

# The Effects of Middle School Teachers' Beliefs on Classroom Practices

Catherine M. Brighton

*The students in 21st-century public middle schools are increasingly diverse in terms of language proficiency, cultural and ethnic representation, and varied levels of poverty; and, yet, they are being educated in a political climate that encourages mainstreaming special education and gifted services in the regular classroom. Given this context, this study sought to examine 48 middle school content-area teachers' beliefs about teaching in diverse classrooms to determine how these beliefs affected their willingness and capacity to differentiate their instruction and assessment. A qualitative study design incorporating grounded theory methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1990) was employed. Four teacher beliefs emerged from interview, observation, and document data that conflict with the philosophy undergirding differentiation. Each belief is presented with supporting evidence from the data and discussed in terms of its relationship to effective differentiated classroom practices.*

## Introduction

Twenty-first-century public middle schools face challenging circumstances: increasing cultural and ethnic diversity of the American student population, many classes populated with limited-English proficiency (LEP) students, and political and educational pressures to mainstream exceptional learners (i.e., handicapped and learning disabled, as well as students identified as gifted). Educators representing general education (Zemelman, Daniels, & Hyde, 1998), as well as current middle school leadership (Carnegie Council on Adolescent Development, 1990; Jackson & Davis, 2000; National Middle School Association, 1995), recommend a shift to heterogeneous classes wherein teachers differentiate for varied students' needs through "inherently individualized activities not the segregation of bodies" (Zemelman et al., 1998, p. 5). Incorporating these recommendations means that gifted services are delivered in the general education classroom. As a result, it

---

Catherine M. Brighton is Assistant Professor at the University of Virginia, Charlottesville, and a coprincipal investigator for the National Research Center on the Gifted and Talented, Storrs, CT.

*Journal for the Education of the Gifted*. Vol. 27, No. 2/3, 2003, pp. 177-206. Copyright ©2003 The Association for the Gifted, Reston, VA 20191-1589.

becomes even more critical that general educators become proficient at addressing the needs of a range of students, including the gifted.

At the same time that students in American middle school classrooms become more diverse and teachers are expected to address these learners' needs within their classrooms, pressures to standardize the curriculum and raise student achievement (evidenced by acceptable scores on standardized tests) increase. The challenge to teachers lies in learning to recognize and address the academic diversity of learners while still meeting benchmark goals set by school districts and state-level agencies. Accomplishment of this formidable task requires the reexamination of current instructional practices and assimilation of new practices more aligned with addressing student diversity and ensuring sufficient challenge for all students. In short, this task requires changing teachers' beliefs about the nature of schooling and their resulting classroom practices.

### *Inviting Change in Teachers*

Changing what goes on in schools has been a topic of discussion among educators and noneducators alike since the beginning of public education (Tyack & Cuban, 1995). There are many different approaches to enacting school change, such as changing the organization in an attempt to change the individual teachers (Elmore, Peterson, & McCarthey, 1996) or changing the individual teachers in an attempt to change the larger school organization (Bandura, 1977; Berliner, 1988; Hall, 1985). Regardless of which perspective is advocated, scholars of educational change agree on several points. First, change is complex and multifaceted (Fullan, 1991, 1993); no one element seems responsible for the success or failure of any efforts (Fullan & Hargreaves, 1992; Gold, 1999). Second, systemic and sustained change requires extended time for realization, implementation, and actualization (Fullan, 1991). Third, change can be positively and negatively affected by specific factors (Fullan, 1991, 1993; Gersick, 1991; Gold, 1999; Kanter, 1983).

Current literature on educational change places much less emphasis on the impact of internal factors (e.g., teachers' beliefs about teaching and learning) on the success of change efforts than on the importance of external factors (e.g., structure of the organization, attributes of the change agent) imposed upon the individual or organization. Despite the underrepresentation in the current literature of the effects of internal factors on school and teacher

reform, some argue that they are significant factors in the change process (Betts & Frost, 2000; Franke, Carpenter, Fennema, Ansell, & Behrend, 1998). To add another voice regarding the role of internal factors, the author of this study had two purposes:

1. identify and describe middle school teachers' beliefs about teaching and learning in diverse classrooms, and
2. determine how those beliefs affect teachers' willingness and capacity to change their instructional and assessment behaviors to attend to student academic diversity more effectively.

*Internal Factors That Shape Change Efforts.* While not completely absent, educational change literature places less emphasis on factors within individual teachers as significant determinants in change efforts. Scholars who examine internal factors assert that, even given uniform external conditions, teachers' individual responses to innovations vary (Cuban, 1993; Franke et al., 1998). These variations rise from teachers' diverse knowledge bases, conceptions, beliefs, experiences, and assumptions about teaching and learning; the nature of their school; and the role of the teacher (Guskey, 1988). Four factors emerge from the literature as prominent forces that may shape teachers' willingness to change.

One factor believed to shape teachers' responses to new innovations is each teacher's personal history (Cohen, 2001; Cuban, 1993). Personal histories are described as teachers' success and failure experiences as learners, the teaching models experienced as students, and their collective understandings about the world. It is suggested that these histories (a) shape the selection of elements of a change process accepted by teachers and (b) determine how these elements are incorporated into teachers' existing cognitive frameworks. In largely theoretical, nonempirical pieces, several scholars have concluded that teachers' personal histories influenced their interpretation of new ideas (Cohen, 2001; Cuban, 1993; Duke, 1993; Guskey, 1988):

Teachers and students who try to carry out such change are historical beings. They cannot simply shed their old ideas and practices like a shabby coat and slip on something new. Their inherited ideas and practices are what teachers and students know, even as they begin to know something else. Indeed, taken together those ideas and practices summarize them as practitioners. As they reach out to embrace or invent a new instruction, they reach with their old professional selves, including all the ideas and practices comprised therein. The past is their path to the future. (Cohen, 2001, p. 460)

A second factor believed to affect teachers' responses to new innovations is the level of knowledge teachers possess about the content they are assigned to teach. While little empirical evidence links teachers' knowledge of content with demonstrated student achievement and learning (Ball, 2000), one could hypothesize that teachers are less effective when teaching concepts that they themselves have not fully mastered. Therefore, it seems to follow that teachers underprepared in an assigned content area may be ineffective in correcting students' misunderstandings, filling gaps in mastery of skills and concepts, and correcting general confusion. In an analysis of elementary mathematics classrooms, Betts and Frost (2000) suggested that teachers' incomplete or limited content knowledge in mathematics can lead to at least four possible consequences: (a) teachers rely more heavily on textbooks as the sole provider of information about the content, (b) teachers are less sophisticated about determining mastery of skills and concepts, (c) they send incorrect or inconsistent messages about math that may promote math anxiety in students, and (d) teachers with their own misunderstandings may transmit erroneous understandings critical for the students' future development in the area of mathematics.

