. Students are more deeply engaged in the learning task and simply enjoy being part of an environment where learning takes place. For these students, learning from mistakes is expected and acceptable (Brophy, 2004; Schunk, Pintrich, & Meece, 2008). Surely, schools that place the needs of the child as primary fall into this category, although none are mutually exclusive. "Having students learn well is of little value if what they learn is trivial or unimportant" (Guskey, 1997, p. 20). With the pressures of testing, sufficient time for students to explore and discover are being replaced by carefully scripted programs—ones that prepare students to perform well on tests. Middle schools are in a dilemma to ensure high scores and AYP, while at the same time, maintaining the middle school concept of educating the whole child (socially and emotionally) to ensure individual growth for all students.

Current Study
The current study describes how middle schools have adjusted to the pressures of testing and meeting AYP. The purpose of the study was to determine if there have been changes to operational and philosophical practices in Pennsylvania middle schools as a result of mandatory high-stakes testing.

For those educators with a long-term perspective, the question may very well be, "So what happened to the dream of a middle school where the needs of the adolescent learner are first and foremost and where the pressures of tests do not cause us to compromise those needs?" For those educators new to the middle school setting, the issue is whether students' developmental needs or test results should come first when planning instruction.

Research Design and Method

This investigation used an online survey to gather information about effects of high-stakes testing on middle school practices. The survey was designed to target specific practices typically associated with middle schools. These included (1) grouping for instruction (heterogeneous vs. homogeneous); (2)

developmentally appropriate instructional practices (cooperative learning vs. lecture; interactive vs. rote; discovery/inquiry based learning vs. teacher directed instruction); (3) interdisciplinary and integrated curriculum; (4) interdisciplinary teaming and planning; and (5) inclusion of an activity period for interest-based clubs and advising. A final open-ended section allowed participants to make additional comments. The survey was sent to current middle grades administrators and teachers and others associated with middle grades education. Demographics included participants' current role as a teacher, administrator, or other; the number of years in that role; and where applicable, the subject(s) currently taught. In the case of participants who were neither administrators nor teachers, participants identified themselves as school counselors and a psychologist.

The survey instrument was sent as part of an invitational e-mail. Members of the Pennsylvania Middle School Association (PMSA), with a membership of approximately 4,000 individuals (L. Ference, personal communication, March 18, 2010), and approximately 150 attendees of an annual Lehigh University Middle Level Conference received an e-mail inviting them to participate in the survey by clicking on an embedded link. Using this process, 148 people completed the entire survey, while 214 completed specific sections of the survey. (This later group of 214 did not complete the demographic portion of the survey that appeared at the end of the instrument.) Of the 148 who provided demographic information on the survey, 103 were teachers, 41 were administrators, three were counselors, and one was a psychologist. Participation in the study was voluntary, and participants were given the option to exit the survey at any time. Further, they did not have to answer any questions they did not want to answer. The survey was conducted during spring 2008.

Limitations
It should be noted that when asking participants to respond to various questions throughout the survey, some variables exist. One variable for consideration is the length of time a given school has been implementing middle school practices. When asking people to compare middle school practices before and after NCLB, it may be that differences are not only a function of high-stakes testing but also a function of evolving practices and implementation in given schools. All schools and districts in the study offered opportunities for professional development.

It follows that some educators may use different instructional practices as a function of their own professional growth. These educators are surely influenced by NCLB, but changes in instructional practices may likewise be attributable to professional development or peer coaching. Such would be the case in studies dealing with schools where professional development is a routine expectation for educators.

It should be noted that participants were viewed as middle grades educators as a whole. No distinctions were made between responses of administrators and those of teachers. Indeed, this could serve as the basis for a future study.

This study did not include an interview component. The inclusion of interview data may further inform the findings.

Findings

Grouping for Instruction
Heterogeneous grouping practices have traditionally been a hallmark of the middle school movement. In other words, students are not solely grouped by ability. Grouping remains flexible and is determined by the nature of the subject and instructional activity. Heterogeneous grouping takes into account not only the intellectual development of middle grades students but also their social and emotional needs.

Participants were asked to consider whether their school had made changes to the grouping of students in response to high-stakes testing. They were prompted to reply in terms of the grouping practice before NCLB and since NCLB. The question was presented in general terms, as grouping exists in each respective school.

