

The National Research Center
on the Gifted and Talented:
**Reaching the
Destination**

E. Jean Gubbins
University of Connecticut
Storrs, CT

I feel as if I have been on a long road trip since July 1990. That's when I signed up to be part of The National Research Center on the Gifted and Talented (NRC/GT). I thought I knew what I was getting into. I read the initial proposal for the NRC/GT, but didn't have a real sense of what it would take to carry out the planned mission. I hit the road without road maps or written directions. It is now May 1995 and the "road trip" for the

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NRC/GT ends within days. It is time to look back to see what has been accomplished.

When I view all of the multimedia products created by the NRC/GT, I am amazed at the level of productivity. A primary mission of the Center was to conduct theory-driven research that would have practical implications for administrators, teachers, schools, and parents. All the results of such research would be presented in practitioner-friendly products in different formats. The written words

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**he National
Research
Center
on the
Gifted and
Talented**

**NRC
G/T**

Newsletter

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and visual images have documented our progress over time for millions of people around the world. Over the years, people have accessed the research information from journals, newsletters, newspapers, books, slides, satellite teleconferences, fax machines, computer networks, and computer disks. Those who preferred to hear about the research findings have joined us at presentations in several states and countries during local, state, national, and international conferences and workshops. Our staff has made over 830 presentations to ensure that the research results were not limited to periodical shelves in university libraries.

The talents and energy of our staff have made it possible to chart the course to reach our destination drafted in our original objectives. It is important to look back at the general categories of our objectives and note that they have been accomplished:

- ✓ to conduct research studies
- ✓ to design and implement research studies responsive to the needs of the field
- ✓ to identify Collaborative School Districts to serve as research sites
- ✓ to organize and operate a practitioner-responsive advisory network

publishing articles and making presentations

- ✓ to prepare a series of literature reviews, research syntheses, and meta-analyses
- ✓ to establish a comprehensive database and research archives
- ✓ to establish a system of monitoring and accounting of the Center's activities
- ✓ to develop a broad-based theoretical framework for the study of the gifted and talented.

And we are still adding to our list of accomplishments! We have been working feverishly to crunch mounds of statistical data, to search for themes and patterns in reams of field notes and transcripts, and to prepare products. During all of this activity, we held our final conference in Connecticut on March 31 and April 1, 1995—*Building a Bridge Between Research and Classroom Practices in Gifted Education*. We brought together 36 of our researchers for 2 days to share the lessons learned with over 300 people. The lessons learned provided a basis for discussion points for people who were to return to their local

were informative and intriguing.

The research was important to them and many of them appreciated the opportunity to be part of the Center's grand design to include hundreds of Collaborative School Districts across the country as research liaisons in conducting applied studies. In fact, in the past few month the following school districts have joined our network:

Cardinal Community School District
Eldon, IA

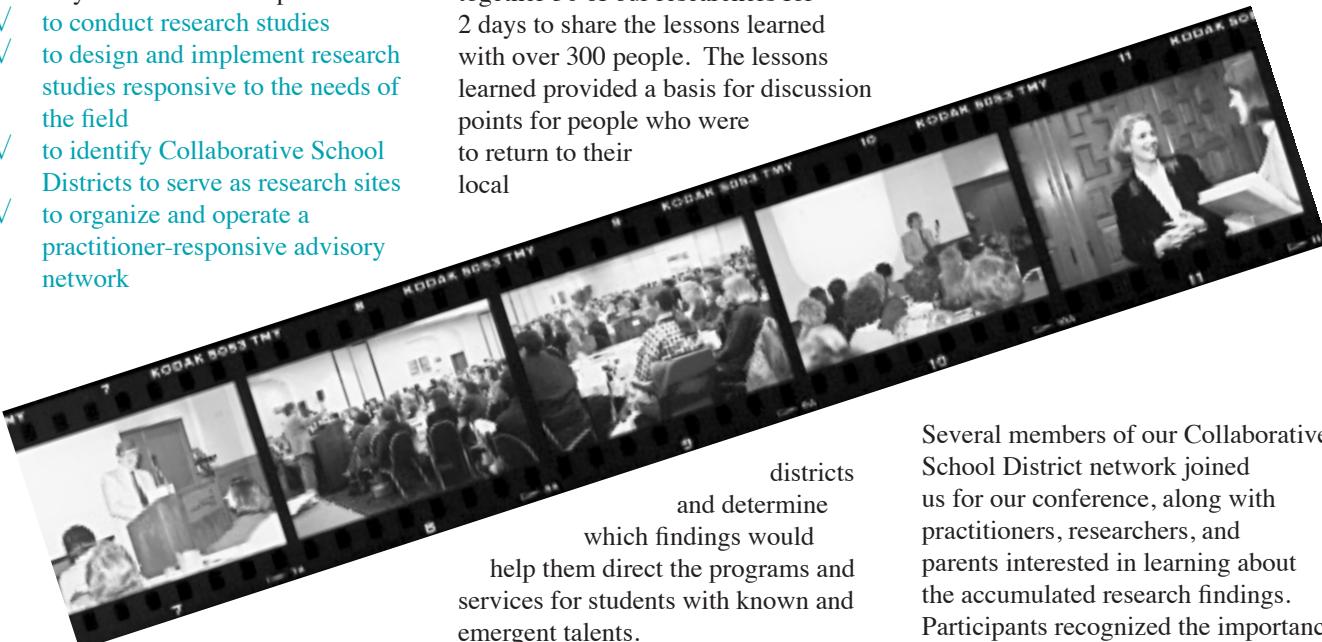
Erie Community Unit District 1
Erie, IL

Grosse Point Public School System
Grosse Point, MI

Marshall Public Schools
Marshall, MI

Onteora Central School District
Boiceville, NY

Quaker Valley School District
Sewickley, PA



districts
and determine
which findings would
help them direct the programs and
services for students with known and
emergent talents.

