

# The National Research Center on the Gifted and Talented

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## *NRC/GT Instrument Bank*

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# Introduction

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Connecticut



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Virginia



Yale  
University



University of  
Georgia



City University  
of New York,  
City College

The National Research Center on the Gifted and Talented (NRC/GT) is funded by the Jacob K. Javits Gifted and Talented Students Education Act. Since 1990, we have implemented a comprehensive research agenda that is responsive to practitioners, policy makers, researchers, and other persons and groups that have a stake in developing the performance and potential of young people. During the 20 years, the core research universities included the University of Connecticut and the University of Virginia. Collaborating universities were Yale University (1990-2006), the University of Georgia (1990-1995), Stanford University (1995-2000), City University of New York, City College (1995-2000), and Teacher's College, Columbia University (2000-2005).

Our research agenda is guided by a broadened conception of human potential and the need to develop high-end learning opportunities for students, especially those who may not be identified as gifted and talented through traditional assessment techniques. These young people may live in challenging learning environments and need access to programs and services that will promote high expectations and greater engagement with subject matter.

# Introduction

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We designed and implemented numerous qualitative and quantitative research studies to respond to the research questions based on two national needs assessments and the priorities set by the United States Department of Education. As we implemented studies, it was evident that many appropriate instruments could be selected; however, there was also a need to design, field test, and develop instruments that were unique to specific research questions.

All NRC/GT research monographs provide detailed information about all phases of our studies and the appendices include the instruments we developed. As the research monographs were disseminated, we periodically received requests from other researchers and educators for permission to use the instruments for their own research studies. We always granted the requests and realized that our instruments may be appropriate for many people as they design, develop, implement, and evaluate programs and services for gifted and talented students.

Volume I of The National Research Center on the Gifted and Talented Instrument Bank was well-received. Volume II includes additional instruments from University of Connecticut, University of Virginia, Yale University, University of Georgia, and City University of New York, City College in 4 sections:

Section A: Identification  
Section B: Special Populations  
Section C: Classroom Practices  
Section D: Other Topics

(continued)

# Introduction

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Each study contains the study's title, abstract, and resulting implications, guidelines, or conclusions. This is followed by a description of how the instruments were used and possible suggestions for future use. Although validity and reliability may be affected, instruments may be modified for other uses, and in some cases these other uses have been noted. You will find PDF files on each page that provide a direct link to the specific instrument.

We hope that you find the NRC/GT Instrument Bank useful for your own research, programming, or evaluation agendas. Please let us know how you used the instruments. You may contact us at [www.gifted.uconn.edu](http://www.gifted.uconn.edu) or at the following address:

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# Use of Instrument Bank

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To get to a particular section of this Instrument Bank quickly, click on the section title below:



**Section A: Identification**



**Section B: Special Populations**



**Section C: Classroom Practices**



**Section D: Other Topics**



# Section A


## Identification



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# Abstract

## Identification

### Equity, Excellence, and Economy in a System for Identifying Students in Gifted Education: A Guidebook

#### Instrument:

- ✓ Renzulli Information System: Identification Form

Controversy about which students should be selected for participation in programs for the gifted and talented has existed since the inception of special services for this segment of the school population. In most identification systems that follow the traditional screening-plus-selection approach, the "throw-aways" have invariably been those students who qualified for screening on the basis of non-test criteria. This monograph presents an identification system that attempts to address the excellence, equity, and economic issues. It is designed to be economical in terms of the time and paperwork required for identification, to provide access to special services for both traditionally high scoring students and those students whose potential may only be recognized through the use of a more flexible range of identification criteria.

Grounded in the Three-Ring Conception of Giftedness and the Enrichment Triad Model, and supported by a thorough review of research dealing with the underlying theories, it is flexible enough to accommodate talent potentials in different domains, and it will respect regulations made by district policy makers and state departments of education. It takes into consideration the fact that there is no perfect identification system. It is also firmly based on the assumption that there should be congruence between the criteria used in the identification process and the goals and types of services that constitute the day-to-day activities that students will pursue. This identification system therefore also attempts to activate a much broader range of services and teaching practices that are specifically designed to develop a variety of talents in young people.

Tidiness and efficiency are important to the operation of any complex enterprise, but they should never take the place of our responsibility to do the right thing in the best interests of the young people we serve through special services. Therefore, this identification system proposes that the services be labeled, rather than the students.



# Abstract

## Identification

### Equity, Excellence, and Economy in a System for Identifying Students in Gifted Education: A Guidebook

Rather than labeling a student as "gifted" or "not gifted" this system provides for documenting specific strengths and using these strengths for making decisions about the types of activities and the levels of challenge that should be made available. This system provides for the identification of students who would benefit from services that recognize academic giftedness as well as creative-productive giftedness. It recognizes students with potential and provides opportunities to develop their talents through an integrated continuum of special services.

A key feature of this system is the formation of a Talent Pool that includes students who have been identified by both test and non-test criteria. The system respects and includes students who earn high scores on traditional measures, but leaves room for students who show their potentials in other ways. These potentials are recognized through teacher nominations, using the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS), special nominations, and Action Information nominations. Training activities are provided to help teachers use the various nominations to best serve their students.

This identification system is not as tidy as using cut off scores, but the trade off for tidiness and administrative expediency results in a more flexible approach to identifying and serving young people with great potential.



# Conclusions

## Identification

### Equity, Excellence, and Economy in a System for Identifying Students in Gifted Education: A Guidebook

1. There are many definitions of giftedness, including academic giftedness that is usually expressed through high grades and test scores, and creative-productive giftedness that is often expressed as the production of an original product, and so identification systems vary.
2. In an effort to be "tidy" and efficient, traditional identification systems primarily utilize test scores and grades to identify high academic achievers, but they may not identify children who are talented in other ways.
3. Although there is no perfect identification system, there should be congruence between identification procedures and day to day activities that students pursue.
4. One method of equitable identification is the formation of the school Talent Pool. Based on the Schoolwide Enrichment Model, nominations for the Talent Pool are derived from a combination of test scores and non-test criteria. Non-test criteria may include nominations from parents, community members, or the students themselves.
5. Careful consideration must be directed into forming a school's Talent Pool. A team must be established and students' academic records must be reviewed. Approximately 50% of the Talent Pool should come from this process. The remaining 50% should come from teacher ratings through The Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS), along with alternative pathways for nominations.
6. Programs that redirect the focus of identification procedures from ability for ability's sake to individual levels of performance and potential actually strengthen program quality and excellence in student performance.





# Renzulli Identification System: Information Summary Form

## Identification

Equity, Excellence,  
and Economy in a  
System for Identifying  
Students in Gifted  
Education: A  
Guidebook

Renzulli Identification  
System: Information  
Summary Form

### How this instrument was used:

This instrument is used to summarize and document qualifying information about a student who is recommended for Talent Pool placement under the Schoolwide Enrichment Model (SEM). The instrument allows a variety of information to be tracked, including academic performance, current teacher ratings, special nominations from previous teachers, and summary information for alternative pathways such as parent, peer, and product ratings.

### Possible uses:

- Enrichment specialists and classroom teachers may use this form to identify and document summary information on students recommended for the school's talent pool, or to develop talent/interest groups or clusters.
- Guidance counselors might use the form to develop a school profile of student strengths.
- District personnel might aggregate student information to develop a true profile of the learning characteristics of their student population.
- Parents might find the form helpful in assessing the strengths of their child.



# Abstract

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### Instruments:

- ✓ The Survey
- ✓ Semi-structured Observation Protocol
- ✓ Primary Students' Behaviors Worthy of Additional Consideration

Despite the ongoing, extensive focus on the more equitable representation of gifted students from diverse populations, poor and minority students remain underserved by gifted education proportional to their representation in the broader student population (Donovan & Cross, 2002; U. S. Department of Education, 1993). One possible factor contributing to the inadequate under-representation of poor and minority students in gifted programs is an inadequate understanding of the roots of the problem in the earliest years of school. Failure to identify and develop talent in very young children has been linked to subsequent negative outcomes in cognitive, academic, social and affective development (Neihart, Reis, Robinson, & Moon, 2002). The National Research Center on the Gifted and Talented (NRC/GT) at the University of Virginia conducted a two-phase, mixed-methods study designed to explore the beliefs and practices of teachers at the primary school level (grades K-2). Of particular interest were (a) teachers' beliefs about the nature of giftedness in young students; (b) teachers' beliefs about how giftedness is manifested and distributed across cultural and socioeconomic groups of young students; and (c) teachers' classroom practices related to talent development in the primary grades. In this way, the study considered both teachers' attitudes and beliefs about giftedness and the translation of these beliefs into instructional practices related to perceived student potential.



# Abstract

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

In addition, the study explored the pedagogical potential of equipping teachers with context-specific lessons that incorporate strategies most likely to uncover and develop talent in previously unrecognized gifted students. The first phase of the project involved a multidisciplinary review of the relevant literature to determine those attributes, principles, and recommendations for identifying talent in at-risk, disadvantaged, and culturally diverse young children. The general themes from these literatures informed the development of a survey designed to assess primary grade students from diverse backgrounds. The second phase of the study involved intensive classroom observations by trained participant observers in primary grade classrooms in six diverse elementary schools. The purpose of this phase of the project was to extensively describe and document the classroom context and to determine the degree of consistency between teachers' philosophies about giftedness and talent and their classroom practices aimed at nurturing and developing talent in all students, particularly those from under-represented groups. Findings from both phases of this study revealed consistent patterns in four interrelated areas: (a) factors internal to the teacher; (b) forces on the teacher outside the self, (c) teacher behaviors, and (d) observable student behaviors and verbal responses which operate in concert to shape the course of talent development for typically underserved children in primary grade classrooms.



# Implications and Recommendations

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### Teachers' Internal Factors About Developing Talent in Diverse Primary Grade Students

1. As this study has chronicled, teachers in the first decade of the twenty-first century still hold traditional beliefs about what it means to be gifted and talented in the earliest years of public education, and as a result, what their appropriate educational responses might or should be. Despite several decades of evolving understanding about this issue and dozens of targeted efforts to help teachers reconsider these views (including Jacob K. Javits funding earmarked for this purpose), the issue remains. The field of gifted education needs to continue to court and nurture their relations with general education, particularly at the often-overlooked primary grade level. With a partnership, gifted education may have the potential to help shape primary grade teachers' experiences, beliefs, and ultimately their practices.
2. With this in mind, elementary schools must purposefully select teachers whose backgrounds and beliefs support efforts to develop talent in primary grade children. Additionally, a targeted effort must be made to recruit (and then nurture for long-term retention) a diverse pool of educators who reflect the increasingly diverse cultural, ethnic, and class groups in contemporary public schools. Building on the work of Alexander et al. (1987) and Delpit (1995), it may make sense to consider the strategic pairing of teachers with students, even for flexible periods during the instructional day or week, so as to ensure that students of all racial, ethnic, and class groups see models of talented, capable professionals like themselves in successful roles in the community. Another possible alternative is to employ a diverse pool of mentors from the community to pair with students from like backgrounds and provide times for the individuals to share their experiences, challenges, and successes.





# Implications and Recommendations

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### Teachers' Internal Factors About Developing Talent in Diverse Primary Grade Students

3. A third recommendation for updating teachers' internal beliefs about talent development in diverse primary children is to directly and overtly confront their misconceptions and outdated knowledge about the topic through high-quality, on-going professional development. As noted in the change literature, it is a formidable challenge to modify deeply-held belief structures, particularly when the beliefs are intertwined with politics and contemporary social policy. The effects of professional development can be enhanced, by balancing opportunities for acquiring new information about talent development, and then providing time and support for assimilation of this new information into the teachers' own classroom contexts. Central to the content of the professional development should be information about classroom approaches for primary grade classrooms as well as mentored opportunities to put this information into practice with the support of a coach or mentor, to further increase the likelihood of developing or refining reflective practices.





# Implications and Recommendations

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### The External Forces That Affect, Shape, or Moderate Teachers' Beliefs and Practices

1. The current curriculum reality in public schools in the NCLB era, particularly those schools with the highest concentrations of poverty, school failure, and often under-represented populations of students in typical gifted education programs, includes scripted curriculum programs in reading, language arts, and mathematics. In the case of this study, the adoption of these scripted programs translated into teachers seeking only low-level, factual information and class lessons focused on repetitions of math algorithms to solve lists of decontextualized equations. Given this scenario, the field of gifted education must author position papers regarding the ill-fit of scripted curriculum for gifted students and its incompatibility with the philosophy of talent development. If students are given little to no opportunities to respond to open-ended, abstract questions, issues, and problems, it is little wonder why the students fail to be able to produce such later in their educational careers. Beyond position papers, the field must continue research efforts in this area to determine the long-term consequences of narrowed curriculum and instruction. With this information, advocates of gifted education and talent development must raise awareness of the incompatibility of didactic curriculum and instruction on the long-term development of talent in all students, but particularly those students from under-represented populations. If the goal of gifted education is to develop critical and creative thinkers who are able to reason, problem solve, and critically analyze potential answers for their degree of fit, students must be given opportunities to do so in the context of learning.
2. District and schools seeking to increase the quality of their primary grade programs should invest resources to develop, modify for the given context, and ensure the appropriate utilization of high-quality, differentiated lessons in the primary grades. As the model lessons in this study provided teachers with an alternative image about what curriculum and instruction could be, so too could locally-developed curricular and instructional resources continue to support on-going professional development initiatives in this area.