Heterogeneous and homogeneous grouping practices remained about the same when viewed as a whole across all subjects. Heterogeneous grouping before NCLB was 61.2% and since NCLB was 61.0%; homogenous grouping before NCLB was 38.8% and since NCLB was 39%. Results showed virtually no difference in grouping practices at the middle school as a result of high-stakes testing associated with NCLB. Nonetheless, the research design allowed for an expanded look by reviewing grouping practices for specific subject areas. Participants were asked to respond to the nature of grouping for five subject areas both before and after NCLB. The results of this inquiry before and since NCLB are reported in Table 1.

Table 1
Grouping Practices by Subject Before and Since NCLB

Subject Area	Heterogeneous		Homogeneous	
n = 214	Before NCLB	Since NCLB	Before NCLB	Since NCLB
Math	30.7%	30.7%	69.3%	69.3%
Language Arts	61.0%	62.3%	39.0%	37.7%
Reading	54.0%	50.9%	46.0%	49.1%
Science	81.3%	82.7%	18.7%	17.3%
Social Studies	82.6%	85.9%	17.4%	14.1%

Results show that there were no changes in grouping practices in math. One interpretation might be that students continue to be grouped by ability in mathematics. There was a slight increase in homogeneous grouping in reading (from 46% to 49.1%) after NCLB. It can be noted, however, that in language arts, science, and social studies, there were slight decreases in the percentages of students being grouped homogeneously.

The survey instrument provided an opportunity for participants to comment on any of the questions. Partcipants' comments were viewed as a potential gateway to a deeper understanding of responses given to statements or questions. Comments related to math confirmed that students are typically grouped homogeneously (by ability) for math instruction. Additionally, participants commented that remedial classes were available and sometimes mandatory for students scoring at the basic level or below in mathematics on standardized tests. This was also true for reading. That is, remedial classes were provided for students scoring at the basic level or below basic in reading. Comments also revealed that grouping for math determined remediation and homogeneous grouping in other subjects including language arts, science, and social studies classes. In some cases, students were pulled from regular instruction including classes in special areas (e.g., art and music) to accommodate remedial instruction. Overall, the need to provide remediation in reading and math seemed to determine the extent to which students' schedules were modified.

Instructional Practices

Developmentally appropriate instruction has been a key component of the middle school movement. Cooperative learning and a student-centered approach to instruction have become more prominent in middle school classrooms. As noted, young adolescent learners need opportunities to move throughout the day and to interact with peers. Middle grades learners also need to feel accomplished and valued (Alexander & George, 1981).

Effects of high-stakes testing are evident when examining instructional practices in middle schools, both before and after the inception of NCLB. Participants were asked to report the percentage of time they devoted to developmentally appropriate practices associated with classroom instruction at their respective middle schools both before and after NCLB (see Table 2).

Table 2
Instructional Practices in Pennsylvania Middle Schools

	% of time for developmentally appropriate instruction				
	0%–25%	26%–50%	51%–75%	76%–100%	*n*
Instructional practices before NCLB	11.7% (19)	16.0% (26)	33.7% (55)	38.7% (63)	163
Instructional practices since NCLB (2008)	14.0% (23)	23.2% (38)	31.1% (51)	31.7% (52)	164

Participants reported greater percentages of time being devoted to developmentally appropriate instructional practices before NCLB. For example, 38.7% reported using developmentally appropriate instructional practices 76% to 100% of the time before NCLB. Since NCLB, the percentage dropped by 7%.

A closer look at specific developmentally appropriate instructional practices revealed similar results. The use of specific developmentally appropriate instructional practices decreased after NCLB and related high-stakes testing (see Tables 3, 4, and 5) for the highest categories

(51%–75% and 76%–100%). Discovery and inquiry learning decreased by 5.7% and 2.6%, respectively, for the two highest categories. The perceived changes in peer grouping and classroom movement dropped from 2.7% and 0.7% for the two highest categories. Teachers reported a decline of 6.1% and 3.1% in the use of cooperative learning for the two highest categories. Conversely, in the two lowest categories (0%–25% and 26%–50%), these percentages increased. Stated differently, throughout the instructional day, there was less use of developmentally appropriate instructional practices once high-stakes testing was in place.