As I presented sessions, attended sessions, and met with people formally and informally, I listened and responded to comments and questions. The discussions by all

Several members of our Collaborative School District network joined us for our conference, along with practitioners, researchers, and parents interested in learning about the accumulated research findings. Participants recognized the importance of research to the field in general and to their particular situation in their districts, universities, or homes. A sample of comments from conference participants serves as support for our original objectives:

We are a Collaborative School District and from the beginning we felt this [the NRC/GT] was important to us. I don't think that you can do good school



programming without research.... Often we have done that and left the research to people beyond our control and certainly I appreciate the

idea that this segment of gifted education can be backed by solid, good research, rather than hearsay or general types of research.

*-Dennis Hansen
Omaha, NE*

I want to be backed up by theory. I want to have an opportunity

to be with the scholarship that was presented in the past 2 days. I feel that this center is representing very high quality research and the best of our leadership in the



field of gifted.

*-Gretchen Duling
Snyder, NY*

Workshops are a rejuvenation.... It is refreshing to have an opportunity to talk to other professionals and to talk about the same problems and just to get validation for what you are doing.

*-Sue McInerney
South Windsor, CT*



[The conference] has been a high! It has been a delight—being with other people in the field is a thrill because we tend to be isolated in our home districts....



The networking opportunities have been phenomenal! Not to exclude the quality of the presenters and of Joe Renzulli's tying together of the whole operation. One of the highlights of my career, and I am really not just saying that—it is the truth!

*-Ruth Caley
Pearl River, NY*

I am very excited about The National Research Center on the Gifted and Talented because... they are involved in [connecting] research to practice. Research in the past has always been pure research, and it has been conducted at the whim of the researcher.



The collegial atmosphere between the researchers and the practitioners at this conference is second to none.... I hope that we can continue

this kind of dialogue and continue to be in touch with each other so we can have a good exchange—not only between the researchers and practitioners, but between the practitioners and researchers.... It is really a two-way street, and we need to work together to have the best possible education system.

*-H. C. Juliette Harris
Bermuda*

Comments such as these make the "high speeds and rocky roads" I traveled more worthwhile. The 5 years have been a whirlwind of activity, but the opportunity to conduct applied research studies on the education of gifted and talented students has been an unparalleled opportunity. The Research Center has been supported by the Jacob K. Javits Gifted and Talented Students Education Act of 1988, administered by the United States Department of Education Office of Educational Research and Improvement (OERI). I would be remiss if I didn't send special thanks to the Center monitors from OERI with whom I have worked, including Margaret Chávez, Ivor Pritchard, Patricia O'Connell Ross, Beverly Coleman, and Debra Hollinger. They have all guided the destination. The destination would not have been possible without the federal support and leadership.

So many of you have had a critical role in the research efforts. Each person has been a contributor to the national agenda that dates back to the Research Needs Assessment Survey—remember that form! Thousands of surveys were returned during 1991 (and yes, it is true that one was returned in 1994). The resulting data analyses provided the direction for research from 1991-1995. Well, the research path is coming to an end for now, and I just want to say how much I appreciate all the people involved in The National Research Center on the Gifted and Talented. Thank you is such a brief phrase, but it carries with it a sincerity that no other words can match.

The Road Not Taken

*Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.*

—Robert Frost

In a unique university-school district collaboration, the University of Virginia and Charlotte-Mecklenberg (North Carolina) Public Schools are conducting a three-year study to determine the efficacy of using a multiple intelligence model to identify and teach primary age, low socioeconomic and/or minority

reassembling a household drainpipe, students in kindergarten and first grade had the opportunity last spring to display verbal-linguistic, spatial, logical mathematical, and personal intelligences.

Groups of approximately six or seven identified START children are placed

Multiple Intelligences Help Teach Culturally Diverse Learners

Carol Ann Tomlinson

University of Virginia
Charlottesville, VA

learners. The collaboration is called Project START, an acronym for Support to Affirm Rising Talent.

The project has both practice and research components. The Charlotte-Mecklenberg Schools, using funding from a Javits grant, assume major responsibility for the practice component. Approximately 250 low socioeconomic and/or minority first and second graders from 16 schools have been identified for participation in Project START using a series of nontraditional, problem-solving tasks based on Howard Gardner's Theory of Multiple Intelligences. Through such activities as story-telling, building structures, developing strategies for keeping track of entering and exiting bus passengers during a simulation, and even disassembling and

in target classrooms. Their teachers participate in extensive, on-going staff training for developing curricula which utilize the child's intelligence strength to foster development of skill in language and math, as well as focusing on talent development in the intelligence areas themselves. START classrooms also have a multicultural, manipulative, and language-rich emphasis because of strong research indications of the effectiveness of such instruction for low SES and culturally diverse populations.