(continued)



# Implications and Recommendations

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### Teachers' Instructional Habits and Practices

1. To increase teachers' capacity for developing talent in diverse primary grade learners, they must be involved in high-quality, on-going professional development aimed at changing and adding specific behaviors to their classroom routines and practices. As part of this development opportunity, the training sessions must include opportunities for modeling in settings that resemble the classrooms in which the teachers work, incorporate respectful management approaches into the teaching and training, provide mentors to help teachers work through challenging situations through reflection, and provide direct opportunities to confront their existing belief systems rather than follow rote procedures typical of NCLB-era school reform initiatives. This is particularly urgent for struggling low-income schools.



# Implications and Recommendations

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

#### Students' Talent Behaviors

1. Leaders of gifted programs as well as the elementary school personnel who teach in the varied primary grade programs should re-examine the system for identifying young potentially gifted children. Modifications should include the use of context-driven, dynamic assessment of students' varying behaviors versus the heavy reliance upon standardized instruments and highly-biased teacher and parent referral forms. Districts and schools should consider the development and use of a variety of tools (and provide sufficient training to be able to appropriately implement them) that consider the broad range of talent indicators as well as specific behaviors to overlook. One such document that emerged from the findings of this study has been developed as an observation tool intended for formative assessment of students' developing potential. This instrument is not intended for one-time observations conducted by individuals unfamiliar with the classroom context for the purposes of high-stakes decisions about gifted program placement. Rather, this instrument is intended for use by teams of individuals representing varying degrees of familiarity with the classroom context. The purpose of collecting information with this tool is to provide key stakeholders several prompts from the recent literatures broadly related to talent development to guide the *services* necessary to develop talent in diverse primary grade learners.





# The Survey

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation



### How this instrument was used:

This instrument consists of six sections: Conceptions of Giftedness (teachers' beliefs about the meaning and manifestations of giftedness); Instructional Practices (classroom practices in general and as related to talent development); Identification of Talent (teachers' valuation of students' characteristics when nominating students for placement in gifted programs); Student Readiness (teachers' beliefs about students' readiness); Demographics (educational and professional background and current classroom characteristics); and Case Studies (two different cases – one of a student manifesting typical gifted traits – “Brian”, and then one of three profiles of students exhibiting talent indicators that are either masked or overshadowed by poverty, dominant language, cultural traditions, health status, or other mitigating circumstances – Alexis, Cory, or Maria). The majority of the survey items use a Likert-type scale. In the open-ended case study section, teachers are asked to recommend educational adjustments for a student given particular characteristics and to provide their rationale for the adjustments they suggest.

### Possible uses:

- District coordinators or administrators might use the form in professional development sessions having to do with the identification of and ways to serve gifted and talented students.
- Administrators might use the form to aide them in evaluations of gifted and talented classrooms.
- Classroom enrichment teachers could use the form as a checklist of good practices for gifted and talented students or to evaluate their own classrooms.
- Parents could use portions of form as an informal checklist when observing their children's classrooms.



# Semi-Structured Observation Protocol

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

Semi-Structured Observation Protocol

#### How this instrument was used:

The semi-structured observation protocol included four sections—the classroom context (including a description of the physical, material, and human resources in the school and classroom, room configuration, and classroom routines); the interactions between the teacher and students (including the types and frequency of individual student feedback, praise/reprimand ratios, types and frequency of student/student interactions); learning experiences (including the specific curriculum, instruction, and assessment experienced by the children); and the students (including individual students' profiles, particularly characteristics of demonstrated or potential giftedness and talent.)

#### Possible uses:

- Teachers could observe each master teachers' classrooms using the form as a guide, which may help integrate good practices into their own.
- University professors training teacher candidates could use this to teach good pedagogical practices, particularly for the gifted and talented students, by distributing the instrument and having candidates complete it as an assignment during their practicum experiences.
- Parents could use portions of the form as an informal observation guideline when evaluating gifted/talented programs and classrooms.
- Professional development coordinators could use the form in conjunction with a video that presents an actual lesson, and have participants use the form to evaluate the video—which practices were effective and which were ineffective?



# Primary Students' Behaviors Worthy of Additional Consideration

## Identification

### Primary Grade Teachers' Conceptions of Giftedness and Talent: A Case-based Investigation

Primary Students' Behaviors Worth of Additional Consideration

#### How this instrument was used:

This instrument was developed as an observation tool intended for formative assessment of students' developing potential. The instrument is not intended for one-time observations conducted by individuals unfamiliar with the classroom context for the purposes of high-stakes decisions about gifted program placement. Rather, this instrument is intended for use by teams of individuals representing varying degrees of familiarity with the classroom context. The purpose of collecting information with this tool is to provide key stakeholders several prompts from the recent literatures broadly related to talent development to guide the *services* necessary to develop talent in diverse primary grade learners.

#### Possible uses:

- Teachers might use the form to think about target behaviors of students in their classrooms that may have been overlooked for identification.
- Training coordinators might use the form to prompt discussion among teachers at training workshops relating to identification issues.
- Parents could use the form to informally begin to assess their own children's talents and to alert them to the need for gifted and talented services.
- University educators could use the form to educate teacher candidates about good identification practices for primary students.
- Guidance counselors could use the form to informally evaluate children who have been referred for emotional counseling to determine if there are gifted/talented psychosocial issues involved.



## Section B

# Special Populations









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## Special Populations

### Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students

#### Instruments:

- ✓ Parent/Guardian Survey
- ✓ Student Interview Protocol
- ✓ Teacher Survey
- ✓ Parent Interview Protocol

## Abstract

This qualitative study examined personal (socio-emotional, linguistic, and cognitive aspects) and cultural characteristics of high ability, Hispanic, bilingual students in an urban elementary school, their educational experiences, and their home, school, and community environments. Case study research methods, including ethnographic interviews, participant observation, and document review were employed to gather and analyze data. The analysis of data generated themes and patterns that enabled the researcher to compare and contrast the cases. An in-depth description of each high ability, Hispanic, bilingual student provided a better understanding of his/her affective needs, interests, and abilities, as well as the school and home factors that supported academic achievement, talent development, and bilingualism.

The home and school environments of the participants played essential roles in their socio-emotional and cognitive development. Due to the young age of the participants, parents', teachers', and significant others' attitudes, behaviors, and decisions, rather than willingness or personal motivation, appeared to determine the participants' development of talents and bilingualism. The home factors identified as influencing participants' cognitive and linguistic development were emotional support, family values such as respect or "respeto," "be good," "family first," "education," "see the world," and "be someone." Other factors included strong maternal role, Hispanic legacy, and maintenance of the Spanish language. Three major school factors appeared to support academic achievement and talent development in the 12 Hispanic, bilingual students: safe school environment, flexible grouping, and English support for those students who needed language development. A series of conflicting issues related to the characteristics, values, and perspectives of the school and home cultures emerged.



# Conclusions

## Special Populations

### Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students

1. Home factors influencing talent development of high ability, Hispanic, bilingual students include emotional support, family values (e.g., respect, family, education, career), maternal role, role models from extended family, Hispanic legacy, maintenance of the Spanish language, and trips to the country of parents' origin.
2. School factors influencing talent development of high ability, Hispanic, bilingual students include a safe school environment, flexible grouping, and English support, when necessary.
3. Teachers of high ability Hispanic students often have little or no knowledge of the language spoken at home. They have the impression, if a student is not in English for Speakers of Other Language (ESOL) classes, that the student is not bilingual, when in fact many are also biliterate. Teachers show a limited understanding of the meaning and practices of multiculturalism.
4. The assessment of Hispanic students should be measured by standards reflecting their ethnic and cultural background.
5. Direct communication needs to be established between school and Hispanic parents including information regarding identification procedures for gifted programs, and methods that parents can use to help their children at home.
6. Professional development needs to be established to help staff understand cultural, linguistic, and learning style differences among high ability, Hispanic students.
7. Classroom teachers should have access to information regarding the linguistic history and current level of Spanish usage of their high ability, Hispanic students.

Kloosterman, V. I. (1999). *Socio-cultural contexts for talent development: A qualitative study on high ability, Hispanic, bilingual students* (RM99142). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





# Parent/Guardian Survey

## Special Populations

**Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students**



### How this instrument was used:

Parents or guardians completed this short survey, available in both Spanish and English, on their children's interests, abilities, and languages spoken at home.

### Possible uses:

- Teachers could use this instrument to familiarize themselves with the interests, abilities, and languages of any students, but especially their Hispanic students.
- Social workers, guidance counselors and others could adapt the form to provide information on children they service.
- Club advisors might use the form to determine children's strengths and areas of interest.
- Enrichment coordinators could use the form while planning Type I enrichment activities.



# Students' Interview Protocol

## Special Populations

**Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students**



### How this instrument was used:

Researchers used the instrument to guide in-depth structured interviews with Hispanic students.

### Possible uses:

- School psychologists could adapt the form to use as an informal interview prior to additional, more formalized assessment.
- Teachers could use the instrument as a guide in developing "Getting to Know You" questionnaires at the beginning of the school year.
- Teachers or school administrators could use the form as a guide while conducting parent/teacher conferences.



# Teacher Survey

## Special Populations

**Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students**



### **How this instrument was used:**

Teachers completed this short survey, available in both Spanish and English, on their students' interests, abilities, and languages spoken at home.

### **Possible uses:**

- School psychologists could adapt the form to use as an informal interview prior to additional, more formalized assessment.
- Teachers could use the instrument as a guide in developing "Getting to Know You" questionnaires at the beginning of the school year.
- Teachers or school administrators could use the form as a guide while conducting parent/teacher conferences.



# Parents' Interview Protocol

## Special Populations

**Socio-cultural Contexts for Talent Development: A Qualitative Study on High Ability, Hispanic, Bilingual Students**



### How this instrument was used:

Researchers used the instrument to guide in-depth structured interviews with parents of Hispanic students.

### Possible uses:

- School psychologists could adapt the form to use as an informal interview prior to additional, more formalized assessment.
- Teachers could use the instrument as a guide in developing "Getting to Know You" questionnaires at the beginning of the school year.
- Teachers or school administrators could use the form as a guide while conducting parent/teacher conferences.





# Special Populations

## Factors Affecting the Career Decision Making of Minority Teachers in Gifted Education

### Instrument:

- ✓ Teacher Career/Vocational Choice Survey

# Abstract

On a daily basis, our school student population is becoming increasingly diverse. Conversely, the teaching force is rather homogeneous relative to race and ethnicity. Now, more than ever before, educators are seeking ways to respond affirmatively to the changing demographics of the student population. Many schools have initiatives that target recruiting and retaining a more racially, ethnically, and linguistically diverse teaching force. The focus on teacher diversity is most evident in the general education literature, where a consistent body of work indicates that minority groups are sorely under-represented in the teaching profession. Comparatively speaking, little attention has focused on the presence of minority teachers in gifted education. This study seeks to address this void. It looks at factors affecting the decision of minority groups to become teachers in gifted education.

Forty-four minority teachers participated in this study. Interestingly, while 42% of the teachers reported that they currently work with gifted students, few shared their reasons. More teachers discussed why they had *not* become teachers of gifted students. Two themes related to social reasons and two related to personal reasons. Social reasons related to lack of administrative support and lack of interest and philosophy (i.e., the belief that “all children are gifted”). Likewise the minority teachers identified social and personal reasons for becoming teachers of gifted students. Some teachers also shared how their experiences with special education students influenced their vocational choice. For instance, several teachers shared concerns regarding negative experiences in special education, as well as experience in working with gifted students with special needs. Social or external reasons for becoming teachers of gifted students included support and encouragement from colleagues and administration. Personal reasons included an interest in gifted students, primarily curiosity and intrigue about these students, and a determination to demonstrate that minority teachers can be competent gifted education teachers.

Although a national study, the findings are limited due to the small sample size. Future studies must be conducted with larger numbers of teachers. Nonetheless, a critical factor identified in this study and others is the need for more administrators and school districts to encourage minority groups to enter gifted education.



## Special Populations

### Factors Affecting the Career Decision Making of Minority Teachers in Gifted Education

# Conclusions

1. Expose, encourage, and support minority students during middle and high school. Because of a lack of interest in teaching gifted students, minority groups must be reached early. Teachers and counselors will need to encourage minority students to consider a teaching career in general and gifted education in particular.
2. Expose, encourage, and support minority groups during pre-service training. Colleges and universities should actively recruit minority teachers into their gifted education programs. Part of this recruitment requires exposing all teachers to the field of gifted education. For example, regardless of whether teachers are interested in working in general or special education, they are likely to come into contact with gifted students. Accordingly, future teachers require exposure to gifted education relative to identification and assessment, curriculum and instruction, and social and emotional needs/development.
3. Expose, encourage, and support minority teachers during their teaching careers. Assignments to gifted education classes should be based on teachers' training and experiences, as well as interest. For many of the minority teachers in the current study, an interest in working with gifted students was present; the opportunity was not. Thus, there must be greater administrative support for minority teachers to pursue teaching experiences and opportunities in gifted education. For teachers in this study, such support might entail staff development and formal educational opportunities. Minority teachers should be encouraged to pursue a specialization or certification/endorsement in gifted education, as well as given the opportunity to attend conferences and workshops in gifted education. The staff development opportunities offered by districts should also focus on gifted students, thereby increasing all teachers' exposure to gifted education.