A third factor potentially affecting a teacher's ability to change is his or her facility with pedagogical content knowledge. Highly intertwined with a teacher's knowledge of content is the ability to make sound pedagogical decisions about communicating the information to learners. A prevailing, erroneous assumption is that effective teaching strategies are not specifically interrelated to content. Meredith (1995) described dire implications of subscription to this assumption. Because teachers may lack sufficient content knowledge, they rely heavily on textbooks to support them and, therefore, lack sophistication of knowledge to identify and correct either text content errors or ineffective text-directed activities.

In the absence of sufficient pedagogical content knowledge, teachers cannot incorporate strategies that are inquiry driven or constructivist in nature, be proactive in leading discussions, or anticipate and head off students' misconceptions (Ball, 2000; Betts & Frost, 2000; Meredith, 1995). An additional consequence of teachers' deficient pedagogical content knowledge is their inability to address student academic diversity during instruction:

Contending effectively with the resources and challenges of a diverse classroom requires a kind of responsibility to subject matter, without which efforts to be responsive may distort students' opportunities to learn. Moreover, the creativity entailed in designing instruction in ways that are attentive to difference

requires substantial proficiency with the material. (Ball, 2000, p. 242)

Fourth, teachers' self-efficacy and individual beliefs about their competence relative to content, their students, and the specific reform effort influence their willingness and ability to change. In his study of elementary and secondary teachers, Guskey (1988) examined the relationship between teachers' self-efficacy and their attitudes about one new instructional innovation: mastery learning. He found a strong relationship between teachers' self-efficacy and their receptivity to the new instructional practices. Teachers identified as possessing a high level of personal efficacy were significantly more open to the new approaches than their less-efficacious colleagues. In this quantitative study, the internal factors of teachers' self-efficacy, as well as their beliefs and attitudes toward the innovation, emerged as influential factors in their willingness to change their instructional practices.

In another study examining the importance of internal factors and teachers' responses to new innovations, Franke et al. (1998) considered teachers' conceptions of teaching and learning as they related to mathematics instruction. In case studies of three primary-grade teachers who differed in their responses to a new mathematics innovation, the authors attributed the three teachers' different responses to the factor of teachers' conceptions of teaching and learning.

In conclusion, the literature suggests that internal factors, including teachers' personal histories, knowledge of content and pedagogy, self-efficacy, and beliefs about the innovation are worthy of consideration when undertaking a new innovation. Hence, in studying the new proposition that teachers can address multiple academic needs in diverse classrooms with appropriate training, it seems warranted to address two specific research questions:

1. What are middle school teachers' beliefs about teaching and learning in diverse classrooms?
2. How do these beliefs affect teachers' willingness and capacity to change their practices to attend to students' academic differences?

## **Methods**

The study data were gathered as part of a larger study conducted by the National Research Center on the Gifted and Talented (NRC/GT) at the University of Virginia. The Feasibility of High-

End Learning in the Diverse Middle School (Brighton, Hertberg, Moon, Tomlinson, & Callahan, in press) was a 5-year federally funded study that examined the feasibility of providing high-level instruction for all students, including gifted, struggling, minority, and limited-English proficient students, within diverse middle school classrooms. The present study employed a qualitative research design built on an interpretivist conceptual framework. From this point of view, researchers consider both words and actions in terms of the meanings they provide. "To find meaning in an action, or to say one understands what a particular action means, requires that one interpret in a particular way what the actors are doing" (Schwandt, 1989, p. 191). Teachers', administrators', and students' words and actions were examined to determine the meanings assigned to them by the individuals involved in the exchange. The study sought to determine teachers' beliefs about addressing academic diversity by examining interview data, as well as teachers' and students' actions that occurred in the school context.

### *Selection of Participants*

Four middle schools in two states volunteered to participate in this study. Within each middle school, the principals were asked by project staff to select one team of teachers per grade level to participate. Principals in each of the four project schools approached the selection of teachers differently. In one school, the principal identified specific teachers to participate in the project in an attempt to use the study-related professional development and coaching as a part of an informal intervention plan for novice or struggling teachers. In three schools, the principal solicited teacher volunteers to participate in the study and honored teachers' decisions about their level of involvement. In addition to teacher participants, a stratified sample of students from target teachers' classrooms, including students identified as gifted and talented, was drawn. These students represented a variety of socioeconomic and achievement levels; differed in terms of school success; and were diverse in terms of race, culture, and gender. At one site, students with varying degrees of language acquisition were also included. Because of high transition among students at some sites, new students were selected to participate each year. Within the sample of participating teachers, theoretical sampling procedures were employed. Following the ideas noted in the literature of teacher change, particular teachers representing varied years of

experience, educational backgrounds, and those identified by administrators as effective instructors were specifically targeted for participation. Theoretical sampling procedures help the researcher "generate or discover a theory or specific concepts within the theory" (Creswell, 2002, p. 196).

### *Data Collection*

All teachers who participated in the project received intensive professional development experiences over 3 years to increase their knowledge and skills regarding differentiating instruction and assessment in heterogeneous middle school settings. In addition to twice-yearly direct instruction on differentiated instruction and differentiated performance assessment, these target teachers participated in monthly coaching sessions conducted by project staff that focused on the philosophy and practices of differentiated instruction and assessment in their classrooms. While the exact frequency varied depending on the site, all teachers were observed and interviewed approximately once per month for 3 consecutive school years. Additionally, the participating students were interviewed approximately four times per year in individual interviews and in a focus-group format. Building-level administrators were interviewed approximately one time per year. Primary data sources used to address the research questions were teacher interviews and classroom observations, which were triangulated with secondary data sources: student interviews, teachers' planning and instructional materials, student work products, and administrator interviews. In accordance with grounded theory methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1990), greater emphasis was placed on verbatim transcripts than other sources of data, which more naturally facilitated the development of theory. "Researchers rely on interviews to best capture the experiences of individuals in their own words" (Creswell, 2002, p. 457). Semistructured interview protocols were used to organize and guide the interviews with teachers, students, and administrators; and classroom observations were recorded in a verbatim script format.

### *Data Analysis*

To increase the credibility and trustworthiness of the findings, the researchers embedded specific activities into the data collection and analysis scheme. These activities included prolonged engagement in the four participating schools to increase researchers'

understanding of the school and classroom context, persistent observation and interviews with the same participants over time to avoid drawing conclusions from situational responses, providing opportunities for teachers to clarify and explain their responses from interviews to avoid drawing conclusions from data out of context (member checking), triangulating the various data points from other sources collected at the site, and systematic debriefing among the various research team members at regular intervals.

Data were analyzed using a systematic grounded theory approach that included three levels of data coding: open coding, axial coding, and selective coding with a constant comparative method of data analysis (Glaser & Strauss, 1967; Strauss & Corbin, 1990). In the first months of the project, the emphasis was focused on data collection alone. After the first rounds of transcriptions were completed, the data were concurrently analyzed and collected, and questions and inconsistencies from the analyses informed the following round of data collection at each site. While separate research team members collected and analyzed these data, I served in both capacities (as observer/coach and as data analyst) and managed the data collected at all sites. Monthly meetings of the research team members ensured adequate communication among all individuals in the process.