Further, all START schools have Family Outreach Programs which concentrate on making parents aware of the potential of their youngsters, helping family members participate in developing that talent at home, and involving parents in their child's

school in a variety of ways. In some START schools, identified youngsters also work with community mentors who serve both to encourage talent development in areas of student strength and also to encourage general student success in school.

Staff members at the University of Virginia site of The National Research Center on the Gifted and Talented serve a dual role in Project START. They work as consultants for curriculum development, staff training, and development of family outreach and mentorship elements of the program. In addition, they have

major responsibility for conducting an extensive 3-year research study, using both qualitative and quantitative methods, to determine the impact of the various interventions (e.g. START instruction, mentorships, family outreach) on achievement and attitudes about self and school. Further, they are studying the process through which teachers may come to differentiate instruction in START classrooms, and the impact of the program on families.

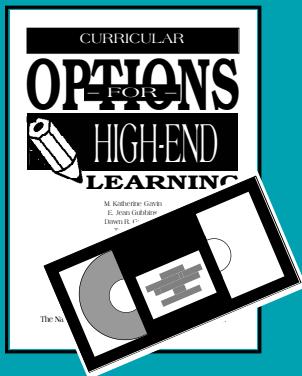
Project START should yield a variety of benefits beyond the obvious ones for participants and their families. In

Charlotte, START will serve as a pilot for employing multiple intelligence identification and service throughout the school district's program for gifted and talented youngsters. For a much broader audience, START will shed light on strategies for identifying and nurturing talent in economically disadvantaged and culturally diverse populations, and provide insight on ways in which teachers can learn to adjust their instruction to invite success among diverse student populations and in expanded talent fields.

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The Explicit Teaching of Thinking Skills: A Six-Phase Model for Curriculum Development and Instruction with Dr. Deborah E. Burns

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RECENT RESEARCH

Introduction
It is clear that an alarmingly large number of gifted and talented students are unchallenged in our nation's schools. Few comprehensive programs for the gifted exist, and those gifted students who do get special attention receive it for as little as 2 or 3 hours per week in a resource room setting, with little or no modification in their regular

A Follow-up Study of the Interaction Effects on the Classroom Practices Survey

Scott W. Brown
Francis X. Archambault, Jr.
Wanli Zhang
Karen L. Westberg
University of Connecticut
Storrs, CT

classroom activities (Archambault, Westberg, Brown, Hallmark, Zhang, & Emmons, 1993; Council of State Directors, 1987; Cox, Daniel, & Boston, 1993; Westberg, Archambault, Dobyns, & Salvin, 1993). Studies by Archambault et al. (1993) and Westberg et al. (1993) have focused on classroom practices with gifted and talented students in regular classrooms across the United States using the responses of third- and fourth-grade teachers. The current study is an extension of this research conducted by The National Research Center on the Gifted and Talented (NRC/GT). The purpose of this study is to examine the factors that may affect the classroom practices of teachers with average and gifted students in the regular classroom.

The questions addressed by the current study are related to certain teacher and student demographic variables. There were three specific questions.

- (1) **What is the relationship of the teacher's experience to his/her instructional practices with average and gifted students?**
- (2) **What is the impact of specific teacher training in gifted**

education on both the gifted and average students?

- (3) **What is the impact of the presence of various numbers of gifted students within classrooms on the teacher's instructional practices for all students?**

Prompted in part by a series of studies and reports critical of tracking and homogeneous ability grouping (Carnegie Task Force on the Education of Young Adolescents, 1989; Goodlad, 1984; Oakes, 1989; Slavin, 1981; Toepfer, 1990), many school districts across the country are in the process of eliminating or downsizing their gifted programs and services. Thus, it is becoming increasingly apparent that the needs of gifted learners must be met in the regular classroom. Unfortunately, recent research

(Archambault et al., 1993; Westberg et al., 1993) has found that the majority of regular classroom teachers are doing little to address these needs, and this result applies to classrooms and students in all regions of the country. These results are discouraging for supporters of gifted education, many of whom have long argued that a student's educational program should be determined by his or her needs, abilities, and interests (Gallagher, 1985; Maker, 1982; Parke, 1989; Passow, 1982; Renzulli, 1977; Ward, 1980) and that any single educational experience will not benefit all students equally (Parke, 1989; Stewart, 1982). Although there is some evidence (Westberg et al., 1993) to suggest that certain classroom teachers are able to meet these students' needs, we do not know at this time what distinguishes these teachers from the large majority of teachers who cannot, or will not, modify their instruction for gifted students.