Ford, D. Y. (1999). *Factors affecting the career decision making of minority teachers in gifted education* (CRS99212). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.



# Teacher Career/Vocational Choice Survey



## Special Populations

Factors Affecting the Career Decision Making of Minority Teachers in Gifted Education

Teacher Career/  
Vocational Choice  
Survey

### How this instrument was used:

Teachers completed this 40 item mixed-methods survey to inform researchers about background experiences related to why they did or did not become gifted teachers.

### Possible uses:

- Administrators could use the instrument to familiarize themselves with teachers' motivations and background experiences, as well as to assess how knowledgeable teachers are about gifted services in their districts.
- Professional development coordinators or trainers might adapt and use the survey prior to planning or implementing workshops to ascertain teachers' previous experiences and motivation.



# Special Populations

## The Effects of Dynamic Pedagogy on the Mathematics Achievement of Ethnic Minority Students

### Instruments:

- ✓ Teacher/Student Interaction Protocol and Scoring Rubric
- ✓ IUME Dynamic Pedagogy Exit Questionnaire

# Abstract

This research describes the implementation of an intervention called *Dynamic Pedagogy* and its effects on the academic achievement of ethnic minority students in the third grade during the first year and the third and fourth grades during the second year. For the first year, 10 third grade teachers participated in the study, 2 from each of 5 schools. For the second year, 8 third grade teachers (2 returning teachers and 2 new teachers) from 2 schools and 2 fourth grade teachers participated in the study.

The results regarding the impact of *Dynamic Pedagogy* on the academic achievement of students at the third and fourth grade levels were mixed. The pilot year data showed significant effects of *Dynamic Pedagogy* on a third grade mathematics achievement test and district assessments in target mathematics units. The second year data showed significant effects of *Dynamic Pedagogy* on a fourth grade mathematics achievement test but the results on the district assessments were not significant. These results were obtained for a sample of students who were exposed to the *Dynamic Pedagogy* treatment the previous year. Similarly, the results were mixed for a new cohort of students at the third grade level. Although there were school effects, as in the previous year on the third mathematics achievement test, the results showed no significant differences between students in the *Dynamic Pedagogy* and non-*Dynamic Pedagogy* groups on the district assessments. These results should be read with caution since there were clear limitations to the study, including non-random sample and significant interaction between the covariate and grouping variables. Our analyses of race/ethnic comparisons on mathematics achievement were also mixed, indicating that *Dynamic Pedagogy* had a differential impact on different race/ethnic groups.



# Implications

## Special Populations

The Effects of  
Dynamic Pedagogy  
on the Mathematics  
Achievement of  
Ethnic Minority  
Students

1. Curriculum, instruction, and assessment are interdependent processes.
2. Teacher thoughts and decisions about curriculum, instruction, and assessment are centered around learners' strengths and needs before, during, and after classroom practice.
3. Students are responsive to the teacher's decisions and actions about curriculum, instruction and assessment in ways that promote their learning.





# Teacher-Student Interaction Protocol and Scoring Rubric

## Special Populations

### The Effects of Dynamic Pedagogy on the Mathematics Achievement of Ethnic Minority Students

Teacher-Student Interaction Protocol and Scoring Rubric

#### How this instrument was used:

The semi-structured protocol was used in combination with the Scoring Rubric during observations of third and fourth grade teachers to assess the level and quality of teacher/student interactions in the *Dynamic Pedagogy* model. Observed variables included student engagement, quality of interactions, and fidelity to *Dynamic Pedagogy* curriculum.

#### Possible uses:

- Program coordinators or administrators might use the instrument to evaluate the quality of teacher/student interactions in the classrooms.
- Parents might use the (modified) instrument to assess student engagement and quality of teacher/student interactions during an observation of their children's actual or potential classes.
- Researchers could adapt the instrument to be used in a study concerning interactions in the classroom.
- Students could use the instrument to evaluate their classrooms in an effort to provide feedback to teachers or parents.



# IUME Dynamic Pedagogy Exit Questionnaire

## Special Populations

The Effects of  
Dynamic Pedagogy  
on the Mathematics  
Achievement of  
Ethnic Minority  
Students



IUME Dynamic  
Pedagogy Exit  
Questionnaire

### How this instrument was used:

This 5- and 6-point Likert scale instrument was used at the completion of the study to determine third and fourth grade teachers' opinions on elementary students, mathematics teaching, and the *Dynamic Pedagogy* curriculum.

### Possible uses:

- District coordinators might modify and use the survey to evaluate teachers' attitudes towards students and mathematics teaching to plan curriculum, adopt textbooks, or coordinate workshops.
- Teachers might use the instrument to assess parental attitudes towards the teaching of mathematics.
- Parents might use the (modified) instrument to assess teachers' attitudes towards the teaching of mathematics.
- Researchers could adapt the instrument to be used in a study concerning attitudes relating to mathematics instruction.





# Abstract

## Special Populations

### Performance of Economically Disadvantaged Students Placed in Gifted Programs Through the Research-based Assessment Plan

#### Instruments:

- ✓ Scale for Rating Student's Participation in the Local Gifted Education Program
- ✓ Parent Questionnaire Regarding Child's Gifted Class Performance

The performance of students identified as gifted through the Research-Based Assessment Plan (RAP) was studied during their first year of placement in gifted programs. Their attitudes and the attitudes of their parents toward the gifted program placements were also studied. Performances and attitudes of parents and students identified through traditional criteria were used as a comparison. Results of MANOVAs showed that RAP identified students and traditionally identified students displayed significantly different performances and attitudes. On teacher ratings of performance, RAP identified students received higher ratings than traditionally identified students on Interaction with Others, while traditionally identified students exceeded RAP identified students' ratings on Use of Critical Thinking. On the student attitude instrument, RAP identified students were higher than traditionally identified students on four items: (a) Help Teachers Plan, (b) Learn Outside the Classroom, (c) Sit with Friends, and (d) Work on Special Things. No significant differences were found in parent attitudes, which were generally positive from the parents of both traditionally identified students and RAP identified students. These results provide a beginning foundation for the validity of the RAP as a process for identifying economically disadvantaged students as gifted.





# Conclusions

## Special Populations

### Performance of Economically Disadvantaged Students Placed in Gifted Programs Through the Research-based Assessment Plan

1. Teachers did not perceive a difference in the level of performance between traditionally identified students and Research-Based Assessment Plan identified students.
2. Traditionally identified students rated higher on critical thinking assessments than Research-Based Assessment Plan students suggesting that exposure to high level thinking skills needs to be stressed for these students.
3. Research-Based Assessment Plan identified students had generally positive attitudes about the gifted programs and in particular found opportunities to interact and work with friends.
4. The parents of both traditionally and Research-Based Assessment Plan identified students were basically high in their ratings of the gifted programs and each group held similar concerns for children.





# Scale for Rating Students' Participation in Gifted Program

## Special Populations

Performance of Economically Disadvantaged Students Placed in Gifted Programs Through the Research-based Assessment Plan

Scale for Rating Students' Participation in the Local Gifted Education Program

### How this instrument was used:

This instrument was designed to obtain a gifted education teacher's rating of a student's participation in the gifted program. The instrument contains 10 items with a five point Likert-scale (1=very low; 5=very high).

### Possible uses:

- TAG teachers and regular classroom teachers might use the instrument to assess factors relating to a student's participation in the gifted education program (e.g., enthusiasm, contributions, interactions, etc.), which may become part of a student's portfolio.
- Parents or administrators could modify the instrument to evaluate gifted program content and/or instructors.
- School guidance counselors could use the form to guide discussions with classroom teachers when evaluating student attitude and/or performance.



# Parent Questionnaire Regarding Child's Gifted Class Performance

## Special Populations

Performance of Economically Disadvantaged Students Placed in Gifted Programs Through the Research-based Assessment Plan

Parent Questionnaire Regarding Child's Gifted Class Performance

### How this instrument was used:

This instrument was designed to obtain parents' perceptions of their child's performance in the gifted program. The instrument contains 22 items with a five point Likert-scale (1=very low; 5=very high), and evaluates such areas as parents' perception of their child's adjustment to the school and gifted program, their child's perceived performance in the program and benefits derived from participation in the program.

### Possible uses:

- Talented and gifted teachers and regular classroom teachers might use the instrument to improve understanding of parental concerns.
- School administrators or guidance counselors could use the instrument to determine parental concerns at a schoolwide level.
- The instrument could be modified for completion by the student.



# Special Populations

## A Study of Musical Talents and Persons With Williams Syndrome

### Instruments:

- ✓ Music and Minds Application
- ✓ Parent Interview Protocol
- ✓ Participant Interview Protocol
- ✓ Daily Journal

# Abstract

This study investigated the implications and impacts of a strengths- and interests-based program on a special needs group of young adults with Williams Syndrome (WS). The Music and Minds program was designed through the collaboration of educational psychology professors specializing in gifted and talented education with faculty members in music, drama, and creative movement.

The Schoolwide Enrichment Model (SEM), a comprehensive, well-researched approach to enrichment, was selected as the conceptual framework for Music and Minds. Instruments used were either developed specifically for the study or adapted from SEM programs to provide group profiles and individual insights into interests and learning preferences.

The participants, 8 female and 8 male young adults with WS, exhibited a strong affinity for music and sound. There was a wide range of demonstrated musical ability, operationally defined as, “the ability to understand and improvise in music, as well as the high level of skills, both potential skill areas and those present that can be developed in music.”

Findings from the 10-day residential program showed that when academic learning was incorporated into an enriched music-infused curriculum, achievement increased and enthusiasm for learning was enhanced. Most notable was an increased willingness on the part of the participants to investigate new areas and ways of learning. When the students were given opportunities to combine academic and arts experiences, they were more likely to explore and persist in trying to increase skills in deficit areas.



## Special Populations

### A Study of Musical Talents and Persons With Williams Syndrome

# Implications

When offered opportunities to find and develop their potential talent areas, participants responded with enthusiasm for learning and a willingness to work on previously underdeveloped skills. They responded to higher levels of expectation on the part of staff. In the case of these participants, an integrated approach to learning that included music proved to be a successful way to engage them with challenging content. This talent development approach proved to be successful. Participants gained skills both in music and in math (an area of demonstrated academic deficit).

Educators should attempt to avoid the usual assessment stance of primarily focusing on disturbances or negative symptoms in this population. While school psychologists and special education teachers often base their work on deficits because of the Individual Education Plan process, positive behaviors and characteristics can also be used to construct educational plans that address enrichment opportunities and talent development activities as well as deficits.

Most participants were limited by self-held, firm, and sometimes inaccurate beliefs about their ability to learn certain skills. Participants consistently told researchers what they could not do, explaining that their teachers had told them they could not do certain things from the earliest days of school.

These findings highlight the need for educators to develop knowledge about the ways music can be used to increase interest and teach skills in academic areas. In addition, by offering persons with WS a broad selection of music and enrichment experiences in a talent development model, educators might increase the possibility that these individuals could engage in a wider variety of musical experiences. Developing programs for this population that include appropriate curriculum, along with instruction in music, more information about individual preferences, interests, learning styles, and music abilities is essential.

Reis, S. M., Schader, R., Milne, H. J., Bloomer, R., Shute, L., Williams, G., et. al (2002). *A study of musical talents and persons with Williams Syndrome* (RM02173). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





# Music & Minds Application

## Special Populations

### A Study of Musical Talents and Persons With Williams Syndrome



#### How this instrument was used:

This application was used to gather preliminary data about participants' previous musical training, general musical abilities, musical aspirations, previous away-from-home experiences, academic skills and other educational experiences, self-care skills, personality traits, habits, and interests.

#### Possible uses:

- Program coordinators or teachers would find this instrument useful for the purposes of student identification.
- Curriculum coordinators or teachers could use the instrument to identify the needs of students—information that might then be used to tailor curriculum and instruction.



# Parent Interview Protocol

## Special Populations

### A Study of Musical Talents and Persons With Williams Syndrome



#### How this instrument was used:

This protocol was designed and used to gather preliminary data about participants' demographics, developmental history, educational experiences and skills, musical talent development and skills, enrichment opportunities, social skills, self-organizational skills, hobbies and recreational interests, employment skills, and types of aptitude, achievement, or nonverbal instruments administered.

#### Possible uses:

- Program coordinators or teachers would find this instrument useful for the purposes of student identification and for the acquisition of developmental history and experiences.
- Curriculum coordinators or teachers could use the instrument to identify the needs and abilities of students—information that might then be used to tailor curriculum and instruction.