During the open coding phase of analysis, the transcribed interviews, observation transcripts, field notes, and other varied documents were read for the purpose of determining open, general categories that described, conceptualized, and categorized the data. After reading each observation and interview transcript initially for general comprehension, a more careful, second read was conducted during which each notable incident, idea, belief, action, or some combination of these was marked. Consistent with grounded theory methodology, the open coding of raw data yielded initial category descriptors that were eventually collapsed into fewer, but more prominent, encompassing themes. Examination and analysis of these themes revealed patterns of similarities across teachers and sites and provided insight into teachers' beliefs about teaching and learning. It was at this axial phase of analysis that subcategories were collapsed into more encompassing themes and supported with quotes and anecdotes from across teachers and sites. At the final stage of analysis, the selective coding phase, four prominent teacher beliefs emerged, all of which had significant implications for teachers as they attempted to challenge diverse learners in their classrooms. For the purposes of presentation, each belief is presented along with supporting quotes from observers' field notes,

teacher interviews, and student focus groups. References following direct quotations include the data source, school or teacher pseudonym, the year in which the data were collected, the number of the document in chronological order, and the page number where the verbatim quote can be located.

## **Findings and Discussion**

### *Teachers' General Beliefs About Teaching and Learning*

Throughout the project, teachers frequently expressed approval and support for addressing academic diversity. Many teachers believed that the professional development and coaching they received filled an identified need for growth and were in alignment with their beliefs and images about the way a middle school classroom should look.

Okay, this is what I am missing exactly. That is why, when the administration came and the administrator . . . they asked us to do this, I thought, "Oh, God, this is exactly what I need. This is what I've been searching for." So, to me it was a missing link of something I knew I needed. I just didn't know what it was or what it was called. (Teacher interview [Snowe], Y3, #7, p. 9)

I am very interested [in differentiated instruction] because I can see how it can be so good, but I don't know that I have the skills. . . . I want to do it and I'm trying. How I try to diversify now. . . . I'm working on creating different types of lessons based on some of the things you all have said, as well as things I thought I might do well. (Teacher interview [Talbot], Y1, #2, p. 4)

Often, teachers believed they already incorporated the classroom practices they heard described in professional development sessions. In the cases where teachers recognized that they had not yet implemented the ideas, many believed the new practices were aligned with their (then) current methods, simply more refined and structured versions of the old.

But you know, it is amazing. It [the use of differentiated performance assessment] is not really new. With me, we called it projects, assignments, or whatever. New labels on things that we have done before and that is good because you usually refine them. And sometimes just even giving it more structure makes

it more [useful] . . . you may have used for years [but] it wasn't really specific. (Teacher interview, [Johannes] Y3, #1, p. 3)

However, despite their stated positions, a significant gap existed between teachers' verbal enthusiasm and the practices observed and discussed in their classrooms. This chasm seemed filled with teachers' deeply held beliefs about the nature of middle school, the role of teacher in the middle school, and students' natural proclivities toward challenging learning. Often these beliefs were not aligned with, and in many cases were in direct conflict with, the underlying philosophy of addressing academic diversity—the purpose of differentiation. Four prominent teacher beliefs that most significantly conflicted with the changes proposed in the classroom are presented and examined in relationship to recommended practices for addressing students' varied needs in the diverse middle school classroom. Table 1 provides a summary of teachers' beliefs and the intersecting recommended practices.

*Belief 1: Teacher is an entertainer.* Some study participants seemed to believe that the role of the teacher in the middle school was to entertain students. Jennifer Snowe, a seventh-grade science teacher, explained her beliefs about teaching and student engagement to an interviewer. She saw teaching as entertainment and, consequently, the role of the teacher was to be an instructional entertainer.

I try to make things as interesting as possible for them. I try to never be boring. It's a zipper generation for these kids. They have a hundred channels at the flick of a hand when they get home. And if I'm not entertaining to them, then forget it; they are going to tune me out and my class is going to be boring. So, I try to be challenging and entertaining. I try to challenge them, yet not be boring. You can be challenging, and you can be boring. (Teacher interview [Snowe], Y3, #7, p. 5)

She seemed to fear what might happen to the learning if the activities ceased to entertain. She seemed to suggest that, if she failed to sustain the entertainment, students would shut her out and resist her intended learning. Her choice of word, *entertainment*, seemed significant. It suggested a belief that engaging learning needs to be sugarc coated in order to make the process more palatable. Ms. Snowe explained that this view of learning and entertainment was a result of her own personal history as a learner.

I was a hyperactive kid. I needed to be entertained, too. I know what that's like. So I guess I have a tendency to remember that

Table 1

### The Gap Between Recommended Practices and Teachers' Interpretation

Recommendation for practice	Teachers' beliefs that interact with recommended practices
<i>Teachers should strive to create student-centered classrooms and learning communities</i> (Erickson, 2002; Kaplan, 1974; Tomlinson, 2001).	<i>Belief 1: Role of the teacher is to entertain.</i> Entertaining and engaging students is more critical, at least initially, than challenging them. In order to manage middle school students, teachers seem resigned to surrender challenge in order to find tasks that seem familiar, relevant, and engaging.
<i>Teachers should assume the role of facilitator in the classroom</i> (Kaplan, 1974; Tomlinson, 1999).	<i>Belief 2: Teaching is talking, listening is learning.</i> Teachers are hesitant to allow mobility and independence to students for fear of deviation from the intended activity and off-task behavior and management problems that may ensue as a result. Further, teachers feel responsible for ensuring that all students, even the gifted, have exposure to required learning standards and objectives for fear of negative repercussion on high-stakes tests.
<i>Teachers should teach for success for all learners in the classroom</i> (Tomlinson, 2001).	<i>Belief 3: Academic struggles result in students' resistance and shutting down.</i> Teaching for success means avoiding students' struggles. Struggle seems to connote a foreshadowing of task abandonment.
<i>Teachers should be focused on clear goals and objectives for each learning task</i> (Erickson, 2002; Tomlinson, 2001; Wiggins & McTighe, 1998).	<i>Belief 4: Equity and fairness necessitates that all students do the same things the same way.</i> If all students don't have the chance to do the same thing, then students will complain that it's not fair.
<i>Teachers should provide options for students that reinforce multiple learning modes and individual preferences</i> (Jackson & Davis, 2000; Kaplan, 1974).	<i>Beliefs 2 @ 4: Teachers can't depend on students to opt for a harder task; that's not fair to penalize them with lower grades when other peers selected easier tasks.</i> A range of activities that may be provided for students will be of equal levels of difficulty, but vary in terms of product choice or materials used. If a teacher provides choices on differing levels of difficulty, all students will intuit which task is the easiest and complete only that.

feeling. I am still like that. Plus I—like, this sounds kind of selfish—but I like to entertain myself, too. I don't want to do the same thing every year. I don't want to pull the same lessons and say, "Oh, I will do this today." I have to be entertained, and it entertains me to do to that. (Teacher interview [Snowe], Y3, #7, p. 10)

It is important to acknowledge that the teachers, including Snowe, seemed genuine in their pursuit of learning beyond the initial engaging invitation. They seemed convinced, however, that learning could not occur without disguising the rigor and work required, and they often seemed to lose the intended substance in the dressing. Teachers' explanations of activities made little distinction between entertainment and meaningful engagement. Researchers posit that engaging learning experiences do, in fact, increase the likelihood of student involvement and deeper understanding (Csikszentmihalyi, Rathunde, & Whalen, 1997; Lipsitz, 1984); yet, teachers' misunderstandings often resulted in high-engagement activities for students that lacked a meaningful purpose or objective. Teachers sought to create activities that captured student interests without specific consideration of or alignment with instructional objectives.