Much has been written about the personal characteristics, competencies, and behaviors that distinguish outstanding from average teachers of the gifted (e.g., Story, 1985; Whitlock & DuCette, 1989). Research has also shown that gifted students prefer teachers who are older and more experienced (Bishop, 1967) and that teacher attitudes toward the gifted and talented are related to the amount of teaching experience (Rubenzer & Twaite, 1979). Thus, it appears that teaching experience may influence both how gifted students view teachers and how teachers view students. Despite a good deal of recent research on preservice and beginning teachers (e.g., Kagan, 1992), we know surprisingly little about the effect that teaching experience has on teaching behavior viewed over the longer haul, particularly the delivery of instruction to gifted students in the regular classroom.

According to Schack and Starko (1990), inservice training programs have traditionally been the major vehicle for preparing teachers to meet the needs of the gifted. Research also suggests that teachers' attitudes, beliefs, and practices can be influenced by training received at the preservice level (Koballa, 1984, 1986; Leyser & Abrams, 1983; Parish, Nunn, & Hattrup, 1982). However, we know very little about the differential effect of preservice and inservice training on the types of instruction delivered to gifted students. We also know little about how teacher behavior is affected by the number of gifted students in their classrooms. Perhaps greater numbers of gifted students reduce the teacher's ability to meet individual needs. On the other hand, faced with a critical mass of gifted students, teachers might be motivated to become more familiar with gifted education practices and, therefore, be more able to meet their needs.

Methods Instrumentation

The Classroom Practices Questionnaire (CPQ) is a six-page instrument focusing on the teacher, school district, classroom issues, and classroom practices. The original sample consisted of 8,000 third- and fourth-grade school teachers randomly drawn from the four Bureau of Census regions of the country and three community types (urban, suburban and rural). The CPQ was mailed to the teachers in the winter of 1991. The return rate was approximately 50%, 3,993 total respondents. A complete description of the sampling procedure and the structure of the CPQ is presented in Archambault et al. (1993).

On the CPQ, teachers reported the frequency of 39 individual classroom practices that they employed with average and again with gifted

students. Frequencies were reported on a 6-point scale ranging from 0 to 5 (Scale: 0 = Never; 1 = Once a month or less frequently; 2 = A few times a month; 3 = A few times a week; 4 = Daily; 5 = More than once a day). Earlier analyses of the CPQ indicated that there are six factors related to the classroom practices of teachers with gifted and average students, and that these instructional practices occurred slightly more frequently with gifted students than with average students. These factors were: (1) questioning and thinking; (2) providing challenges and choices; (3) reading and written assignments; (4) curriculum modifications; (5) enrichment centers; and (6) seatwork.

A repeated measures MANOVA with follow-up analyses was conducted. The model included the demographic variables (teaching experience, the amount of training, and the number of gifted students in the classroom) as the dependent variables and the type of student (average vs. gifted) and the six factor scores of the CPQ as the independent variables. The actual number of teachers' responses in each analysis varied according to the amount of missing data. The actual number of respondents for each analysis will be reported for each of the three demographic variables.

Training Experience

Teaching experience was categorized into five levels [1 = <6 years, (*n* = 157); 2 = 6-10 years, (*n* = 180); 3 = 11-15 years, (*n* = 178); 4 = 16-20 years, (*n* = 259); 5 = >20 years, (*n* = 303)] (*N* = 1077). The analyses revealed significant interactions between teacher experience and the type of student ($F = 3.31, p < .01$) and between teacher experience and the six factors ($F = 3.60, p < .01$). Follow-up analyses indicated that as teacher experience increased, differences in the average and gifted, favoring the

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gifted students (i.e., differentiated instruction) also increased. This suggests the more experienced the teacher, the greater the differentiated curriculum for the gifted student(s).

The follow-up analyses for the interaction of teacher experience and the six factors across both types of students revealed that only the seatwork factor (factor 6) produced a significant effect ($p < .05$). Additional analyses indicated that the least experienced teachers reported assigning seatwork significantly less than those with 15 years or more of teaching experience. Thus, more experienced teachers appear to be more likely to assign seatwork than their younger colleagues.

Training

The amount of training in gifted education that teachers reported was coded into three separate groups [1 = no training, ($n = 364$); 2 = district or workshop training ($n = 349$); and 3 = college/university courses or a degree program, ($n = 325$)] ($N = 1,038$). The analyses of the training effect revealed a significant main effect for the training variable ($F = 24.39, p < .01$), as well as significant interactions between training and type of student (gifted and average) ($F = 4.88, p < .01$) and between training and the six factors ($F = 4.41, p < .01$).

Follow-up analyses indicated that teachers with either type of training (district or formal university training) reported making greater differentiation between the average and gifted students for factors 1, 2, 3, and 5. For factor 4, curriculum modifications, teachers who had district or workshop training provided greater differentiation than teachers who had no training. Also, teachers who had university training provided greater differentiation than those with district or workshop training. The higher the level of training, the greater the curriculum modifications.

Interestingly, only factor 6, seatwork, yielded no differences in the classroom practices according to the amount of training, possibly because few gifted programs focus on assigning seatwork to students.

The Number of Gifted Students in the Classroom

The number of formally identified gifted children in the classroom was coded into three separate groups [(1 = 1-2 students, ($n = 504$)); 2 = 3-4 students, ($n = 293$)); 3 = >4 students, ($n = 272$)] (total $N = 1,069$). The analyses yielded a significant interaction between the number of gifted students and the factors ($F = 3.71, p < .01$), but there was no significant main effect for the number of gifted students ($p > .05$).