Table 3   *Use of Discovery/Inquiry Learning*

	% of time spent on discovery/inquiry learning in the classroom				
	0%–25%	26%–50%	51%–75%	76%–100%	*n*
Instructional practices before NCLB	27.0% (44)	26.4% (43)	35.0% (57)	11.7% (19)	163
Instructional practices since NCLB (2008)	30.5% (50)	31.1% (51)	29.3% (48)	9.1% (15)	164

Table 4   *Use of Integrative Groups and Movement*

	% of time spent on having students interact with peers and move around classroom				
	0%–25%	26%–50%	51%–75%	76%–100%	*n*
Instructional practices before NCLB	25.2% (41)	27.0% (44)	30.1% (49)	17.8% (29)	163
Instructional practices since NCLB (2008)	26.8% (44)	28.7% (47)	27.4% (45)	17.1% (28)	164

Table 5   *Use of Cooperative Learning*

	% of time spent on the use of cooperative learning strategies				
	0%–25%	26%–50%	51%–75%	76%–100%	*n*
Instructional practices before NCLB	25.6% (42)	27.4% (45)	29.3% (48)	17.7% (29)	164
Instructional practices since NCLB (2008)	25.6% (42)	36.6% (60)	23.2% (38)	14.6% (24)	164

When asked about specific instructional approaches in classes with a state-mandated testing program, participants reported a dramatic increase in the use of teacher-directed instruction including drill and practice. Participants also commented that flexible grouping is being used with students to address specific weaknesses as revealed through tools such as the 4Sight test (Success for All, 2008) and Study Island (Study Island, 2009). Time needed for remediation was taken from extended homerooms, extended core classes, activity periods, or even team planning time and turned into added instructional time.

Nature of the Curriculum

To this point, results of this study have centered on grouping and developmentally appropriate instructional practices, which are related to the curriculum or program of study. A third aspect of the study focused on the actual curriculum. Middle school curriculum was intended to be broad and exploratory in nature and take into account young adolescents' needs to explore their world as they gain insights into who they are and how they fit into their environment (Eichhorn, 1966; Lounsbury, 1984). "Every student should have access to a rich variety of exploratory experiences, both required and elective" (Lounsbury & Vars, 1978,

p. 41). Compton (1984) noted, "Middle schoolers should have an opportunity to make some choices in their curriculum. They should be provided with a choice of activities, which will satisfy particular personal goals" (p. 73). Ravitch (2010) expressed her dismay that a broad curriculum was sacrificed along the road to NCLB. "It [NCLB] demanded that schools generate higher test scores in basic skills, but it required no curriculum at all, nor did it raise standards. It ignored such important studies as history, civics, literature, science, the arts, and geography" (pp. 15–16).

The overall nature of the curriculum was the subject of the remaining questions in the survey. Participants responded with their impressions of the curriculum before and since NCLB went into effect. Before NCLB, the participants reported that the curriculum was broad and exploratory in nature and consistent with adolescent needs to explore their world as evidenced by higher percentages (see Table 6). Since NCLB, there has been an increase in attention to those subjects being tested on the state test. Participants indicated that the curriculum has a narrow focus on high-stakes tested subjects (see Table 7). According to the participants, interdisciplinary curriculum and an integrated approached to instruction appeared to be waning (see Table 8).

Table 6
Nature of Curriculum Before NCLB

n = 157	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Broad and exploratory in nature	4.4% (7)	13.3% (21)	12.7% (20)	51.3% (81)	18.4% (29)
Consistent with the adolescent need to explore and discover	2.6% (4)	14.7% (23)	10.9% (17)	54.5% (85)	17.3% (27)
Similar to the way it is since NCLB (2008)	13.5% (21)	34.6% (54)	12.8% (20)	30.8% (48)	8.3% (13)

Table 7
Nature of Curriculum Since NCLB

n = 157	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Has a narrow focus on high-stakes, tested subjects	7.0% (11)	26.1% (41)	5.7% (9)	36.9% (58)	24.2% (38)
Has limited the time we spend in special area subjects (e.g., art, music)	14.7% (23)	29.5% (46)	8.3% (13)	28.8% (45)	18.6% (29)
Has not changed	27.7% (43)	41.3% (64)	16.1% (25)	11.6% (18)	3.2% (5)