What I normally use—I use the textbook as my main resource, and now that we have access to the Internet, I will see what I can find on the Internet that will fit right into it and try to incorporate everything into that lesson. Then I want to put something in there to try and make it fun and interesting to the students. I know there's some things that they. . . . I can sit them here and give them notes all day, but then they will get bored or whatever. So, I have got to do something to try and make it fun and keep it interesting for them. (Teacher interview [Winston], Y1, #1, p. 2)

Teachers in this study believed that appearance mattered. For instance, the appearance of the classroom when evaluating student work often weighed as much or more than substance. When asked by an observer about student projects displayed in her room, a teacher exclaimed, "Aren't they gorgeous" (Observer field notes [Armstrong], Y2, #2, p. 7)? She never returned to the substance, purpose, or connection of the projects (make a model of some aspect of the assigned Native American tribe) to a bigger teaching objective.

Another teacher reflected on the external appearance of an

assignment. Again, she never discussed the content or substance of the work, merely the projects' collective appearance.

Well, some of the parents, if I see them in different places . . . [tell me] how much they enjoyed [these projects]. And they're all over my room, and they love seeing them up there [in the window] with the light coming through. . . . They're in the hall. They love to see their work on display. . . . And even ones that are not "perfect" still look nice enough that the kids are proud to have them out there. (Teacher interview [Johannes], Y2, #1, p. 6)

Embedded into the approaches of differentiated instruction and differentiated performance assessment is the belief that students will begin to develop skills that allow them to initiate and monitor their own learning experiences and to make connections between concepts in various disciplines (Moon & Callahan, 2001; Tomlinson, 1999). While it is appropriate to provide instructional activities and performance assessments with multiple entry points to address students' interests and learning profiles, of paramount importance is the clarity and focus of the overarching objectives. With many teachers in this study, this essential point was overshadowed by a greater need to sustain entertainment.

In order to create classrooms supportive of meeting a variety of learners' needs, teachers should strive to create student-centered classrooms and learning communities (Beane, 1993; Erickson, 2002; Kaplan, 1974; Tomlinson, 2001). Embracing this philosophy, teachers would seek to incorporate tasks that are relevant to their learners as individuals, are developmentally appropriate, inviting, and inspire the students to become independent, self-directed learners. While teachers' conflicting beliefs about the importance of entertainment in the learning process may hinder their ability to create fully child-centered learning communities, a second prominent belief also surfaced.

*Belief 2: Teaching is talking; listening is learning.* Through observations and interviews, teachers revealed deeply held beliefs about teaching and learning that suggested a traditional approach to school. For instance, for many teachers, the role of the teacher was to direct the instruction for students, which translated into the teacher doing most of the talking. Teachers seemed to believe that teaching meant that the teacher did the bulk of the work in the classroom, processing the information for the students, posing the questions, and controlling the pace and direction of the instruction.

An observer described a frequently familiar scenario where the teacher did most of the talking and, consequently, most of the analysis of the content.

Actually, most of the material analysis was completed by the instructor. This is not surprising considering that exploring the concept of political protest was only a fraction of the lesson. If the remaining content was to be covered, the teacher had to be the active participant in the lesson. (Talbot classroom observation, Y1, #3, p. 5)

An observer described a teacher-directed sixth-grade reading classroom where the teacher asked the questions and frequently answered them, leaving students to listen silently to her do the work.

Ms. Johannes continues to use the overhead and asks the students to replace the object nouns with pronouns. . . . The method is question, wait time, call on a single student for a response, validate the response and review it or ask for a different response, validate that one and review the lesson, or continue asking until a student is able to respond correctly. . . . When she reviews, she does not ask the students to provide the pair, she simply reminds them of the pair. . . . The second review item is the use of commas. Ms. Johannes asks a question citing a sentence from the quiz and then answers it herself. (Johannes classroom observation, Y1, #1, pp. 3–4)

Some teachers simply wanted a monologue—their voice was the only one that needed to be heard or even counted. All too frequently, observers described scenarios where teachers penalized students for talking with each other during instructional experiences. As a result, classrooms seemed entirely focused on the teacher talking or silent completion of independent work: “Mine is the only voice I want to hear, and I hear voices other than mine” (Field notes—Observation [Borden], Y3, #7, p. 4). An observer described a visit to Ms. Borden’s seventh-grade science classroom where the teacher was the ultimate authority, did most of the talking, and controlled all of the classroom elements.

The nonverbal behavior of Ms. Borden is quite intimidating. . . . Pervading her classroom is this need for control, for considering herself the authority on what is going to go on in her classroom and with her students. She is interested in high structure, complete control, and an autocratic approach to learning. (Borden classroom observation, Y3, #6, p. 1)

Through the course of the study, in order to implement differentiated instruction fully, teachers were challenged to consider an alternative classroom image: child-centered classrooms where students initiated learning experiences and self-monitored their own progress. Often, this classroom image seemed to contrast with the traditional view of school that teachers assumed. By increasing the level of freedom and independence for students, thus reducing the amount of direct instruction and lecture, teachers suddenly felt that they were not doing their jobs.

I feel like I am just doing nothing. I feel like all I do is watch them and try to encourage this or that, but I just . . . I just feel like I'm lazy. I feel like I'm getting paid just to watch them learn, you know, without really doing anything about it. (Teacher interview [Armstrong], Y2, #5, p. 12)

This new role of teaching felt uncomfortable to Armstrong and others, perhaps because it required some relinquished control over elements of the instruction and classroom environment.

Associated with the belief that teaching equals talking is the belief that listening to teachers equals learning. Teachers seemed uneasy with the notion of children learning on their own without the teacher explicitly delivering the information to them. Consequently, teachers faced with mounting accountability pressures felt uncomfortable trusting students with their own learning.

They seem to be enjoying themselves more than if I'm up front, you know, discussing. . . . I think that what we're doing now in language arts is different in the way that it's exposing them to a lot more than I could ever expose them to. . . . A lot of things that I would have never thought to expose them to, I mean, that's the only difference—I don't know how it's going to be when it comes test time next week, to see if they know the elements of a folktale and what makes a folktale different than a myth. (Teacher interview [Armstrong], Y2, #5, p. 14)

Other teachers remarked explicitly, "I can't always count on them to get what I need and to get from independent activities and independent reading; so, as a result, we all need to do it together" (Howard observer journal [Talbot], Y3, #16, p. 6). This pervasive belief resounded. In order to prepare students adequately for the test, teachers believed that they needed to use lockstep, teacher-directed instruction. "I have to be sure that every student has actually heard and dealt with everything . . . and independently . . .