The interaction indicates that for factors 1, 3, 5, and 6, (questioning and thinking, reading and written assignments, enrichment centers, and seatwork) there were no differences in the classroom practices reported by teachers according to the number of gifted students in their class. However, for factors 2 and 4 (providing challenges and choices, and curriculum modifications) there were significant differences ($p < .05$). For factor 2 there was no difference in the classroom practices when teachers had between 1 and 4 gifted students in their classrooms, but when they had 5 or more gifted students, the challenges and choices for **all students** increased. For factor 4, there was a significant difference ($p < .05$) in the amount of curriculum modifications made for all students when the class contained between 1 and 2 gifted students and when there were greater than 4 gifted students, but neither group was significantly different from teachers having 3 and 4 students.

Discussion

By examining the classroom practices of teachers with average and gifted students, examining teaching

experience, teacher training, and the presence of different numbers of gifted students on regular classroom practices with all students, these results extend the findings of earlier research focusing on classroom practices. The conclusion that the more experience teachers have, the greater their ability to differentiate their instructional practices for gifted and average students is not surprising, but the extremely small actual difference among the training levels is discouraging. On a 6-point scale, the maximum mean difference between the experience levels was 0.06 for the average and 0.12 for the gifted students, with a maximum difference between the gifted and average students of 0.20 for the most experienced teachers. As experience increased, so did the difference in the treatment of average and gifted students, but again, the differences were very small.

The finding that teacher training in gifted education benefits all students is one that has been hypothesized by gifted educators for years. The current study provides evidence supporting this position. The classroom practices of those teachers trained in district or special workshop programs, and those with university or college training increased their classroom practices for all students, in every factor/practice except the use of seatwork. Additionally, college/university training had a significant impact above and beyond district and workshop training for modifying the curriculum with average students as well as gifted students.

Finally, the number of formally identified gifted students did not have an impact on the differences in several of the practices used with gifted and average students. Having greater than 5 gifted students in the classroom appears to positively impact the challenges and choices and curricular

modifications that classroom teachers provide to average and gifted students.

Conclusions

The present study provides evidence that training in gifted education and the presence of gifted and talented students in the regular classroom positively impact the instructional practices of teachers for both gifted and average students. Teachers with formal training in gifted education (as opposed to district inservice training or no training at all) provided more curricular modifications for gifted students, and this finding should be of particular interest to individuals in higher education and school administrators. It suggests that administrators may want to examine prospective teachers' transcripts to see if teachers were enrolled in courses on meeting students' individual needs and courses in gifted education. The finding further suggests that faculty and administrators in higher education should make sure that their institutions offer these courses and encourage all education majors to enroll in them.

In addition to noting the benefit of formal training in gifted education, school personnel should be aware of the impact that district inservice training had on some of the practices used by teachers with gifted and average students, i.e., questioning and thinking, challenges and choices, reading and writing assignments, and enrichment centers. It reaffirms the "need for" and "benefits of" staff development at the district level. It also suggests, however, that training on how to modify the curriculum has been inadequately addressed or has not been provided at all in staff development programs.

The data from this study suggest that the number of formally identified students in classrooms does not have an impact on most of the teachers' classroom practices. However, the research finding that having more

than 5 gifted students in the classroom results in more "challenges and choices" being provided to both gifted and average students is particularly intriguing. This suggests that the "cluster model" in gifted education has noteworthy outcomes. The "cluster model" (placing several gifted students into one regular classroom with a trained teacher) has not been used as much in recent years and, perhaps, it should be reconsidered as a viable provision for meeting the needs of gifted students in the regular classroom. While there is certainly no consensus in the literature about the most appropriate delivery system for gifted students, the results of this study suggest that if the needs of gifted are to be met within the regular classroom, we should consider the training of the classroom teacher and the student composition of the classroom.

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The Paradox of Academic Achievement of High Ability, African American, Female Students in an Urban Elementary School

Jann Harper Leppien
College of Great Falls
Great Falls, MT

This qualitative study investigated the school experiences of 12 high ability, African American female elementary students in an urban school. The purpose of the investigation was to examine the self-perceptions these students held regarding their academic success and to explore why some high ability females achieve in this school setting, while other high ability females underachieve. For several decades, high ability children who do not achieve scholastically at levels commensurate with their mental abilities have been the focus of considerable concern of educators. While research has identified variables that have influenced the underachievement of high ability students, a paucity of research focuses on the achievement of high ability, African American females at the elementary school level. This study offers additional insight into the underachievement phenomena experienced by females in grades 4, 5, and 6 who live in an urban setting.

Through participant observation, ethnographic interviews, and document review, factors were identified which may influence patterns of achievement and

underachievement in this population. The perceptions these females held regarding the reasons for their academic achievement/underachievement, and the factors which influenced their academic achievement/underachievement were also explored.

Findings from this study indicate that numerous differences existed between the students who achieved and those who underachieved in this urban elementary school. The high ability achievers had a strong belief in self; employed learning and behavioral strategies which maintained their academic performance and regulated the effects of the negative peer culture; and acknowledged the importance of numerous support systems on their achievement including school- and community-sponsored extracurricular events, teachers, and the immediate and extended family network. The high ability underachievers employed negative behaviors to maintain their belief in self; adopted learning and behavioral strategies that made them vulnerable to academic failure; were unsuccessful in managing and regulating their peer culture; and acknowledged fewer support systems.