Table 8
Nature of Curriculum

n = 146	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
In our school, we currently do not use an integrated approach to instruction	41.5% (21)	34.5% (50)	7.6% (11)	31.0% (45)	11.0% (16)
In our school, we currently use more direct, subject-specific instruction that better prepares students for standardized tests	2.7% (4)	13.7% (20)	6.2% (9)	51.4% (75)	24.7% (36)

Participants' Comments

At the end of the survey, participants had the opportunity to add additional comments. No conditions were placed on the types of comments made. The majority of comments focused on the frustrations and concerns educators experience as a result of high-stakes testing.

Test preparation. One educator shared that, "The dominance that test prep has had on our curriculum and our children is the only thing that's ever made me consider leaving the profession." Similarly, another teacher noted, "Increased testing and test preparation means that we have less time to actually teach engaging and interesting material that would leave a lasting memory on the student." Such comments were representative of those who participated in this study.

Change in focus. Another participant expressed, "I believe that high-stakes testing has limited my time as an educator to include discovery learning and enrichment activities in class. I use most of my 'extra' time to practice for the PSSA test." Yet another commented, "I am worried that the 'middle school model' will go by the wayside as the focus on testing continues. I am so swamped with paperwork that doing anything new is rare. The kids will suffer in the long run." Another wrote, "We are beginning to see erosion of student-centered curricular concepts and practices." A final comment captures the essence of many of the comments. "We have become content driven instead of kid driven."

Discussion

Initial findings suggest that middle grades instructional approaches and activities may have been compromised based on a shift toward more standardized test preparation. Pedagogical changes

are supported by participants at the end of the survey. Data from this study shows that educators are frustrated with the amount of time being devoted to test preparation and testing. They feel that they have lost opportunities to be creative and flexible and are currently employing more directed, teacher-led instruction. In view of this, educators must decide how best to balance the demands of testing and test results with the developmental needs of adolescent students.

Findings generally reflect movement away from middle school best practices; attention to the learner is being replaced by attention to the test. Nonetheless, the data showed that some middle school teachers find ways to maintain a balance between the demands of testing and the needs of the young adolescent learner. The following recommendations capture some ideas for consideration.

Recommendations for Practice

When considering how best to balance testing and student needs, it is recommended that educators continue to support developmental needs of students while at the same time taking steps to help them be successful in testing situations.

1. It is still possible to develop and implement integrated units of study as well as interdisciplinary approaches to the curriculum. The difference might simply relate to scope and frequency. Given time needed for test preparation and remediation, there may be opportunities to organize and implement cross-curricular activities.

2. Child advocacy groups (e.g., advisory groups) should be implemented or continue. These, however, may need to be balanced with remedial classes scheduled during the same time period.

Again, it may become a matter of frequency that these groups meet rather than elimination of this middle school practice.

3. Grouping for instruction may take on all forms (i.e., homogeneous, heterogeneous, small and large groups, flexible groups); however, perhaps not in every class on every day. Such flexible grouping practices must be maintained as a means for addressing learning styles and the needs of young adolescents.

4. Developmentally appropriate instructional practices including cooperative learning, inquiry approach, and opportunities for movement and interaction during class time should be continued, as they are beneficial to student needs. Direct instruction may be on the rise; however, test preparation and remediation can be addressed using multiple approaches more appropriate for middle school students.

Overall, recommendations for practice become a function of one primary factor—balance. Educators might explore approaches that take into account a balanced approach that weighs test preparation and developmentally appropriate instructional strategies. Further, the use of developmentally appropriate instructional practices for test preparation and remediation is not out of the question. Educators who subscribe to middle school philosophy and practices will find ways to connect with their students in meaningful and lasting ways, because they understand the special qualities, interests, and behaviors of their students. Dedicated middle grades educators will continue to engage their students in a productive and inviting learning environment.

Closing Thoughts

It was interesting to note that among the participants who responded to the survey, most had 20 or more years of experience as middle school educators. In general, the effects of high-stakes testing appear to have created many frustrations for those in middle schools. Experienced educators, both teachers and administrators, recognize the dilemma of meeting the developmental needs of adolescent learners while satisfying the requirements for student performance on high-stakes tests.

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Author's Note

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