# Participant Interview Protocol

## Special Populations

### A Study of Musical Talents and Persons With Williams Syndrome



#### How this instrument was used:

This protocol was developed and used to gather information about participants' perceptions of themselves, views of being different and/or the same as others, previous medical and health history, education history, talent development history, hobbies and recreational interests, academic achievement, social skills, organizational skills, and employment and work skills.

#### Possible uses:

- Counselors could find this protocol useful in assessing musically-inclined Williams Syndrome students' perceptions of themselves, their self-efficacy and self-concept, their talents and skills, and their prior experiences in health and education.
- This instrument can be altered to be more inclusive of other students.





# Daily Journal

## Special Populations

### A Study of Musical Talents and Persons With Williams Syndrome

Daily Journal

#### How this instrument was used:

These five journal prompts were used to collect information to develop appropriate programming for the participants.

#### Possible uses:

- Program coordinators, teachers, or enrichment coordinators would find this instrument useful for the purposes of evaluating the effectiveness/results of certain lessons, programs, or classes.
- Teachers could use this instrument to assess and record student progress and interest daily throughout a lesson, unit, or semester.



# Section C

## Classroom Practices



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## Classroom Practices

### Project START: Using a Multiple Intelligences Model In Identifying and Promoting Talent in High-risk Students

#### Instrument:

- ✓ Project START: Classroom Observation Checklist

## Abstract

Project Support to Affirm Rising Talent (START) was a three-year collaborative research effort undertaken jointly by The University of Virginia site of The National Research Center on the Gifted and Talented (NRC/GT) and the public schools of Charlotte-Mecklenburg, North Carolina. The researchers at the NRC/GT and the school personnel agreed to develop a program based on Howard Gardner's (1983) Multiple Intelligences (MI) theory. The specific purposes of the study were to: (a) develop identification procedures based upon Howard Gardner's theory; (b) identify high-potential primary age students from culturally diverse and/or low economic backgrounds through use of Gardner's framework; (c) investigate the reliability and validity of the identification procedures; and (d) test the efficacy of specific interventions on achievement and attitudes about school and self of identified students. Identified students were assigned to one of three conditions: (a) an experimental condition that consisted of modification of classroom activities and a family outreach program; (b) an experimental condition that consisted of modification of classroom activities, a family outreach program, and a mentorship; or (c) a control group. Assignments to the treatment groups were made according to school the child was attending. Schools had been randomly assigned the condition. Control group students were in all schools, but their teachers were not trained in the intervention procedures and they did not have a mentor and their families were not invited to participate in the family outreach program.



## Classroom Practices

### Project START: Using a Multiple Intelligences Model In Identifying and Promoting Talent in High-risk Students

# Conclusions

1. Traditional means of assessment limit views of talent and potential in low income, minority students.
2. Broadened conceptions of giftedness make sense to teachers and help change perceptions and attitudes towards students.
3. Application of Multiple Intelligence Theory leads to optimistic thinking about students and their non-traditional strengths.
4. Multiple Intelligence Theory provides a framework for the creation of more flexible, student-centered learning environment.
5. Teachers tend not to associate “success” with high maintenance students’ demanding personalities and behavior problems.
6. Recognition and a demonstration of belief in their talents and strengths positively impact students' attitudes toward themselves and their school.
7. Parents of high-risk students stand in need of, and respond to, positive messages and a change of attitude.
8. Recognition and a demonstration of belief in the talents and strengths of their children positively impact parents' attitudes toward school.

Callahan, C. M., Tomlinson, C. A., Moon, T. R., Tomchin, E. M., Plucker, J. A. (1995). *Project START: Using a multiple intelligences model in identifying and promoting talent in high-risk students* (RM95136). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





# Project START Classroom Observation Checklist

## Classroom Practices

**Project START:  
Using a Multiple  
Intelligences Model  
In Identifying and  
Promoting Talent in  
High-risk Students**

**Project START  
Classroom  
Observation Checklist**

### **How this instrument was used:**

This observational instrument was completed by researchers in a study designed to measure evidence of the instructional characteristics of a multiple intelligences model in the classroom.

### **Possible uses:**

- Teachers might use the checklist to self-evaluate components of their classrooms relating to their use of manipulatives, differentiation practices, and content of instruction.
- Administrators might use the checklist as a component of evaluative observations of classrooms.
- Parents could adapt and use the checklist while observing and evaluating their children's present or future classroom environments.



## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

**Instrument:**

- ✓ Interview Guide for Reporting Student Characteristics and Making Referrals

# Abstract

C. June Maker, Professor at the University of Arizona, has developed a unique performance-based assessment in which children are observed by teams of teachers, counselors, paraprofessionals, administrators, specialists in education of the gifted and bilingual education, and local community members. The assessment, designed initially to increase the participation of students from diverse groups in programs for the gifted, was later expanded to include the identification of the strengths of all children so their positive traits could be recognized and developed. This assessment and the corresponding model for designing appropriate curriculum and instruction to meet the needs of diverse groups are consistent with research in cognitive science and an emerging paradigm in the field of education of the gifted. These approaches are based on the theories and research of Stephen Ceci, Howard Gardner, and Robert Sternberg and represent Maker's synthesis during 16 years of research and development through the Discovering Intellectual Strengths and Capabilities (DISCOVER) Projects. Maker is extending this work by integrating it with the work of educators in Europe and Asia, and has developed a new classification of human abilities based on her research.

In this monograph, an "Introduction" provides readers with a context for the framework Maker has developed. She cites research from cognitive science, psychology, cultural anthropology, education of the gifted, and bilingual education—and combines this with personal experiences in teaching and studying in the field—to support ideas for changes needed to improve programs for gifted students from culturally, linguistically, economically, and geographically diverse backgrounds. In the second section, "Setting the Stage," in a personal way, she describes her own thinking and research process as the framework evolved and was tested. The assessment and curriculum models are described briefly in this section and results of research on their use and effectiveness are presented in a readable style.



## Classroom Practices

**The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners**

## Abstract

Following the “Setting the Stage” section is a descriptive account of the assessment, along with many ways the curriculum principles of DISCOVER can be implemented in general classrooms or classrooms for gifted students. This is the “Practical Applications” section, and in it she continues with real examples by presenting six case studies of schools, school districts, a state, and two other countries using the models. She concludes the “Practical Applications” section by presenting the new framework developed with colleagues in Europe and Asia.



# Conclusions

## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

## Policy Makers

1. Develop criteria for schools and school districts to use in selecting instruments to identify gifted students.
2. Change existing policies to include the use of alternative, performance-based, research-based, theory-driven assessments.
3. Evaluate all instruments currently being used to identify gifted students.
4. Develop policies and procedures requiring schools and school districts to maintain careful records of the numbers and percentages of students identified as gifted from different cultural groups, linguistic backgrounds, economic levels, and geographical regions using different instruments.
5. Implement pilot programs in which progress of students identified by the various instruments in use is monitored.
6. Change existing policies to include requirements for identifying multiple forms of giftedness.
7. Disseminate information about effective instruments, acceptable procedures, appropriate curricula, and effective instruction for gifted students from underrepresented groups.
8. Change existing or create new policies to require that all students be served in ways that are consistent with their strengths and challenges identified during assessments.
9. Evaluate services, curricula, and instruction based on barriers and facilitators for curriculum and instruction. Report these evaluations to gifted program decision-makers.
10. Provide funding for long-term research and evaluation of alternative methods for identification of students from underrepresented groups.
11. Develop, implement, and monitor compliance with regulations requiring schools and school districts to serve appropriate numbers of students from culturally, linguistically, and economically diverse backgrounds and students with disabilities in programs for gifted students.
12. Ensure that parents and community members of color are represented on all advisory committees.



# Conclusions

## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

## Program Coordinators

1. Pilot the DISCOVER assessment in one or a few schools, maintain results, and track the progress of students. Analyze results to make further decisions about expansion or continuation. Provide information about strengths and levels of ability of all children.
2. Create partnerships between bilingual education and education of the gifted.
3. Include many types of screening and referral procedures to supplement teacher referral as a first step in deciding which children to test or examine further.
4. If portfolios are used as a part of the referral, screening, or identification process, have some work samples requiring problem solving, higher-order and/or creative thinking collected in a consistent way across all teachers.
5. Interview teachers about the characteristics of the students in their classrooms instead of sending or handing them a written checklist.
6. If you decide to continue to use teacher checklists, select these checklists based on research with children from diverse backgrounds.
7. Evaluate tests and make decisions about which to choose based on barriers and facilitators.
8. Change your vocabulary and the vocabulary of others—from talking about “the gifted” to talking about “students/children who are gifted in” a content area or skill.
9. Disseminate information about ways to observe students in the classroom to gain information about their strengths in varied areas.
10. Develop services for gifted students instead of “a program.”
11. Choose or create services for each student based on a careful consideration of both strengths and challenges.
12. Provide a wide range of services, including many options for parents and children to choose based on needs and cultural values.
13. Evaluate services, curricula, and instruction based on the barriers and facilitators for curriculum and instruction included in the “Introduction” section of this monograph.



# Conclusions

## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

#### Principals

1. Examine your own beliefs to decide if your views are more consistent with the traditional or emerging paradigm related to giftedness.
2. Interview or find other ways to elicit teacher statements or information to help you find out the perspectives of the teachers in your school.
3. If it fits with your faculty's perspectives, present the DISCOVER Assessment and Curriculum Models to teachers for possible implementation in your school.
4. Evaluate practices in the school to determine their consistency with your perspectives and the teachers' perspectives on giftedness, and devise ways to help perspectives and practices come into alignment.
5. Provide support and incentives for teachers who design curricula and provide learning experiences that are consistent with the emerging paradigm.
6. Disseminate information about the DISCOVER Curriculum model, encouraging its use in individual classrooms whether or not it is used schoolwide.





# Conclusions

## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

#### Teachers

1. Examine your own beliefs about giftedness, and think about how they evolved. Compare them with the traditional and emerging paradigms of giftedness. Carefully consider your teaching practices—are they consistent with what you think you believe?
2. Implement the DISCOVER Curriculum Model in your classroom if it is consistent with your perspectives on giftedness.
3. If you think DISCOVER might work in your school or district, present information about it to decision-makers.
4. Whether or not you choose to use the DISCOVER curriculum model, implement changes that can increase your ability to teach children with diverse gifts, talents, cultural backgrounds, languages, and economic levels effectively in your classroom or program.





## Classroom Practices

### The DISCOVER Project: Improving Assessment and Curriculum for Diverse Gifted Learners

Interview Guide for Reporting Student Characteristics and Making Referrals

# Interview Guide for Reporting Student Characteristics

## How this instrument was used:

This guide was used to interview teachers for the purpose of identifying students with characteristics that may indicate a gift or talent: humor, motivation, interest, communication/expressiveness, inquiry, problem-solving, sensitivity, intuition, reasoning, imagination/creativity, memory/knowledge/understanding, and learning. A script and a form to record information are both provided.

## Possible uses:

- Program coordinators or teachers would find this instrument useful for the purposes of student identification, especially in underrepresented populations.
- Curriculum coordinators would use the instrument to identify the strengths of students—information that might then be used to tailor curriculum and instruction to large-group, small-group, and individual needs.



# Classroom Practices

## Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

### Instruments:

- ✓ Observation Protocol
- ✓ AP Teacher Interview Questions
- ✓ IB Teacher Interview Questions
- ✓ AP Student Interview Questions
- ✓ IB Student Interview Questions
- ✓ Former AP Student Interview Questions
- ✓ Former IB Student Interview Questions

# Abstract

Although limited research exists on the appropriateness of Advanced Placement (AP) and International Baccalaureate (IB) Programs for gifted secondary learners, these courses serve as the primary methods of meeting the needs of gifted students in most high schools. This qualitative study employed a grounded theory approach to investigate how teachers conceptualize and implement curriculum and instruction in AP and IB courses and how students enrolled in AP and IB classes perceive and evaluate their learning experiences in these environments. Interviews with and observations of 200 teachers and 300 students in 23 high schools revealed that the end-of-course AP and IB exams drove most teachers' curricular and instructional decisions. Most AP and IB teachers also perceived the students in their courses as a homogeneous group of successful, self-motivated, and driven students. Accordingly, the curriculum and instruction within AP and IB courses was largely one-size-fits-all and fast-paced. Most AP and IB students perceived these courses to be the most challenging and satisfying of any courses they had taken, and described them as a welcome "escape" from general education and even honors courses. However, some students, including students from traditionally underrepresented populations and students who did not fit the "AP/IB" mold of long-time school success, did not perceive the one-size-fits-all, fast-paced courses to be a good fit for their needs. Many AP and IB students also noted that the very heavy workload in these courses left them little time for sleep or other activities; however, most students believed that the benefits they would accrue from completing these courses, such as admission to elite colleges and universities and earning college credits, was worth the hard work. Implications of these findings for increasing the goodness of fit of AP and IB courses for—and consequently increasing the participation of—students from a wide variety of backgrounds are discussed.