Effects of Teacher Training on Student Self-Efficacy

Del Siegle
University of Connecticut
Storrs, CT

Over 15 years of research has been conducted in the field of self-efficacy since Albert Bandura's seminal article was published in 1977. The popular construct has been applied to areas ranging from snake phobias to basketball free throw shooting averages. Although its educational implications have been extensively researched, little research had investigated the purpose of this study, which was to assess changes in students' self-efficacy and achievement after staff development on self-efficacy was conducted with their teachers.

A pretest-posttest control-group quasi-experimental nested design using a

volunteer sample of intact groups was used. The sample included 872 fifth grade students ($n = 435$ males; $n = 432$ females) from a volunteer sample of 10 school districts in 6 states with 15 schools and 40 fifth grade classrooms.

This study consisted of two phases. In the first phase, the classroom teachers from the schools assigned to the treatment group received a handbook on self-efficacy and attended a videotape inservice training session on self-efficacy instructional strategies. The teachers of the control classrooms did not receive any special training.

During the second phase of the study, all of the teachers taught a

Regular Classroom Practices with Gifted Students in Grades 3 and 4 in New South Wales, Australia

Diana Ruth Whitton
University of Western Sydney
New South Wales, Australia



4-week mathematics measurement unit provided by the researcher. The treatment group teachers were expected to use the classroom management techniques demonstrated and practiced in the training workshop while teaching the mathematics unit.

Students of teachers who were trained in self-efficacy strategies showed significantly higher mathematics self-efficacy after 4 weeks of mathematics instruction than students of teachers who were not trained in self-efficacy strategies. No practical achievement differences were found between the two groups, although possible

differences may have been limited by the curriculum of the measurement unit. No practical gender differences were found. There also was no interaction between experimental group and gender, nor between ability level and treatment. Students of all ability levels benefited from the self-efficacy strategies.

This study demonstrated that teachers can modify their instructional strategies with minimal training and that significant increases in student self-efficacy can be achieved during a short time period with minor changes in instructional style.

The Regular Classroom Practices Survey (RCPS) was conducted to determine the extent to which gifted and talented students received differentiated education in the regular classroom across New South Wales. This research paralleled the Classroom Practices Study completed in the United States. The survey focused on information about the teachers, their classrooms, and regions. Classroom practices, in relation to the curriculum modifications for gifted and average students, were analyzed. The survey sample was drawn from the three sectors of education: government, Catholic, and independent schools, within the 10 regions of New South Wales. This included 401 third and fourth grade teachers in government schools, 138 teachers in Catholic schools, and 67 teachers in independent schools. The research questions that guided this study were:

- (1) Do teachers modify the curriculum content to meet the needs of gifted students?
- (2) Do teachers modify their instructional practices for gifted students?
- (3) Are there any organizational variations in planning to meet the educational needs of gifted children?

- (4) Are there differences in the types of regular classroom services provided for gifted students in relation to the type of school or region?

Provisions for the gifted included variations in the content taught, the organizational strategies, and the instructional techniques used in the classroom. As the American study found, this survey showed that third and fourth grade teachers make only minor modifications in the regular curriculum to meet the needs of gifted students. Teachers who provided for gifted students encouraged participation in discussions, asked open ended questions and questions that required reasoning and logical thinking. However, these strategies were not unique for the gifted students. This result was apparent for all samples. One reason for the lack of provision made for gifted students may be the limited number of qualified teachers in the education of gifted students. It was found that 46 percent had no training in the area. In addition, there was a high percentage of teachers who had no knowledge of the current practices or options available for gifted students within their school or region.

The Successful Practices Study

Karen L. Westberg

Francis X. Archambault, Jr.

University of Connecticut
Storrs, CT

The following quote by John F. Kennedy exemplifies the attitude found in these successful schools:

Not every child has an equal talent or an equal ability or equal motivation, but children have the equal right to develop their talent, their ability and their motivation.

Can you name a school that has a reputation for meeting the individual needs of students and, specifically, the needs of high ability students? If you can name one, do you know how or why this is occurring? These were among the questions that guided the University of Connecticut site of The NRC/GT as we conducted the Successful Practices Study. The research was designed to extend information gained from studies in 1990-91 conducted by the University of Connecticut. These included the Classroom Practices Study, which revealed that little instructional and curricular differentiation for bright students was occurring within the majority of regular classrooms throughout the country, and the Curriculum Compacting Study, which indicated that teachers who modified the curriculum for high achieving students could eliminate a substantial amount of their regular curriculum without any significant decrease in students' standardized test scores.

The overall purpose of the Successful Practices Study was to gather qualitative data to describe the practices used for meeting the needs of high ability students in third, fourth, and fifth grade classrooms. Purposive sampling was used to select 10 elementary school sites, and ethnographic case studies were conducted at each site (two urban, six rural, and two suburban.) The researchers, who spent several months gathering observational and interview data for the study, were Linda Emerick, Thomas Hays, Thomas Hébert, Marcia Imbeau, Jann Leppien, Marian Matthews, Stuart Omdal, and Karen Westberg. They wrote case studies describing the findings at each site, which will be part of a research monograph on the Successful Practices Study.