I can't depend on that with a lot of independent work" (Teacher interview [Talbot], Y3, #7, p. 1).

Those teachers who recognized the need for increased student ownership of the learning experience and, consequently, relinquished teacher control, made more growth relative to the innovations than teachers who retained their traditional beliefs about the nature of teaching and learning. One teacher explained how he continued to battle his traditional views:

This is the first year I've gotten to a point where I've learned how to allow students to self-assess themselves. I've been one of those people that wanted to hang on to the assessment. I don't want to let them have any freedoms. I will let them choose some assignments, but that is about the extent of their freedom. I don't want them to come up with how to grade it. I don't want them to come up with what they want to do. Again, a lot of students, even the good students, want to be told structurally how to do things. Cross every *t*, dot every *i*. That is the way I was taught, and that is the way I am. I am the person who has to have exactly what I want to do. . . . I have to change my mode of thinking to allow students to change their mode of thinking. That is where I am at. I've not gotten to a point where I feel 100% comfortable doing some of the things that I've done. (Teacher interview [Boxer], Y3, #4, p. 12)

Meeting academically diverse learners' needs requires teachers to create flexible classrooms where the learning process is negotiated—sometimes between the students and the teacher, sometimes between small groups of students, and sometimes individual students make sense of ideas independently (Kaplan, 1974; Tomlinson, 1999, 2001). This new image of the teacher as a facilitator conflicted with teachers' existing, deeply held beliefs about their role in the classroom and was difficult to change. While some teachers raised legitimate concerns about their difficulties in managing students' behavior in more child-centered classrooms, these were not the ones who were most resistant to the new classroom images. The most resistant teachers seemed to be more highly structured, effective managers of classroom elements, who, for whatever reasons, resisted relinquishing control. Further, because many of the teachers in this study faced consequences from high-stakes tests, they felt compelled to hold the reins tightly in the classroom. These teachers seemed to believe that all students, including the gifted, needed to have the same exposure to standards and objectives, even when faced with data of documented mastery.

*Belief 3: When faced with an academic challenge, students will resist and shut down.* Many teachers in this study seemed to resist tasks and approaches where students experienced any degree of struggle. It appeared that students' struggles, in their minds, connoted an unsuccessful teaching experience. Struggle, they seemed to fear, was the step prior to task abandonment. Removing this degree of academic challenge eliminated the possibility for many students to work through initial difficulties into eventual success, resulting in a missed opportunity for developing persistence, effort, and eventual pride in hard-won accomplishments. Teachers in this study decreased challenging opportunities in multiple ways. They resisted higher level curricula and assessment tasks provided by the coaches, citing unachievable degrees of difficulty for learners, and reduced contact with gifted and talented resource staff. These teachers seemed to believe that even talented students needed regular classroom instruction more urgently than enrichment.

Teachers believed that, when faced with struggle or challenging content, students would resist learning. Therefore, teachers surmised, they should refrain from presenting challenging learning experiences to students. Often teachers never extended challenging opportunities to students, fearing they would lose interest in the task, disengage from the classroom learning activities, and, potentially, cause disruption to others. A reading teacher at one middle school described how she no longer asked students to read independently in an attempt to prevent students' anxiety:

With one group . . . they are probably, the majority of them, at least 3 years below the level of reading. If I gave them the book and said, "Read it to yourself," it would be such a struggle that they would lose interest. (Teacher interview [Johannes], Y3, #9, p. 5)

This teacher, surmising the entire group would react the same way, reduced the opportunity for all students to improve their reading ability by simply removing reading as an expectation. It was unclear in this example how, or if, the teacher determined students' reading abilities prior to making this instructional decision.

Often teachers lacked the ability to ascertain an appropriate level of challenge for their students or to judge whether tasks they created were a good fit. "Whether it is too hard, I can't determine that until I've actually given it to them and they either start complaining or tell me that they can't do it" (Teacher interview [Winston], Y3, #4, p. 6). Regarding a differentiated performance assessment written collaboratively between the project coach and the targeted

sixth-grade team at Marshall Middle School, a teacher reflected that the task was too difficult for the team's students. Instead, the teacher explained that she preferred tasks that were more comfortable for students, reducing any uneasiness associated with an accessible, but difficult challenge.

It was really higher level thinking by nature of the project. When you talk about mathematicians, you are already in research that involves terminology like "algorithms" and "calculus," and for our students who are not really performing on grade level, that's difficult. Whereas I've done other research projects that are more in line with [students'] comfort level in thinking. (Teacher interview [Johannes], Y3, #11, p. 3)

While the theme of reducing challenge for students was pervasive throughout the sites, one school in the study most significantly demonstrated this theme across grade levels, teams, and content areas. Marshall Middle School, with its upscale resources and suburban feel, was home to many learners identified as gifted, as well as many highly capable learners who did not bear an official label. The school subscribed to Renzulli's (1977) enrichment triad model for gifted services, with the intent of talented students flexibly revolving in and out of enrichment groups as needed. Teachers revealed that, while shifting of students did occur early in the year, less flexible grouping and revolving of students occurred as the year progressed. Students were initially placed on teams with a wide range of student abilities, but individual teams, like Ms. Johannes' team, ability grouped within the team. The teachers spent the first few weeks of the year grouping the students into four classes based on reading and math levels (high-, medium-high-, medium-low-, and low-achieving students). These groupings remained constant throughout the year with infrequent, if any, shifting of membership. Interestingly, observations revealed no discernable difference between instruction and assessments, pacing, and resources used in the different groups (Observation [Johannes], Y3, #7, pp. 6–8; Observation [Johannes], Y3, #11, p. 2)

Janice Abraham, the gifted education resource teacher assigned the task of creating enrichment experiences for revolving groups of students, was timid and easily overpowered by the classroom teachers. She expressed dismay about teachers' misunderstanding of the program's philosophy. When she appeared at the door to retrieve students who should have been released to the resource room, Ms. Abraham was often told to reschedule because students,

even advanced learners, could not miss the valuable regular classroom instruction.

The coach at Marshall tried to balance the teachers' needs for incremental change while still combating low expectations for students. Teachers, frustrated by the performance assessments they perceived as too challenging, worked with coaches to modify tasks to make them easier for students in exchange for willingness to implement the new, less-challenging version. "[My coach] was very helpful with [modifying tasks] and sitting down with me. I would say, 'This rubric is too burdensome. This age group will not read through all of these domains,' and she was very open [to modifying.]" (Teacher interview [Johannes] Y3, #14, p. 6). Coaching sessions often involved negotiations between the coach and teachers, seeking a (seemingly paradoxical) compromise that both sides could accept: a challenging performance assessment that teachers felt would engage learners and promote student success with little to no struggle required.