## Classroom Practices

### Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

# Recommendations

1. Enrich the curriculum and instruction within AP courses by decreasing the breadth of content to be covered within the scope of the courses and increasing depth.
2. Emphasize the benefit of experiencing genuine challenge over other rewards for taking AP/IB courses.
3. Provide AP and IB teachers with more consistent and comprehensive AP and IB training.
4. Make achieving equity within AP and IB courses a priority.
5. Provide AP and IB teachers with skills in delivering differentiated curriculum and using varied instructional strategies to meet the needs of a broad range of gifted students.
6. Investigate options for gifted and talented secondary learners beyond AP and IB courses.

Hertberg-Davis, H., Callahan, C. M., & Kyburg, R. M. (2006). *Advanced Placement and International Baccalaureate Programs: A “fit” for gifted learners* (RM06222). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?



# Observation Protocol

### How this instrument was used:

This semi-structured observation instrument was used to conduct observations of 200 teachers and 300 students in Advanced Placement (AP) or International Baccalaureate (IB) classrooms at different times during the school year.

### Possible uses:

- Program coordinators or administrators might use the instrument for conducting open-ended evaluations of AP or IB programs.
- Teachers might use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.
- Guidance counselors, administrators, and district superintendents might use the instrument to familiarize themselves with the practices in the AP/IB classrooms.



## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

AP Teacher Interview Questions

# AP Teacher Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview teachers of AP programs. Questions focused on five areas of concern: personal information from the teacher, procedures for enrollment in AP, characteristics of AP students, issues of content in AP courses, teachers' instructional strategies, and issues of assessment in AP courses.

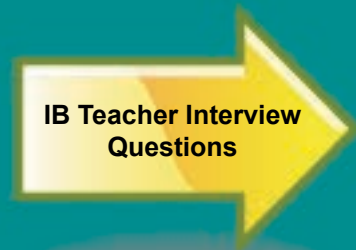
### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview AP teachers.
- Teachers might use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.



## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?



# IB Teacher Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview teachers of IB programs. Questions focused on six areas of concern: personal information from the teacher, procedures for enrollment in IB, characteristics of IB students, issues of content in IB courses, teachers' instructional strategies, and issues of assessment in IB courses.

### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview AP teachers.
- Teachers might use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.



## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

AP Student Interview Questions

# AP Student Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview students currently enrolled in AP programs. Questions focused on four areas of concern: the decision to participate in AP, impressions of AP classes and teachers, general educational achievement/motivation/attitude, and other concerns (such as differentiation).

### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview AP students.
- Teachers might also use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.





## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?



# IB Student Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview students currently enrolled in IB programs. Questions focused on four areas of concern: the decision to participate in IB, impressions of IB classes and teachers, general educational achievement/motivation/attitude, and other concerns (such as differentiation).

### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview IB students.
- Teachers might also use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.



# Former AP Student Interview Questions

## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

Former AP Student Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview students formerly enrolled in AP classes, but who dropped out. Questions focused on four areas of concern: the decision to participate/leave the AP program, impressions of AP classes and teachers, general educational achievement/motivation/attitude, and other concerns (such as differentiation).

### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview former AP students.
- Teachers might also use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.



# Former IB Student Interview Questions

## Classroom Practices

Advanced Placement and International Baccalaureate Programs: A “Fit” for Gifted Learners?

Former IB Student Interview Questions

### How this instrument was used:

This semi-structured questionnaire was used during the study to interview students formerly enrolled in IB classes, but who dropped out. Questions focused on four areas of concern: the decision to participate/leave the IB program, impressions of IB classes and teachers, general educational achievement/motivation/attitude, and other concerns (such as differentiation).

### Possible uses:

- Program coordinators or administrators might use the instrument (in a program-evaluative capacity) to interview former IB students.
- Teachers might also use the instrument as a reflective, evaluative tool to assess concerns within their own classrooms.



# Classroom Practices

## The Schoolwide Enrichment Model Reading Study

### Instruments:

- ✓ Reading Interest-A-Lyzer
- ✓ Reflections and Reading Log

# Abstract

In this study, a cluster-randomized design was used to investigate the effects of an enriched reading program on elementary students' reading fluency, comprehension, and attitude toward reading. The Schoolwide Enrichment Model (SEM-R) provides enriched reading experiences by exposing students to exciting, high interest books, encouraging them to increase daily independent reading of appropriately challenging, self-selected books through individualized reading instruction, and providing interest-based choice opportunities in reading. This research was conducted in 3 urban schools with a diverse student population of children from predominantly low socioeconomic income families and one suburban school with a large group of students with special needs. Students and teachers were randomly assigned to either the SEM-R treatment group or a control group in which they continued with the schools' established reading instruction. In Year 1 (2001-2002) of the study, all students in grades 3-6 participated in a district-mandated direct instruction reading program, Success for All, in the morning. Throughout the approximately 12-week intervention, the control group continued with remedial reading and test preparation during an additional afternoon literacy block while the treatment group implemented the SEM-R. During Year 2 (2002-2003), students and teachers were randomly assigned to either a treatment or control group for 1 hour of a regularly scheduled 2-hour language arts block. For 14 weeks, the treatment group implemented the SEM-R while the control group continued with previous instruction using a traditional basal reading series. Results indicate that students in the SEM-R treatment group in urban schools scored significantly higher than those in the control group in reading comprehension, reading fluency, and attitude toward reading. These results suggest that supplementing reading instruction with systematic reading enrichment that challenges and engages students may produce more favorable reading achievement, fluency, and attitude for students at all achievement levels, including talented readers.



## Classroom Practices

### The Schoolwide Enrichment Model Reading Study

# Conclusions

1. Students using the SEM-R outperformed students in control classrooms using traditional basal reading instruction in reading comprehension.
2. Students at all achievement levels in the SEM-R treatment group read with greater fluency and higher comprehension at the conclusion of the SEM-R treatment than control group students who received traditional basal reading instruction.
3. Students in the SEM-R group could self-regulate their reading behaviors to read 30-45 minutes at a time in an appropriately challenging book.
4. Students in the SEM-R developed more positive attitudes toward reading than peers in more traditional basal reading programs.
5. Individualization of instruction increased as SEM-R teachers moved from primarily whole group instruction to individual conferences.
6. Students in the SEM-R group were encouraged to explore their own reading interests.
7. Teachers using the SEM-R were able to provide individualized conferences with higher-order thinking strategies that challenged students to think deeply about what they read.

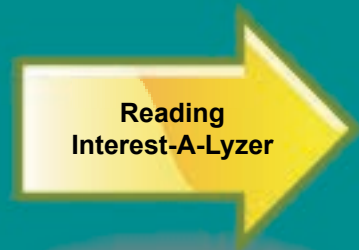
Reis, S. M., Eckert, R. D., Schreiber, F. J., Jacobs, J., Briggs, C., Gubbins, E. J., et. al (2005). *The Schoolwide Enrichment Model reading study* (RM05214). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





## Classroom Practices

### The Schoolwide Enrichment Model Reading Study



# Reading Interest-A-Lyzer

## How this instrument was used:

The 18 item semi-structured questionnaire was administered to students in grades 3-6 to determine their reading patterns, interests, and reading genre preferences.

## Possible uses:

- Teachers of all subjects, but especially reading teachers, might use this instrument at the beginning of a school year to plan reading curriculum.
- Parents could use the instrument to find out more about their children's reading habits.
- Students might use the instrument to perform a self-assessment exercise for the purpose of metacognitive literary reflection.
- Media specialists might use the instrument to determine reading preferences of the school's student body.
- Enrichment coordinators might use the instrument as part of an interest based series of assessments to aid in the planning of Type I enrichment experiences.



## Classroom Practices

### The Schoolwide Enrichment Model Reading Study

Reflections and Reading Log

# Reflections and Reading Log

## How this instrument was used:

These instruments were used in the study to record the amount of time students in grades 3-6 spent reading, as well as which books they had read and any reflections about the experience.

## Possible uses:

- Teachers of all subjects, but especially reading teachers, might use this instrument as part of an individualized reading curriculum.
- Parents could use the instrument to find out more about their children's reading habits and what they think of the books they read.
- Students might use the instrument to perform a self-assessment exercise for the purpose of metacognitive literary reflection.
- Media specialists might use the instrument to determine what books students are actually reading, as well as the amount of time they are reading.



# Classroom Practices

## The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

### Instruments:

- ✓ The National Research Center on the Gifted and Talented Survey for Weighted Grades and Waiving Classes
- ✓ Survey to Regional Schools – (Short-Essay Responses)
- ✓ Questionnaire on Weighted Grades Sent to College Admissions
- ✓ Questionnaire on Waiving Classes Sent to Local High School Administrators

# Abstract

A great deal of controversy surrounds questions of weighted grades and waiving classes. The center of the controversy appears, indeed, to be that no systematic study has been completed on either of these topics. Therefore, an attempt was made to alleviate that problem by researching the questions of weighted grades and waiving classes in a comprehensive way.

Four approaches to research occurred. First, interviews with teachers, counselors, and administrators were conducted in the four high schools of the research team. Second, questionnaires that asked for short-essay responses were sent to state and regional high schools. Third, 300 questionnaires that asked for a fill-in response were sent out nationally under the auspices of the National Research Center on the Gifted and Talented. Fourth, short-answer questions were sent to college admission directors of selected public and private colleges. Also, a review of published literature was conducted.

Questions guiding the study of Weighted Grades included: Should a school district weight grades? If so, under what circumstances and in what way(s)? What is the main definition of “equity” when the question of weighting classes is discussed? What do colleges and universities demand in their admission procedures? And, most important of all, what aids students in their learning and in their future?

Questions guiding the study of Waiving Classes included: What classes should be waived? How is the waiving of a class best accomplished? What is required of a school district to accomplish that? And, most important of all, what best aids students in their learning and in their future?

This research study on weighted grades indicates that the majority of schools that responded weight some classes, though there is no consistency among schools as to which classes or grades are weighted, how much each grade is weighted, and/or how labeling (on transcripts or in published course nomenclature) occurs. However, all schools which weight grades have

(continued)





# Classroom Practices

## The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

# Abstract

one thing in common: a commitment to defining “excellence” and to giving credence to what excellence means to them through the process of weighting grades. Respondents state a correlation between their decision to weight grades and their interest in reinforcing able students to take the most demanding courses.

The study on waiving classes also shows a lack of national consistency on how classes are waived, what classes might be waived, how such classes are graded, and by what means they are or are not figured into the grade point average (GPA). One consistency does occur in all but two of the returned materials: no class is waived unless students show mastery of the material. Therefore, “waiving” is not often defined in its root sense but as a word that means “alternative methods of completing course objectives.” Those “alternative methods” include final examinations, demonstrations, portfolios, exhibitions, and the like. When students are allowed to skip/waive lower-level classes, such classes usually generate no credit and students are often required to take more advanced classes in the same academic discipline.

As a result of these assessments of weighting grades and waiving classes, some conclusions appear to be clear. For weighting grades, the cumulative advantages of equity for students, the importance of encouraging students to take honors and AP classes, the fact that simple, unweighted GPA may place students at a disadvantage for college admissions and/or scholarship awards indicate that high schools should weight grades. Weighted grades appear to benefit students in most cases, according to national and regional responses and the literature in the field. As a result of the assessment on waiving classes, school districts and at times state legislatures recognize the importance of alternative ways by which a student's individual needs might be met. Although graduation requirements should not be minimized, the waiving of classes is assumed to be a needed option when classes are a repetition of students' knowledge, when course learnings and/or outcomes have been completed by students in ways other than in class, and/or when a particular course is unable to give certain students the kind of knowledge their own particular abilities indicate should be made available to them.



# Conclusions

## Classroom Practices

### The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

1. The majority of high schools in the study reported that they use some form of weighted grades.
2. There is no consistency among schools as to which classes or grades are weighted, how much each grade is weighted, and/or how labeling on transcripts occurs.
3. Simple, unweighted Grade Point Average systems may place students at a disadvantage when they apply for college admissions and scholarships.
4. Weighted grades appear to benefit students in most cases. Weighted grading systems foster equity and encourage students to take the more challenging classes.
5. There is no consistency among schools on how classes are waived, which classes may be waived, or how waived classes figure into a student's Grade Point Average.
6. Generally, no class is waived unless students show mastery of material.
7. When students are allowed to waive lower level classes, they usually receive no credit for the course, and often they must take more advanced classes in the same academic discipline.





## Classroom Practices

### The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

The NRC/GT Survey for Weighted Grades and Waiving Classes

# The NRC/GT Survey for Weighted Grades and Waiving Classes

## How this instrument was used:

This closed-ended questionnaire was sent to 300 high schools nationwide under the auspices of The National Research Center on the Gifted and Talented. The survey consists of two parts—six questions that deal with the schools' practices relating to weighting grades according to level of course difficulty, and 17 questions that deal with practices relating to waiving classes.

## Possible uses:

- District administrators could use the instrument as a planning guideline when considering district policies relating to waiving or weighting classes.
- Parents might use the instrument to assess their children's secondary schools' policies in these two areas.
- College admissions officers might utilize the questionnaire to obtain information relating to how high schools waive or weight their classes, as part of their school information profile.
- Curriculum policy makers might use the questionnaire to determine how to design better vertical curriculum for advanced students.