The findings from the study are informative and varied. In some situations, the classroom teachers

implemented curriculum modification procedures, employed flexible grouping practices, provided advanced level content, or provided opportunities for advanced level projects. At some of the sites, the teachers collaborated with the other teachers at their grade level or with district curriculum specialists to provide more academic challenge to talented students. In some situations, the teachers and parents described the leadership of school principals or superintendents whom they believed were responsible for teachers' instructional practices, and some of these administrators were also strong advocates for the schools' gifted education programs.

Several themes emerged across the 10 sites, including the three themes below. First, the students were viewed as individuals, not as a conglomerate of young people in classrooms. Teachers had a vision for students, not a general "curriculum plan," that guided their efforts. If students already knew the content or how to do something, teachers would modify the curriculum and move on! Second, the educators in these schools were not satisfied with the status quo; they were making changes. They were not just providing lip service to the "reform movement" or "excellence in schools"; they were actively making changes, even when it meant experimenting with new programs and practices. They weren't afraid of change; they embraced it! And finally, a supportive attitude toward capable students was expressed by individuals at these sites.

As with all qualitative research, it is not appropriate for the researchers to make generalizations; rather, the consumers decide if generalizations are warranted. In the Successful Practices Study, the findings from each of the 10 sites and the themes across sites will, hopefully, inform practice and policy making.





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One of the most common complaints by today's students appears in a statement no teacher receives very well — "Awww! This is BORING!" Frantically the teacher searches her files for some "quickie" activity that will miraculously invigorate her students with the passion for learning she had hoped to inspire. However, as Sally Reis, Deborah

Motivating Our Students: *The Strong Force of Curriculum Compacting*

Heather Allenback

University of Connecticut
Storrs, CT

Burns, and Joseph Renzulli (1992) of The National Research Center on the Gifted and Talented at the University of Connecticut have discovered, love for learning has been halted for many students because of repetition within the classroom. Many students have already mastered the material being taught in class, and quickly tune out. As the teacher soon discovers, neither a fantastic lesson nor harder work will stimulate these students. "The sad result is that our brightest students are often left repeating lessons they already know, which can lead to frustration, boredom and ultimately, underachievement" (Reis et al., 1992, p. 2). As a result, Reis et al. devised a strategy for enhancing student achievement called "curriculum compacting." While it was designed for exceptionally bright students, the inherent fostering of positive perceptions of both competence and control allow this strategy to be used by teachers as a motivational tactic within the entire classroom.

What is Involved in Motivation?

It is important to understand the underlying principles of motivation when considering its place in curriculum compacting. An excellent reference to the components of motivation is Cheryl Spaulding's (1992) *Motivation in the Classroom*. In her book, Spaulding discusses the two key components of a student's

perceptions of competence and control in the classroom and then relates six important principles underlying motivation. When referring to motivation, researchers (Deci, 1975; Deci & Ryan, 1985; Lepper & Green, 1978) find that two generic types usually occur—extrinsic and intrinsic. As Spaulding notes,

Individuals are extrinsically motivated when they engage in an endeavor because they expect, as a consequence, to secure a reward or avoid a punishment. In contrast, individuals are intrinsically motivated when they engage in an endeavor because of an inner desire to accomplish a task successfully, irrespective of the rewards or punishments associated with it. (Spaulding, 1992, p. 8)

It is the "inner desire" that we, as teachers, want to and can stimulate in our students through curriculum compacting.

(Continued on page 14)

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The crucial elements to enhancing intrinsic motivation emerge from students' perceptions of their place in the classroom. The relationship between perceptions of competence and perceptions of control develops as a child matures throughout her school life. Fostering these self-perceptions should be a goal of teachers, in order to allow the students to feel confident in the task at hand and experience a positive learning situation. Spaulding (1992) further notes six instructional and management principles effective in guiding teachers to stimulate their students' intrinsic motivation. Essentially, these six principles involve creating a classroom that

- (1) creates a highly predictable environment,
- (2) allows for an appropriate balance between challenging and easy tasks,
- (3) provides a sufficient amount of instructional support,
- (4) promotes control opportunities,
- (5) avoids social comparisons of students, and
- (6) presents novelty, uncertainty, and challenges to the student.

Curriculum compacting, as a strategy for motivating students, supports three of the major principles of intrinsic motivation, as defined above by Spaulding (1992).

Creating Novelty, Uncertainty, and Challenges

The first principle deals with the importance of providing students with interesting and challenging options within the classroom. Spaulding supports the notions of both making class exciting, and yet also promoting the value of academic interests, in order to develop and maintain intrinsic motivation, even if the task is not novel and unusual (1992). Reis et al. (1992) agree with providing novel academic experiences for students in order to challenge them

and stimulate intrinsic motivation. Two of the rationales for compacting the curriculum focus on avoiding repetition and meeting the needs of the students. First, they note past research indicates

*students already know most of their text's content before learning it....In a more recent study dealing with average and above-average readers, Taylor and Frye (1988) found that seventy-eight to eighty percent of fifth- and sixth-grade average readers could pass pretests on basal comprehension skills *before* they were covered by the basal reader. (Reis et al., 1992, p. 12)*

Second, Reis et al. note that many of the needs of high ability students are not met in the classroom. As a result, many students react negatively to a classroom environment they perceive as boring. Ultimately, many bright students believe the best way to cope in the classroom is to do just enough to keep the teacher satisfied—nothing more, nothing less.