The belief that students should work hard on tasks that were just slightly beyond their current comfort levels is aligned with the philosophy of differentiated instruction and differentiated performance assessment (Rieber & Carton, 1987; Tomlinson, 1999, 2001). This viewpoint, while appropriately matched with the study's philosophy, was seldom expressed by the teachers in this study.

One teacher emerged as a notable exception to the pattern. Claudia Eppard did explain her perception of the importance of students' hard work and manageable struggle. This teacher's definition of success for students was the intersection of hard work, diligence, and enjoyment of the task: "For me, personally, it is pure joy to plan something that 95% of your children really get into. They really enjoy it. They struggle. . . . I like to see a child struggle and then become successful" (Teacher interview [Eppard], Y3, #5, p. 3). Eppard acknowledged a shift in her thinking as a result of the professional development and coaching toward building a workable degree of struggle into the activities she designed for her students. Eppard's growth included a shift in her previous beliefs to accept the temporary discomfort associated with raising the ceiling for her learners: "What [professional development and the study] did for me was to make me stretch farther, to make each child have a goal that may be a little harder for him or her to obtain than I would have given . . . in the past" (Teacher interview [Eppard], Y2, #1, p. 2).

Eppard's belief is more aligned with the philosophy of addressing academic diversity through differentiation. "Teachers should teach

for success (by encouraging, providing support, planning, delineating criteria, and so on) so that the seemingly unattainable moves within the learners' reach" (Tomlinson, 2001, p. 13). The few teachers who developed or refined this belief through the study more fully subscribed to the approach and met with greater success than those teachers who continually battled coaches over instruction and assessments that embedded little challenge for bright learners.

*Belief 4: Equity and fairness for students means all students do the same thing.* Teachers struggled with balancing the concept of differentiation with their preexisting beliefs about fairness and equity to students. For them, it appeared that creating different tasks for learners' varied readiness, learning profiles, and interests opened the door to complaints from parents and students about the inherent unfairness of the practices. Even without provoking from others, teachers described discomfort with the perception of communicating what they perceived to be lower expectations for students, an interesting irony given the lack of challenging options for students. Teachers continued to resist scenarios where students worked on different levels of challenge, where each level was matched to promote a workable struggle. Misunderstandings and confusion about equity and fairness continued to surface throughout the study and served as roadblocks for teachers' growth.

Evelyn Johannes, a sixth-grade reading teacher at Marshall Middle School, believed that it was more equitable to assign "easy" projects for all students, hinting that children who were more advanced would challenge themselves on their own. Those who could not, would not. She believed this approach to be more fair than assigning different tasks with what she perceived to be harder assignments for only some.

I think maybe [my tasks] are too easy. Everybody can master [them], but for them to want that challenge to say, "I'm going to have to do a little more" instead of saying, "That is not fair, I did more than he did" . . . to somehow get to the intrinsic "Well, I can do that" or "I'll add this extra" or "Wouldn't this be neat in a performance?" (Teacher interview [Johannes], Y3, #15, p. 4)

Teachers in this study were largely traditional and believed that the instruction they delivered to students was solid and effective for preparing students for their various state tests. The wide range of students' academic diversity was acknowledged and articulated, but teachers did virtually nothing to address students' varied learn-

ing needs. Many teachers ignored the diversity and required students to move together in lockstep fashion.

[When we read a novel], I always have criteria. Every time I start a novel, I say, "You know my rules. You can't read ahead, and you have to have a positive attitude." Some of them will want to go and check the book out when we finish. But right now, I want to read it at my speed. (Teacher interview [Johannes], Y3, #7, p. 3)

Other teachers wrestled with the underlying philosophy of addressing academic diversity, fearing that providing different assignments for students based on demonstrated readiness was about lowering expectations.

I thought that the focus of the program was to have the same expectations for all students. When I heard and read about differentiation, it seems to me that I am not expecting the same from all students. To me, this is a conflict in ideas that I have not yet been able to work past. How can I differentiate lessons and still have the same high expectations for all students, no matter what their ability level? It was difficult not to think that all I was really doing was watering down the activities for my lower group." (Teacher journal [Armstrong], Y1, #5, pp. 6-7)

One response to teachers' conflict with the issue of fairness was the disguising of tasks to *seem* to be the same. Rarely did teachers choose the path of openly discussing with their students the differences among students' interests, learning profiles, and academic readiness. Instead, teachers chose to make assignments look the same by printing tasks on the same colored paper or requiring the same resources so that differences among the level of tasks were masked. A teacher reflected in her journal about the success of a differentiated assignment designed in part to appear the same to students despite her intended differences in difficulty levels.

Six projects were assigned on a hierarchy of simple to rather difficult. Each project had two to three areas—art (make a model), research, writing, poster design, and so forth—in which to present their findings. In this way, the projects appeared to be of similar design. The level of difficulty rose as the need for research was assigned. I haven't observed any complaints. (Teacher journal [Morgan], Y1, #1, p. 4)

When the approach to providing tiered assignments was more covert than overt, teachers seemed concerned when students

uncovered the differences among tasks. An observer described a classroom scenario where the teacher was vague in response to a student's query about the differences between the worksheets.

[Ms. Eppard] said that the reason that the worksheets were different colors today was because they were coded to different skills. She had in advance written students' names on the sheets and asked some students to pass them out to the class. One student asked which was the highest one, and Ms. Eppard said, "Which did he think was the highest one?" [The student] said that he thought red herrings were, and the teacher responded, "They could be very tricky" and then the student said, "Maybe making inferences [was the hardest task]," and then [the teacher] concluded the conversation by stating that maybe all of these tasks could be very difficult. (Classroom observation [Eppard], Y3, #2, p. 2)

Other teachers echoed this same concern about responding to students' queries:

Because earlier on I wasn't very good at . . . I would hand [assignment papers] out and people would look around and go, "Why are they doing easier assignments?" "Why are they doing harder assignments?" "Why are they doing different assignments?" And try to explain to the kids. It was very tricky. I try to be diplomatic, but I find that's something I struggle with. (Teacher interview [Boxer], Y2, #1, p. 3)

Often, because teachers' translation of increased challenge for learners meant differentiating the *quantity* of work, such as greater numbers of chapters to read, problems to solve, or pages to write, students protested the unexplained differences in the assignments given. "Why do they [other students] get to do all the really neat things?" (Field notes—Observation [Armstrong], Y1, #3, pp. 7–8). "That's not fair, they have an easier task" (Field notes—Observation [Armstrong], Y1, #3, pp. 7–8).

A second response to teachers' issues with fairness was transferring the decision making for choice of assigned tasks to the students, thereby eliminating the teacher from the fairness equation. Allowing some degree of student choice was often the first step for teachers as they evolved in their understanding of the approaches. Teachers frequently described scenarios that they believed were differentiated simply because they introduced student choice into the lesson. Further, allowing students to pick the level of difficulty alleviated teachers' concerns about fairness.