# Survey to Regional Schools (Short-Essay Responses)

## Classroom Practices

### The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

Survey to Regional  
Schools (Short-Essay  
Responses)

#### How this instrument was used:

This open-ended questionnaire was sent to 28 regional high schools in the state of Nebraska and the surrounding region (Kansas, Missouri, and South Dakota). The questionnaire consists of two parts—eight questions that deal with the schools' practices relating to weighting grades according to level of course difficulty, and nine questions that deal with practices relating to waiving classes.

#### Possible uses:

- District administrators could use the instrument as a planning guideline when considering district policies relating to waiving or weighting classes.
- Parents might use the instrument to assess their children's secondary schools' policies in these two areas.
- College admissions officers might utilize the questionnaire to obtain information relating to how high schools waive or weight their classes, as part of their school information profile.
- Curriculum policy makers might use the questionnaire to determine how to design better vertical curriculum for advanced students.



## Classroom Practices

### The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

Questionnaire on Weighted Grades Sent to College Admissions Directors

# Questionnaire on Weighted Grades

## How this instrument was used:

This open-ended questionnaire was sent to 15 admission directors of private and public colleges and universities. The survey consisted of six mostly open-ended questions that assessed the college or university's policies relating to the consideration of weighted grades in the admissions process.

## Possible uses:

- Students could use the questionnaire as a guideline while interviewing for college admission.
- Parents could use the questionnaire as a guideline to help determine a college or university's policies relating to weighted grades.
- High school guidance counselors could use the questionnaire to develop information profiles on college and university policies relating to weighted grades.
- District personnel could use the questionnaire with colleges in their region to guide policy decisions on weighting grades in their district.



# Questionnaire on Waiving Classes

## Classroom Practices

### The Case for Weighting Grades and Waiving Classes for Gifted and Talented Students

Questionnaire on Waiving Classes Sent to Local High School Administrators

#### How this instrument was used:

This 10-question survey consisted of both open- and closed-ended questions on 137 high schools' policies and practices relating to waiving classes.

#### Possible uses:

- District administrators could use the instrument as a planning guideline when considering district policies relating to waiving classes.
- Parents might use the instrument to assess their children's secondary schools' policies relating to waiving classes.
- College admissions officers might utilize the questionnaire to obtain information relating to how high schools waive their classes, as part of their school information profile.
- Curriculum policy makers might use the questionnaire to determine how to design better vertical curriculum for advanced students.



# Classroom Practices

## Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

### Instruments:

- ✓ Investigation Teacher's Log
- ✓ Mathematics Teacher Questionnaire
- ✓ Classroom Observation Scale
- ✓ Mathematics Classroom Practices Survey

# Abstract I

## Section A: University of Connecticut and Yale University Algebra Pilot Research Study

The University of Connecticut and Yale University sites for the research study entitled “Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding” involved grade 6 students for 30 hours of an after-school pilot research study in Algebra. Students who earned at least a B in mathematics were eligible for participation in the screening process, which included the Iowa Tests of Basic Skills, Mathematics Problem Solving and Data Interpretation (grade 8) subtest, and the Iowa Algebra Aptitude Test (grade 8).

The after-school pilot research study occurred for 10 weeks (1½ hours, twice a week). Teachers used *Connected Mathematics 2, Variables and Patterns*, a unit typically designed for grade 7 students. Of the 110 students assessed for the University of Connecticut research site, 73 participated in the program, with 30 students working with two teachers in School 1, and 43 students with three teachers in School 2.

A total of 90 students from 3 schools participated in the program for the Yale University research site, with 32 students working with 2 teachers in School 3, 31 students working with 2 teachers in School 4, and 27 students with 2 teachers in School 5. Schools 3 and 4 were in the same district. Students were thus divided into two groups at each school. Each group worked with one teacher who used technology or one teacher who did not use technology.

The pilot research study attempted to determine if involvement with above grade level curriculum would impact achievement, attitude, and interest toward mathematics. Student achievement in mathematics was assessed using four pre/post measures: Iowa Tests of Basic Skills, Mathematics Problem Solving and Data Interpretation subtest; Iowa Algebra Aptitude Test; *Connected Mathematics* Unit Test; and *Connected Mathematics* Unit Extended Test.





## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

# Findings

## University of Connecticut Research Site Findings

All paired samples  $t$  tests on each achievement measure across and within schools yielded statistically significant differences.

Participation in the Algebra research study did not affect students' self-efficacy, or their positive attitude and interest in mathematics. Students were positive about mathematics before and after their involvement in the after-school pilot research study. Their perceptions of the mathematics classroom practices in the after-school program indicated that the majority found the intensive Algebra program fun, interesting, and exciting. Many noted that the work differed from the regular classroom because it was more difficult. Yet, the students in this study found “hard, difficult, and challenging” work in Algebra to be fun and exciting.

Teachers and administrators shared their perceptions of teaching and learning mathematics. They recognized the importance of effective instruction in mathematics and were familiar with the characteristics of mathematically talented students. Challenging these students was important to the continuation of their learning.

Classroom observations provided a complete perspective on the research study as planned and as implemented. These observations confirmed teachers' and students' adherence to the philosophy of the *Connected Mathematics Program*, and documented students' ability to understand and apply advanced-level knowledge and skills related to algebraic understanding. The dynamics within the classes were definitely determined by the teachers' and students' commitment to learning how to think algebraically. Students mastered above grade level content and concepts and achieved representational fluency, which is the ability to solve problems using tables, graphs, words, or symbols. Algebraic reasoning prepares students for future accomplishments in mathematics, and the 73 students and their 5 teachers at the University of Connecticut pilot research schools were certainly successful in achieving the goals of this pilot research study.

(continued)





## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

# Findings

### Yale University Research Site Findings

Data analysis showed a gender x treatment interaction, with technology benefiting female students more than males.

Participation in the Algebra research study did not affect students' self-efficacy, or positive attitude and interest in mathematics. Students were positive about mathematics before and after their involvement in the after-school pilot research study. Their perceptions of the mathematics classroom practices in the after-school program indicated that there were mixed opinions, students liking some aspects of the program and not others. There was no consistent agreement on the difference between regular classroom practices and the after-school program.

Gubbins, E. J., Housand, B., Oliver, M., Schader, R., De Wet, C. F., Moon, T. R., et al. (2008). *Unclogging the mathematics pipeline through access to algebraic understanding* (RM08236). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.





# Classroom Practices

## Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

# Abstract II

## Section B: University of Virginia Algebra Pilot Research Study

This pilot research study attempted to determine whether varying the form in which mathematical material is presented creates greater equality of opportunity. The particular mathematical material studied comprised types of Algebra word problems that typically are presented in the logical/mathematical mode and that utilize spatial visualization (e.g., mixture, work, and time-rate-distance problems). The design investigated whether presenting such material in a narrative mode with spatial aids can equalize opportunities for mathematical achievement in Algebra. The ultimate goal of the project was to increase students' math achievement and students' attitudes toward and interest in mathematics.

The following research questions guided the pilot research study:

- Do students who participate in the mathematics intervention outperform control students on a measure of mathematics achievement after taking into account pretreatment mathematics achievement differences?
- Do students who participate in the mathematics intervention outperform control students on a measure of mathematics achievement after taking into account pretreatment Algebra aptitude differences?
- What are students' perceptions of the mathematics classroom practices in the mathematics intervention?



# Classroom Practices

## Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

# Findings

## University of Virginia Pilot Research Study Findings

Although there were no statistically significant differences between treatment and control groups on achievement, aptitude, or attitudes, three important findings emerged from the qualitative data that merit consideration. Each will be considered separately below.

1. One interesting finding emerging from the study was that all teachers unanimously expressed liking being provided with a prescribed curriculum that was easy for them to follow. All perceived the curriculum to be high-level, challenging, and engaging for students, as well as enjoyable to teach. As a result, all teachers maintained a high level of fidelity to the treatments.
2. Students in both the treatment and control groups expressed thoroughly enjoying the math program. Students from both groups cited the small class size, the "fun" and interactive math activities, and the high level of challenge as the primary reasons for enjoying the program. None mentioned the technological components as contributing to their enjoyment of or engagement in the program. This is interesting in light of recent attention focused in the literature on the use of technology to engage students in learning math.
3. Students in the study indicated a clear preference for learning at a faster pace and at greater levels of challenge than they normally got the opportunity to do in their regular math classes. Nearly all of the participating students indicated that they learned *better* under the conditions of a quickened pace and increased challenge.



# Implications

## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding

The findings suggest that while technology provides a useful pathway to understanding for students, it alone does not necessarily encourage or ensure student engagement. Instead, it seems that for the students in this study at least, high-level challenge, one-on-one time with the teacher, and hands-on activities are what is needed to engage advanced students in learning math.

Nearly all participating students indicated an eagerness to learn more math than they were able to do during their regular school year classes. This signals a need for a consideration of the match between the challenge level of the mathematics curriculum offered in our middle classrooms and the needs and abilities of the adolescents populating these classrooms. It begs the questions, *Are we underestimating the level of mathematical ability and interest of many of our middle school students? Are we limiting the possibilities for able math students by the lack of fit between the curriculum and instruction offered in our middle school math classes and their mathematical abilities and interests?*



## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding



# Investigation Teacher's Log

## How this instrument was used:

This open-ended questionnaire was developed to track the progress of each teacher's implementation of the lessons, or investigations, on a weekly basis. The teachers recorded reactions to lessons and provided evidence of how the implementation matched the specific intervention. Teachers described how they introduced and implemented each investigation under the following categories: Launch, Explore, and Summarize. Teachers were then asked to describe students' reactions to the investigation and list the students who completed applications, connections, and extensions at the end of each investigation to reinforce and enhance skills and concepts.

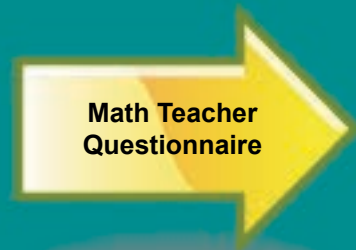
## Possible uses:

- Students could use this instrument as a way of recording and monitoring their comprehension of the investigations. They could compare their perspectives of the investigations with their teachers'.
- Teachers of all subjects could use this instrument to track their progression through their lessons on a weekly basis. Administrators could use this instrument to track teachers' progress throughout the year.
- Curriculum and Enrichment coordinators could use this instrument to determine the effectiveness of the curriculum by looking at students' reactions to the investigations and how many students successfully completed applications, connections, and extensions.



## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding



# Math Teacher Questionnaire

## How this instrument was used:

Teachers were asked to reflect on their Algebra class as they responded to a series of 9 items with several sub-items to be completed using different response sets. Items included estimation of time spent on certain activities, seatwork, and specific mathematics skills. Additional items addressed the limitations of teaching students with different academic abilities and/or uninterested students, the use of technology, and students' attitudes toward math.

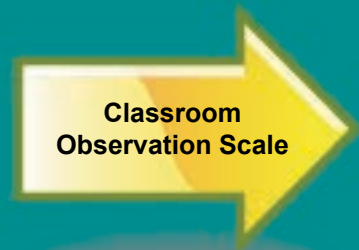
## Possible uses:

- Teachers of all subjects could use this questionnaire to either monitor or predict/evaluate the amount of time spent on each activity type in their classrooms.
- Administrators could use this questionnaire in classroom observations of teachers.
- Curriculum coordinators could use this questionnaire to determine the fidelity with which teachers are implementing the curriculum and to obtain teachers' feedback on the effectiveness of the curriculum in the classroom.
- Media specialists could use the technology questions section of this questionnaire to determine the extent to which they might need to intervene and help introduce technology into the mathematics classroom.



## Classroom Practices

### Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding



# Classroom Observation Scale

## How this instrument was used:

This instrument was used at least three times a week for an hour (for a total of at least 9 hours per class) by a trained observer to determine the extent to which the teacher utilized the curriculum appropriately and to describe teacher behaviors.

## Possible uses:

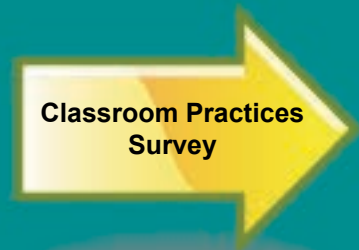
- Administrators could use this observation scale in classroom observations of mathematics teachers.
- Mathematics teachers could use this observation scale to self-assess their performance in the classroom, either using it to compare to administrator observations or to track the progression of their abilities and techniques throughout the year(s).
- This observation scale could be easily modified to measure performance of teachers of various subjects.



# Mathematics Classroom Practices Survey

## Classroom Practices

Unclogging the Mathematics Pipeline Through Access to Algebraic Understanding



### How this instrument was used:

This 8-item survey includes 6 closed-ended items and 2 open-ended items and was used to obtain student reflections on their experiences in the Algebra research study.

### Possible uses:

- This survey could be used to assess students' perceptions of their experiences in any extracurricular mathematics program.
- This survey, with the exception of question 4, could be used in regular mathematics classes to assess student perceptions and mathematics self-efficacy.
- This survey could be used to assess the effectiveness of daily mathematics lessons and could consequently be utilized in curricular modifications.