The practice of compacting the curriculum for students who show high mastery of a subject area provides students with challenging, yet exciting activities they can pursue with high perceptions of competence and control. The alternatives are numerous, all geared to create exciting options for the student and to promote a positive learning experience from which he/she will *want* to engage in more exploration. Reis et al. (1992) categorize the alternatives around five organizational topics: enrichment in the regular classroom; resource rooms; acceleration; off-campus experiences; and districtwide, schoolwide, or departmental programs. Such an adaptable list of activities allows both the student and teacher to investigate the options and focus on the student's interests. Reis et al. have appropriately utilized the strategy of presenting novel and

challenging independent studies in the classroom—they understand the importance of the student's interests as key factors in motivation.

Providing Instructional Support

As described above, curriculum compacting is a strategy to restructure the regular curriculum for those students who have already mastered the required objectives. In doing so, teachers provide much support for these students by guiding them to the appropriate resources for a successful independent study. Reis et al. (1992) insist, in another rationale supporting curriculum compacting, that modifying both the pace and structure of instruction according to the individual student's needs are key elements in maximizing achievement, particularly for bright students.

Essentially, teachers monitor the actions of the students, allowing them to manage their time and how they will investigate their topic of study. By individualizing instruction,

initial assessment determines where students should begin, and then the students work through the curriculum independently. In individualized programs, students receive more of their content instruction from the curriculum materials than from the teacher, who acts more as a materials manager, tester and progress monitor than as an instructor. (Reis, Burns, & Renzulli, 1992, p. 58)

When compacting the curriculum for a student, utilizing the management plan, "The Compactor," ensures that the student will have a successful experience based on individual abilities, further stimulating internal perceptions of competence. By eliminating the amount of time previously spent on repetitious material, the student is able to focus on activities that are personally more meaningful. Reis et al. (1992) insist

that the teacher quietly monitors the student's progress, making sure to provide the necessary support, but allowing ultimate decisions to be made by the student. Such freedom to successfully accomplish a task designed around one's own interests inevitably promotes intrinsic motivation through self-perceptions of competence and control.

Promoting Control Opportunities

A third, and final, theoretical principle of intrinsic motivation emerges within the strategy of curriculum compacting. While "The Compactor" structures instructional support in a way that promotes perceptions of competence within the student, the enrichment activities pursued during the time saved by compacting also encourage self-perceptions of control. Reis et al. (1992) strongly urge that student interest be considered to ensure a successful compacting experience. "Building educational experiences around students' interests is probably one of the most recognizable ways in which schoolwide enrichment programs differ from the regular curriculum" (Reis et al., 1992, p. 103). This assertion stems from past research that indicates students object to limited choices within the confines of the curriculum and, as a result, negatively view the classroom as a place of very few opportunities. However,

this is not to say that every independent study situation should be without limits. The teacher's own strengths and interests may lead him or her to place certain restrictions on general areas of study (for example, futuristics, colonial history, geology), but within these broad areas a great deal of freedom should be allowed in the selection of specific topics or problems. (Reis et al., 1992, p. 103)

While student interests should be identified by the teacher, Reis et al. warn the teacher not to push a student into independent study at the first sign of interest. Rather, they should encourage exploratory work around an area of interest through "Interest Development Centers." A student's interest can be piqued by including resources that disclose the process or methodology skills that an adult would use in a career field; narrative information; suggestions for specific activities, experiments or research; community resources; and display items.

Obviously, "Interest Development Centers" allow students to take control of learning the subject presented by the teacher. Along with the choice in enrichment activities, such centers provide an abundance of options for the student, a crucial element in curriculum compacting. To a student, the ability to make a choice equals an element of control within the classroom. Ultimately, this perceived control, along with perceptions of competence, will most likely lead to a love for independent learning.

Conclusion

Ultimately, the perceived elements of competence and control by students whose curriculum has been compacted stimulate intrinsic motivation. Reis et al. (1992) have developed a plan that allows a student to explore options, resulting in successful learning experiences and an inner desire to do more. Curriculum compacting

revolves around the student and his/her interests—the teacher is merely a guide, a person there to provide support should the student need it. Sally Reis, Deborah Burns, and Joseph Renzulli have appropriately recognized the importance of individuality in structuring today's curriculum.

All students need learning experiences appropriate to their individual abilities, interests, and learning styles. Individual uniqueness should be respected and provided for, and every effort should be made to adapt learning experiences to their development. (Reis et al., 1992, p. 62)

As an attempt to counter the problem of waning motivation, curriculum compacting emerges as a bold, progressive step to modify an otherwise outdated classroom structure. This classroom strategy promises to excite, enrich, and motivate our students—our future.

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