Or I've done this a number of times, I've given them the objective and then I give them choices. Finding out to see whether or not—because knowing what level they are on, I already pretty much know what level they are on—instead of me [*sic*] telling them, "This is what you are going to do," I allow them to choose. Usually they end up choosing, for the most part, choosing the level that I think they should be working on anyway so it makes them feel like they are getting the choice instead of me [*sic*] dictating to them what they need to do. (Teacher interview [Boxer], Y3, #4, p. 2)

Sometimes the choices were less central to the focus of the lesson or task. For example, teachers provided choices about whether or not the students worked independently or with a partner or allowed students to decide which materials to use to complete the tasks: "I've already overheard the variety of materials that they're planning to use. Their presentations should be quite interesting, if not entertaining! This enables the students to capture their strengths as they choose the method and style of presentation" (Teacher journal [Morgan] Y1, #1, pp. 17–18).

Fairness issues also surfaced at the time of evaluating students' work, especially in the differentiated instruction treatment sites. Teachers, often lacking clarity and focus about activities' objectives, had difficulty grading and defending their grading practices relative to the varied levels and choices of assignments. The question of grading student products was frequently raised to coaches, who provided several alternatives, including consideration of the use of detailed rubrics and providing narrative feedback.

I have a real problem as a teacher giving a grade for two tasks that I don't see as equal in my eyes. I know it's just as challenging for one person to do that one task and one to do the other task, but for them to get the same grade for it really bothers me at times. They're reaching the same goal, going up the mountain in two different directions, but . . . (Teacher interview [Armstrong], Y1, #3, p. 8)

Critical to effective instruction and central to the philosophy of differentiation is to remain focused on clear goals and objectives for learning tasks (Erickson, 2002; Tomlinson, 2001; Wiggins & McTighe, 1998). Prior to creating differentiated instruction or differentiated performance assessments, it is imperative to have a unifying focus on a concept or principle. "To develop increasing sophistication in critical content knowledge, decisions have to be

made about what is truly critical" (Erickson, 2002, p. 61). Teachers in this study seemed to misunderstand this recommended practice, expressing equity issues in scenarios where students complete different tasks. Many teachers mistakenly harbored the assumption that, if multiple versions of assignments were completed, the focus on a core concept would waver. Teachers' deeply held beliefs about grading and assessment were difficult to change, and, in some instances, school policies dictated grading practices that seemed to support teachers' observed practices to reduce challenge for all learners.

### **Implications and Conclusions**

Effectively addressing academic diversity requires a shift in the image of a classroom from the teacher as controller of the information and, consequently, the students as empty vessels in need of filling to a more carefully considered balance between teacher-initiated learning experiences, student-initiated learning experiences, and some experiences negotiated in tandem. Additionally complicating the equation is teachers' fear of increased accountability, which significantly impacts the teachers' ability to relinquish control of the direction of learning. Not all teachers in this study exhibited evidence of all four beliefs presented here; however, these beliefs emerged as prevalent among the teachers studied. These pervasive beliefs about the role of teacher and student inhibited teachers' ability to create and sustain learning environments compatible with meeting diverse learning needs.

Modifying teachers' understandings of their realities is a complicated endeavor, as there has been great historical discussion about how knowledge is constructed and modified. Philosopher Kant distinguished between a priori knowledge, what we know before experience, and a posteriori knowledge, what we learn from experience (Kant, 1781, cited in Buehl & Alexander, 2001). Considering knowledge from this perspective, the teachers came to this study with knowledge about addressing academic diversity separate from any actual experience. Through professional development, coaching experiences, and collaboration, we invited them to address students' diverse needs in their own classrooms. In some instances, the experiences teachers had conflicted with what they *thought* they knew, which led to frustration and resistance about the suggested practices in their own classrooms. In essence, the teachers used their preconceived understandings (a priori knowledge) about

the nature of teaching and learning to judge the validity of the new information proposed for them to consider, thereby shaping their experiences with their prior beliefs.

Teachers in the study whose preexisting beliefs aligned with the philosophy of addressing academic diversity had greater success with differentiating in their classrooms than those teachers whose preexisting beliefs were in greater contrast. Kant (1781, cited in Buehl & Alexander, 2001) offered one way of classifying teachers' beliefs, using the concept of a priori and a posteriori knowledge. Thinking about knowledge construction from this approach, teachers' beliefs serve as a filter through which they view their classroom experiences; their role in the complex classroom dynamic; how, and if, they reflect on these classroom experiences; and what changes, if any, they may make to their classroom practices as a result.

In classrooms focused on teachers as the primary source of information (Belief 1: Teaching equals talking, listening equals learning), teachers may be reenacting their own history of learning, incorporating a traditional view of the teacher and student roles (Cohen, 2001; Cuban, 1993). From this view, students' questions are largely procedural or nonexistent and discussions among learners limited. This approach reduces opportunities for students to engage fully in deep thought about studied topics and to develop the scholarly habits that emerge when learners wrestle with difficult ideas and challenges (Qian & Alvermann, 1995). In essence, teachers retaining control of all classroom elements may be yet another indicator of reduced challenging opportunities for bright learners.

It is critical to acknowledge and build on existing teacher beliefs when attempting to implement a new approach, such as meeting all learners' needs in a diverse classroom as recommended by middle school leaders (National Middle School Association, 1995; Zemelman et al., 1998). "Reform needs to give a central place to the perceptions of our teachers, because it is only by building on those perceptions that we can elevate the level of teaching" (Stake, 1991, p. 247). Without first acknowledging and incorporating teachers' existing beliefs about the nature of teaching and learning in a diverse classroom, the potential remains for teachers to misinterpret the recommendations from the fields of gifted and general education. The teachers' beliefs discussed above are in obvious conflict with the philosophy of addressing varied students' needs and suggest a possible reason changing classroom practices is such a complex task.

*Recommendations for Change Agents*

The current reality for many public middle schools includes academically diverse classrooms where teachers are charged with meeting the needs of all students, including the gifted. This reality requires teachers to respond with new classroom practices and a new lens on their role as teacher. This change often conflicts with teachers' existing beliefs and yields resistance, misinterpretations, and anxiety about the reform. Several specific recommendations for change agents may help alleviate anxiety and misinterpretations that hinder necessary progress toward the goals of meeting learners' needs:

1. *Take stock.* Ascertain teachers' preexisting beliefs regarding the initiative and teaching and learning in general. When change agents are aware of the prevailing beliefs of individuals or the school culture in general and actively incorporate these beliefs into the change process, there is an increased likelihood of systemic reform (Datnow & Castellano, 2000). Leaders and individuals responsible for professional development can create reflective scenarios where educators articulate and discuss existing beliefs and assumptions about the nature of teaching and learning in conjunction with the examination of new ideas and practices.

2. *Dig deeper.* Even though teachers' preexisting beliefs may be aligned, misunderstandings and misinterpretations of key components may exist that require reframing. It is critical to identify and redirect misunderstandings early in the process to prevent (or reduce) routinizing ineffective practices. Directly challenging learners' existing misconceptions has been shown to be one of the most effective strategies when attempting to enact conceptual change (Qian & Alvermann, 1995). This process requires coaches, professional developers, and other change agents to assume a role that balances both important components of the change agent: encouraging, motivating, and inspiring change and providing constructive feedback and redirection about their level of implementation.