# Classroom Practices

## Development of Differentiated Performance Assessment Tasks for Middle School Classrooms

### Differentiated Performance Assessment Tasks:

- ✓ Fables and Folktales
- ✓ Wall Street Decisions
- ✓ You Can't Convince Me!
- ✓ Creature Classification
- ✓ Where in the World?

# Abstract

Educational reform efforts since the 1980s have all emphasized accountability in terms of student achievement and learning outcomes rather than process. As of 2002, 49 out of 50 states (excluding Iowa) have mandated the implementation of statewide testing. As a result, high-stakes testing has become the focal point for evaluating student learning, with nearly all of the evaluative efforts dominated by the use of traditional objective assessments.

Much debate surrounds the effectiveness of using high-stakes tests as a tool for accountability purposes in terms of improved student achievement and performance. Some literature affirms that using tests for accountability purposes is one avenue for enhancing student performance. However, other literature indicates that the widespread use of statewide mandated tests negatively affects students, teachers, schools, and the quality of curriculum and instruction in the classroom.

While the use of high-stakes testing has focused teacher planning on specified, agreed-upon state-level objectives, exclusive use of traditional assessment, often in the form of multiple-choice tests, has been judged to be a negative in middle school classrooms. In response to these criticisms, some measurement experts advocate the use of authentic assessments for their potential for increased validity.

The National Research Center on the Gifted and Talented (NRC/GT) at the University of Virginia undertook the development of differentiated authentic assessments for classroom use that embodied key concepts, principles, generalizations, and processes critical to understanding in the disciplines of English/language arts, mathematics, science, and social studies. In addition to the development of the assessments, a small-scale study was designed to investigate the psychometric attributes of authentic assessments.

The results of the study provide evidence that authentic assessments for classroom purposes can be developed to provide reliable and valid information about student learning. In addition, results suggest that the authentic assessment can provide an accurate assessment of students' success in achieving academic learning standards, with positive responses of both teachers and students to the authentic assessment experience.



# Framework for Development

## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms

Several basic principles guided the development phase of each authentic task. First and foremost, NRC/GT focused on creating assessments that embodied key concepts, principles, generalizations, and processes critical to an understanding of the discipline(s). Another criterion applied in the development process was that each assessment reflected current understandings or best practices in the areas of motivation, cognition, learning theory, and instruction. In addition, tasks allowed multiple pathways to solutions and/or allowed for a diversity of perspectives in solutions.

Promotion of effective problem solving was another criterion of task development. Therefore, tasks were designed that, in general, required sustained work on the part of the students and at the same time allowed students to have some degree of control or choice over the actions needed to solve the problem or conduct the investigation. In some instances, students were given the responsibility for designing and carrying out their own investigations. Tasks were also developed to provide sufficient challenge for the range of academic diversity in the heterogeneous middle school classroom.



# Conclusions

## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms

On a national level we have a history for demanding that assessments provide quantifiable information about student learning that is both reliable and valid. However, as a nation we have failed in working with classroom teachers in developing classroom assessments that provide the same high quality information about student learning so that the instructional process is better informed. To date, guidelines do not exist for psychometric standards for classroom assessments in which teachers make judgments about student learning.

The results of this small-scale study provide evidence that authentic assessments for classroom purposes can be developed to provide reliable and valid information about student learning. In addition, the results suggest that authentic assessments can be used in middle school classrooms for accurate assessment of students' success in achieving academic learning standards.





# Psychometric Attributes of the Authentic Assessments

## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms

#### Content Validity

Once the development of the assessments and associated rubrics were completed, expert reviewers were solicited to participate in a content validation of the tasks. Content validation was carried out to ascertain the degree to which each assessment measured the objectives that it was intended to measure, as well as the extent to which the assessment was relevant and applicable to the world of work done by practicing professionals. Panelists were also asked to review each assessment for potential biases against students from economically disadvantaged environments, differing cultural/ethnic groups, and gender groups.

#### Inter-rater Reliability

In evaluating scores involving raters, it is important to know the extent to which different scorers agree (or disagree) on the values assigned to student responses. Inter-rater reliability is the degree to which two raters agree on the level of student performance. One way to compute an index of agreement between raters is with the Kappa coefficient. Kappa is the proportion of agreements after chance agreement between raters has been excluded.

In general, the Kappa coefficients ranged from 0.55 to 0.95, indicating that ratings between two independent raters were fairly consistent with one another, despite the lack of training. This range of coefficients also suggests that the assessments elicit student responses that are reflective of the performance criteria in the scoring rubrics and that the domain criteria are clearly delineated.



## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms



# Fables and Folktales Differentiated Performance Assessment Tasks

## How this instrument is to be used:

The Fables and Folktales assessment task invites students to develop an original fable or folktale within the context of a storytelling festival in the year 2060. Students are assessed across six domains: purpose, sequencing, symbolism, word usage, expressiveness, and timeliness.

## Possible uses:

- This task could serve as a culminating assessment for a unit of study on fables and folktales. It has been designed for students functioning at grade level in language arts skills such as story writing and oral presentation.



## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms



# Wall Street Decisions Differentiated Performance Assessment Tasks

## How this instrument is to be used:

Wall Street Decisions assesses the degree to which students understand and can apply mathematical concepts and calculations, such as estimation; rate of change; and percent, decimal, fraction conversions, to make decisions about stock purchases, as well as to explain changes in the stock market. There are three levels of the prompt: one designed for struggling learners, one designed for on-grade-level learners, and one designed for students above grade level in mathematical understanding. All students are assessed in the domains of support for conclusions, strategy and calculations, supporting materials, justification, and presentation.

## Possible uses:

- This assessment may be given as homework or completed in class. It is designed to be completed by students individually with minimal teacher intervention. It should take students 1-2 hours to complete, but some “incubation” time might be helpful. The task and rubric are targeted to a sixth or seventh grade audience, but may be modified further for use with any middle grade level or any readiness level. Teachers should ensure that students have access to calculators, newspapers with stock performance summaries, and internet resources.



# You Can't Convince Me Differentiated Performance Assessment Tasks

## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms



#### How this instrument is to be used:

The purpose of You Can't Convince Me is to engage students in thinking about, discussing, and identifying the essential elements of persuasive rhetoric. In addition, students are given the opportunity to practice communicating in a clear, concise manner to a specific audience and in a specific format. Students also engage in the process of preliminary instrument design. Students are assessed in the domains of essential elements, clarity of descriptors, presentation, and peer evaluation.

#### Possible uses:

- This assessment is designed to be completed in pairs as an in-class assignment. Teachers should collect responses and provide feedback via the rubric. Pairs will then engage in a peer review and revision process. Instruments may eventually be combined to form a class rubric for persuasive writing and speaking. The task and rubric are designed for eighth grade, but may be modified for any middle grade level and any readiness level.



# Creature Classification Differentiated Performance Assessment Tasks

## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms



#### How this instrument is to be used:

Creature Classifications was designed to assess the proficiency of students in developing classification systems for biological organisms. Students are assessed in the areas of introduction, “bug selection,” thoroughness, and ease of use/quality of classification.

#### Possible uses:

- This assessment activity can take place either during class or as homework, completed by individuals with minimal teacher intervention. In either case, care must be taken to ensure equity in resource availability. Teachers should allot a minimum of five hours for students to work on this project, preferably spread over five days. The assessment task and scoring rubric should be presented to students both orally and in writing prior to the start of the assessment.





## Classroom Practices

### Development of Differentiated Performance Assessment Tasks for Middle School Classrooms



# Where in the World? Differentiated Performance Assessment Tasks

## How this instrument is to be used:

The Where in the World? assessment task is designed to measure students' understanding of key cultural elements of countries and regions around the world. Students are assessed in the areas of accuracy of information, thoroughness of coverage, validity of choices, appeal of display, and supporting materials.

## Possible uses:

- This task is designed to cover a 2-week period in which students work on the project in class and in the library for one hour per day. Students may also take the project home to work on it. The task is designed to be completed individually.



# Classroom Practices

## An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students

### Instrument:

- ✓ Classroom Practices Record

# Abstract

The Classroom Practices Study conducted by The National Research Center on the Gifted and Talented (NRC/GT) examined the instructional and curricular practices used with gifted and talented students in regular third and fourth grade classrooms throughout the United States. Descriptive information about these practices was obtained from surveys and classroom observations. The results obtained were from systematic observations of gifted and talented students in 46 third and fourth grade classrooms. The observations were designed to determine if and how teachers meet the needs of gifted and talented students in regular classroom settings. The Classroom Practices Record (CPR) instrument was developed to document the types of differentiated instruction that these students receive through modifications in curricular activities, materials, and teacher-student verbal interactions. Descriptive statistics and chi-square procedures were used to analyze the CPR data. The results indicated that little differentiation in the instructional and curricular practices, including grouping arrangements and verbal interactions, was provided for gifted and talented students in regular classrooms. Across five subject areas and 92 observation days, gifted students received instruction in homogeneous groups only 21 percent of the time, and the target gifted and talented or high ability students experienced no instructional or curricular differentiation in 84 percent of the instructional activities in which they participated.



## Classroom Practices

### An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students

# Results

The results of the analyses indicated that the target gifted and talented students received a limited amount of differentiation in reading, language arts, mathematics, science, and social studies instruction. For purposes of this study, six codes were used to record evidence of differentiation: advanced content instruction, advanced process instruction, advanced product or project instruction, independent study with assigned topics, independent study with self-selected topics, and other differentiation experiences. Across all five subject areas, the target gifted and talented students experienced no instructional or curricular differentiation in 84 percent of the activities in which they participated. The greatest amount of differentiation occurred in mathematics, with target students receiving advanced content instruction in 11 percent of the mathematical activities.

Fourteen types of instructional activities were coded within each subject area: audio visual, demonstration, discussion, explain/lecture, games, non-academic activity, oral reading, project work, review/recitation, silent reading, simulation/role playing, testing, verbal practice or performance, and written assignments. Of the fourteen activities, the gifted and talented students spent the majority of the time doing written assignments and listening to explanations or lectures across all five subject areas. Target gifted and talented students were heterogeneously grouped for the majority of the instructional time in all subjects.

Several analyses were conducted on the types of questions teachers asked (knowledge/comprehension and higher order) and the pre-response wait time associated with questions teachers provided to both groups of target students. These analyses were conducted across all sites and separately for students in gifted program and no-program schools. No significant differences in the types of questions (knowledge/comprehension versus higher-order questions) were found between target students across all sites, within program schools or within no-program schools. A significant chi-square value was found between the two groups of target students with regard to questions accompanied by wait time. That is, significantly more wait time was provided to target average ability students than to target gifted students, however, the phi coefficient indicated that the strength of this difference was low.

(continued)



## Classroom Practices

### An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students

# Results

The results of the content analysis procedure, conducted to examine the observers' anecdotal records on the daily summaries, corroborated the findings from the descriptive and chi-square statistical results. That is, a limited amount of differentiation was found in the instructional and curricular practices for gifted and talented students in the regular classroom.

Westberg, K. L., Archambault, F. X., Jr., Dobyms, S. M., & Salvin, T. J. (1993). *An observational study of instructional and curricular practices used with gifted and talented students in regular classrooms* (Research Monograph 93104). Storrs, CT: National Research Center on the Gifted and Talented, University of Connecticut.





## Classroom Practices

### An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students

# Discussion

Despite several years of advocacy and efforts to meet the needs of gifted and talented students in this country, the results of the observational study indicate that little differentiation in the instructional and curricular practices, including grouping arrangements and verbal interactions, is provided to gifted and talented students in the regular classroom. This is of particular concern when special programs for gifted learners outside of the regular classroom are being eliminated or reduced in many parts of the country because of economic difficulties.

Several implications from this study should be considered, especially if gifted education is to become increasingly mainstreamed or provided in the regular classroom. These implications apply to all who share in the responsibility of educating gifted learners in the regular classroom, namely, administrators, gifted education specialists, curriculum consultants, guidance personnel, parents, and classroom teachers.

The results from this study suggest that preservice and inservice training practices need to be modified and increased. Teacher preparation programs should provide preservice teachers with awareness of the need and opportunities to practice techniques for meeting the needs of high ability students in the classroom. Most college or university teacher preparation programs provide only one or two class sessions on this topic. Inservice training for classroom teachers should include specific strategies for meeting the needs of gifted and talented students in the regular classroom, and, in addition to presenting information about these strategies, strong encouragement to “experiment” with these strategies.

School administrators and boards of education should acknowledge that many classroom teachers have large class sizes and a significant number of students with special needs or handicapping conditions, making teachers’ tasks for meeting the individual needs of all students increasingly challenging. Therefore, accommodations, such as cluster grouping for subjects or resource programs, should be provided to enable classroom teachers to meet the needs of bright students.

(continued)



## Classroom Practices

### An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students

# Discussion

The results from this study suggest that the role of the gifted education specialist or other staff development personnel in a school district should be modified to include assistance to classroom teachers. This does not mean that special programs, such as pull-out resource programs, should be eliminated; rather, gifted education specialists should include consultation or collaboration with classroom teachers among their responsibilities. In fact, in addition to concluding from this observational study that different practices need to be provided to gifted students in the regular classroom, a convincing argument should be made for retaining special programs for the gifted and talented students.