3. *Provide support.* Because of the potential of misinterpretation of key practices, necessary support structures must be included for teachers. Teachers must have as a part of the framework of change access to individuals who can assist in the change process. Systemic change in classroom practices requires a combination of direct instruction, coaching, and opportunities for individual reflection about beliefs and practices (Joyce & Showers, 1996). The support provided to teachers should be differentiated to meet their varied needs throughout the change process.

4. *Be consistent.* It is imperative that change agents (e.g., professional developers, administrators, and coaches) be consistent about the messages sent, support promised and delivered, and feedback provided. Further, it is critical that change agents are conscious of not promoting competing initiatives, which increases anxiety for teachers faced with the uncertainty of change. As conflicting or turbulent organizational cultures can reduce the possibility of risk taking and change, effective change agents will communicate clear, consistent messages about intended changes and will support teachers as they embark on the journey with professional development, feedback, and necessary resources.

Even under the best of circumstances, changing teachers' beliefs and practices to better attend to students' academic diversity is a complex and time-consuming endeavor. Those teachers who came to the study with preexisting beliefs that aligned with the study's philosophy and practices we espoused met with greater success in their classroom attempts to differentiate for their diverse middle school learners. Other teachers in the study communicated, both in words and actions, beliefs about the nature of teaching and learning that conflicted with the study's philosophy and resisted implementing the strategies to better attend to their learners' different needs. As general educators are increasingly serving gifted learners in heterogeneous settings, it is critical that these general educators become facile with the skills required to meet their learners' needs. This study's findings suggest that many middle school teachers' hold conflicting beliefs that directly affect their ability to differentiate for diverse middle school learners, including the gifted.

## References

- Ball, D. L. (2000). Bridging practices: Intertwining content and pedagogy in teaching and learning to teach. *Journal of Teacher Education, 51*, 241–247.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Beane, J. A. (1993). *A middle school curriculum: From rhetoric to reality* (2nd ed.). Columbus, OH: National Middle School Association.
- Berliner, D. (1988). *The development of expertise in pedagogy*. Washington, DC: American Association of Colleges for Teacher Education. (ERIC Document Reproduction Service No. ED 298 122)

- Betts, P., & Frost, L. (2000). Subject knowledge and teacher preparation. *Education Canada*, 40(1), 38–39.
- Brighton, C. M., Hertberg, H. L., Moon, T. R., Tomlinson, C. A., & Callahan, C. M. (in press). *The feasibility of high-end learning in the diverse middle school*. Storrs: University of Connecticut.
- Buehl, M. M., & Alexander, P. A. (2001). Beliefs about academic knowledge. *Educational Psychology Review*, 13, 385–418.
- Carnegie Council on Adolescent Development. (1990). *Turning points: Preparing American youth for the 21st century*. New York: Carnegie Corporation
- Cohen, D. K. (2001). A revolution in one classroom: The case of Mrs. Oublier. In *The Josey-Bass reader on school reform* (pp. 440–469). San Francisco: Jossey-Bass.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1997). *Talented teenagers: The roots of success and failure*. New York: Cambridge University Press.
- Cuban, L. (1993). *How teachers taught: Constancy and change in American classrooms, 1980–1990*. New York: Longman.
- Datnow, A., & Castellano, M. (2000). Teachers' responses to Success for All: How beliefs, experiences, and adaptations shape implementation. *American Educational Research Journal*, 37, 775–799.
- Duke, D. L. (1993). Removing barriers to professional growth. *Phi Delta Kappan*, 74, 702–704, 710–712.
- Elmore, R., Peterson, P., & McCarthey, S. (1996). *Restructuring in the classroom: Teaching, learning and school organization*. San Francisco: Jossey-Bass.
- Erickson, H. L. (2002). *Concept-based instruction: Teaching beyond the facts*. Thousand Oaks, CA: Corwin Press.
- Franke, M. L., Carpenter, T., Fennema, E., Ansell, E., & Behrend, J. (1998). Understanding teachers' self-sustaining, generative change in the context of professional development. *Teaching and Teacher Education*, 14(1), 67–80.
- Fullan, M. (1991). *The new meaning of educational change* (2nd ed.). New York: Teachers College Press.
- Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. New York: Routledge-Falmer.
- Fullan, M., & Hargreaves, A. (1992). *Teacher development and educational change*. London: Falmer.

- Gersick, C. J. G. (1991). Revolutionary change theories: A multi-level exploration of the punctuated equilibrium paradigm. *Academy of Management Review*, 16, 10–36.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine DeGruyter.
- Gold, B. A. (1999). Punctuated legitimacy: A theory of teacher change. *Teachers College Record*, 101, 192–219.
- Guskey, T. R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education*, 4(1), 63–69.
- Hall, G. E. (1985, April). *A stages of concern approach to teacher preparation*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Jackson, A. W., & Davis, G. A. (2000). *Turning points 2000*. New York: Teachers College Press.
- Joyce, B., & Showers, B. (1996). The evolution of peer coaching. *Educational Leadership*, 53(6), 2–16.
- Kanter, R. M. (1983). *The change masters: Innovations for productivity in the American corporation*. New York: Simon & Schuster.
- Kaplan, S. N. (1974). *Providing programs for the gifted and talented: A handbook*. Ventura, CA: Office of the Ventura County Superintendent of Schools.
- Lipsitz, J. (1984). *Successful schools for young adolescents*. New Brunswick, NJ: Transaction Books.
- Meredith, A. (1995). Terry's learning: Some limitations of Shulman's pedagogical content knowledge. *Cambridge Journal of Education*, 25, 175–187.
- Moon, T. R., & Callahan, C. M. (2001). Classroom performance assessment: What should it look like in a standards-based classroom? *NASSP Bulletin*, 85(622), 48–58.
- National Middle School Association. (1995). *This we believe: Developmentally responsive middle schools*. Columbus, OH: Author.
- Qian, G., & Alvermann, D. (1995). Role of epistemological beliefs and learned helplessness in secondary school students' learning science concepts from text. *Journal of Educational Psychology*, 87, 282–292.
- Renzulli, J. S. (1977). *The enrichment triad model: A guide for developing defensible programs for the gifted*. Mansfield Center, CT: Creative Learning Press.
- Schwandt, T. A. (1989). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social construc-

- tivism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 189–213). Thousand Oaks, CA: Sage.
- Stake, R. E. (1991). The teacher, standardized testing, and prospects of revolution. *Phi Delta Kappan*, 73, 243–247.
- Strauss, A. L., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia: A century of public school reform*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky* (R. W. Rieber & A. S. Carton, Eds.). New York: Plenum.
- Wiggins, G., & McTighe, J. (1998). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Zemelman, S., Daniels, H., & Hyde, A. (1998). *Best practice: New standards for teaching and learning in America's schools*. Portsmouth, NH: Heinemann.