The generalizability of the results found in this research are limited to third and fourth grade classrooms that volunteered to be part of the study. It must be acknowledged that observations in a few of the third and fourth grade classrooms in this study indicated that some differentiation in the instruction and curricular practices was provided to target gifted students. Unfortunately, this occurred infrequently and suggests that the needs of gifted and talented students are not being met in the majority of regular classrooms.



## Classroom Practices

An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students



# Classroom Practices Record

### How this instrument was used:

This instrument was developed to record information about the occurrences and types of instructional and curricular differentiation provided by regular classroom teachers to target students. The instrument contains six sections, including a section for recording the types of verbal interactions that occur in the classroom. Several field trials of this instrument were conducted to improve evidence of its validity and reliability.

This letter was sent to teachers who were going to be observed, stressing the importance of observing typical days in the classroom and requesting additional forms to be completed and returned. The letter emphasizes that the teacher is not being evaluated and should not consciously change his or her behavior because an observer is present in the classroom. The letter further explains that the observer's notes will not be shared with the teacher or the teacher's supervisor(s) and assures the teacher that all information will be kept confidential.

The student roster was completed by the classroom teacher and mailed to the observer before the first observation day. A completed student roster provides the observer with a list of all students' first names, as well as students' gender, ethnicity, participation in a free or reduced lunch program, placement in special programs, ability level, and composite percentile score on a standardized achievement test.



# Classroom Practices Record

## Classroom Practices

An Observational Study of Instructional and Curricular Practices Used With Gifted and Talented Students



### Possible uses:

- Administrators and coordinators could use this instrument to assess teachers' levels of implementation of differentiation in their classrooms.
- Enrichment coordinators could use this instrument to evaluate a teacher's classroom environment and activities as they relate to the physical aspects of the classroom and the curriculum.
- Administrators and coordinators could use the Teacher Interview section of this instrument as a self-report measure of changing teacher behaviors, implementation of differentiation, and use of grouping.
- This letter is a thorough, well-written example of an informational letter that would be sent to a participant in a research study. It can be modified for a variety of research designs.
- This roster is a compact, succinct way of detailing student characteristics and evaluations; it can be modified and used for identification purposes as well.





# Classroom Practices

## Regular Classroom Practices With Gifted Students: Results of a National Survey of Classroom Teachers

### Instrument:

- ✓ Classroom Practices Questionnaire

# Abstract

The Classroom Practices Survey was conducted by The National Research Center on the Gifted and Talented (NRC/GT) to determine the extent to which gifted and talented students receive differentiated education in regular classrooms across the United States. Four questions guided this research: (1) Do classroom teachers modify instructional practices and curriculum materials to meet the needs of gifted and talented students?; (2) Do classroom teachers in various parts of the country and in communities of different sizes provide different services for gifted students?; (3) What instructional practices are used with gifted and talented students in classrooms across the country?; (4) Are there differences in the types of regular classroom services provided for gifted students in districts with and without formal gifted programs? The survey samples, which were drawn using stratified random sampling procedures, included a general sample of 3993 third and fourth grade teachers working in public school settings, 980 private school third and fourth grade teachers, and four samples of third and fourth grade teachers in public schools with high concentrations of African-American students (n=592), Asian-Americans (n=587), Hispanic-Americans (n=582), and Native-Americans (n=580). A survey instrument called the Classroom Practices Questionnaire (CPQ) was developed to obtain background information on the teachers, their classroom and their school districts as well as their perceptions of their teaching behavior related to gifted and average students in their classes. Approximately 50% of the teachers surveyed responded to the questionnaire.



# Findings

## Classroom Practices

### Regular Classroom Practices With Gifted Students: Results of a National Survey of Classroom Teachers

The major finding of this study is that third and fourth grade teachers make only minor modifications in the regular curriculum to meet the needs of the gifted students. This result holds for public school teachers, for private school teachers, and for teachers in schools with high concentrations of the four types of ethnic minorities included in this research. The same general conclusion also applies to teachers and classrooms in various regions of the country (Northeast, South, West, and North Central) and to teachers and classrooms in rural, urban, and suburban communities. Teachers who make provisions for the gifted are likely to assign them advanced readings, independent projects, enrichment worksheets, and reports of various kinds. Some classroom teachers also attempt to eliminate material that students have mastered, provide the opportunity for more advanced level work, give gifted students some input into how classroom time is allocated, and expose gifted students to higher level thinking skills. However, these modifications are not used widely. The survey also revealed that the regular classroom services provided to gifted students in schools with formal gifted programs are similar to those provided in schools without formal programs.

Archambault, F. A., Jr., Westberg, K. L., Brown, S. W., Hallmark, B. W., Emmons, C. L., & Zhang, W. (1993). *Regular classroom practices with gifted students: Results of a national survey of classroom teachers* (Research Monograph 93102). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

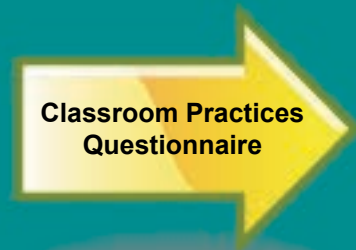




# Classroom Practices Questionnaire

## Classroom Practices

### Regular Classroom Practices With Gifted Students: Results of a National Survey of Classroom Teachers



#### How this instrument was used:

The Classroom Practices Questionnaire (CPQ) solicited information on the background of teachers, the policies and procedures their schools and districts had adopted for educating gifted students, and the classroom practices teachers used with gifted and average students. Teacher reports of their own behavior with both types of students provided a measure of the extent to which gifted students were receiving enriched or differentiated educational experiences. A total of 39 items were included in the classroom practices portion of the CPQ. Teachers responded to each item first for average and then gifted students using the following response scale: never, once a month or less, a few times a month, a few times a week, daily, and more than once a day.

#### Possible uses:

- Portions of this questionnaire or this questionnaire in its entirety can be used by anyone seeking information on teacher demographic information, school and district demographic information, classroom issues, and classroom practices as differentiated between average and gifted students.
- The Classroom Practices section of this questionnaire can be used as either an assessment by administrators or coordinators or a self-assessment by the teacher, measuring specific classroom practices as differentiated between average and gifted students using a Likert-type scale.



# Section D

**Other Topics**



To select  
a study, click  
on its title  
in the Table  
of Contents.



# Table of Contents Other Topics

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## The Status of Programs for High Ability Students

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# Abstract

## Other Topics

### Parents Nurturing Math-talented Young Children

**Instrument:**

- ✓ Math Games

Talent in mathematical reasoning is highly valued in this society, and yet very little is known about its early course. This is a two-year study of children who were discovered during preschool or kindergarten to be advanced in their thinking about math. Three hundred children were studied over a period of two years; half of them were involved in biweekly Saturday Clubs designed to enrich their experience with mathematics. It is the first study to look in any systematic way at young, math-talented children.

A publicity campaign was mounted to find young children who were thought by their parents and/or teachers to be “good at math.” 778 children were nominated and screened. The researchers first identified all children in the 98<sup>th</sup> percentile or higher on the screening measures, which included arithmetic subtests of major batteries. All subtests asked children to do mental math to solve brief story problems. The final sample consisted of 310 children, all of whom were randomly assigned to either a comparison or an intervention group.

One arm of the study was directed at following the cognitive development of all 310 children for two years using a battery of measures tapping not only a wide variety of mathematical reasoning functions but also verbal ability, visual-spatial ability, and short-term working memory span in the verbal, visual-spatial, and mathematical domains.

The other arm of the study involved children in the intervention group who were invited to participate in Saturday Clubs offered every other Saturday during the two succeeding school years, a total of 28 sessions in all. In groups of about 15, children met with specially trained, certified elementary teachers for half-day sessions, either morning or afternoon. In these sessions, children were offered opportunities to engage in a wide variety of math activities.

Researchers spoke with teachers of children in the intervention group at least once during each year, both to understand more about how the children were doing in school and to brainstorm with teachers some additional adaptations of classroom procedures that might be appropriately challenging for these math-advanced children. Parent meetings were also held each year in which findings were shared, hands-on tasks were initiated, and useful books and materials for home were displayed.



# Results

## Other Topics

### Parents Nurturing Math-talented Young Children

Among other findings, the study revealed that, as a group, the children remained advanced in math over the two-year period, that their spatial reasoning related more closely to their math reasoning than did their verbal reasoning (although they were ahead in all three domains), and that the math scores of the boys started and remained somewhat higher than those of the girls. The biweekly Saturday Clubs to which half the group were randomly assigned also proved effective in enhancing mathematical reasoning.

The study identified characteristics of math-advanced young children; ways to “tune into” children’s ideas and questions through informal play without becoming didactic or turning off their curiosity by drilling number facts and procedures; and the power of “big ideas” like infinity, zero, reversibility, equivalence, representing the numeration system in different ways, measuring, estimating, gathering data, and understanding probability. A wide assortment of real-life contexts, such as gardening, cooking, planning parties, dealing with money, going out to eat, caring for pets, making collections, and car trips, were found to be appropriate and successful occasions for mathematical explorations. The study presents a variety of alternatives by which schools and parents, working in partnership, can create optimal ways to support the development of highly capable children.



# Results

## Other Topics

### Parents Nurturing Math-talented Young Children

Other findings include:

- Parents can identify math-talented children.
- The children studied were advanced on all the standardized measures that were administered, not just the math subtests.
- There are gender differences even at this early age; more boys than girls were nominated for the study, and of the children nominated, the boys tended to score higher.
- The findings of the first year proved stable. In all three domains examined (verbal, visual-spatial, and mathematical), and including the comparison children not in the Saturday Clubs, the children not only remained as advanced over their age-mates as they had been the first year, on some mathematical reasoning measures, they were even more decidedly ahead. Gender differences did not disappear; in overall mathematical reasoning, the boys made greater gains than did the girls over the two years.



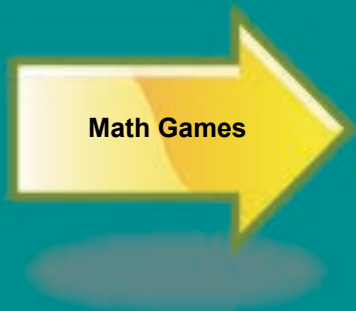




# Math Games

## Other Topics

Parents Nurturing  
Math-talented Young  
Children



### About this resource:

The Math Games resource lists five game-like activities to extend concepts for, enrich the mathematical experiences of, and challenge math-talented students. Questions to ask and challenge lists accompany the games. Games include: Lots of Boxes, Write a Story For..., What Is Your Name Worth?, Switching Places Boat Problem, and Chip-Trading Game.

### Possible uses:

- This resource can be used by teachers and parents alike to extend concepts for, enrich the mathematical experiences of, and challenge math-talented students.



# Abstract

## Other Topics

### The Status of Programs for High Ability Students

**Instruments:**

- ✓ Advocacy Survey
- ✓ Exemplary Policy Statements

The Program Status Research Study, sponsored by The National Research Center on the Gifted and Talented, was designed to examine the status of local programs for students with high abilities and the reasons to which educators and key personnel attributed the status of these programs. The study was completed in a purposive sample of 19 states, divided into four groups according to economic health (i.e., good, poor) and the existence or nonexistence of a state mandate to provide program services. This descriptive [ex post facto] research was completed in two phases. Phase I, a mail survey to more than 2,900 local personnel that yielded a response rate of over 54%, was designed to assess the status of programs for students with high abilities and the reasons attributed by local personnel to the status of their programs. Phase II, interviews with key personnel (the state director of gifted education, the president of the state advocacy organization, a school superintendent, a chairperson of a local board of education) was designed to triangulate the findings from Phase I.



# Results

## Other Topics

### The Status of Programs for High Ability Students

Results from Phase I indicated that programs in states with mandates and in good economic health are “intact” and “expanded,” while programs in all other groups are being “threatened,” “reduced,” and “eliminated” in high numbers. The majority of respondents from states with mandates to provide services to students with high abilities and who reported programs as intact or expanded attributed the status to the existence of a state mandate and advocacy efforts. Almost half of the respondents from states without mandates and reporting their status as reduced, threatened, or eliminated attributed this status to a decline in state and local funds. Additionally, respondents indicated that approximately 75% of students with high abilities in grades three to eight receive program services, that 50% of students in grades one to two and nine to twelve receive similar services, and that program services for students Pre-K to K were almost nonexistent. Results from key personnel in Phase II of the research triangulated the findings from Phase I. Advocacy efforts were most frequently associated by key personnel with programs that were intact or expanding, and reductions in funding were associated with programs experiencing jeopardy.





# Advocacy Survey

## Other Topics

### The Status of Programs for High Ability Students



#### How this instrument was used:

The Advocacy Survey was piloted on samples similar to those used in this national research study. Changes were made in the survey at respondents' requests, and these changes lent credibility to the validity and reliability of the survey. The Advocacy Survey was used in the current research to elicit information from respondents concerning the status of programs, the most important reason for the current status of the program, and the comprehensiveness of the district's program for students with high abilities. The survey was accompanied by a separate sheet that contained definitions of the status categories and a "program."

#### Possible uses:

- This instrument could be used by other researchers to determine the status of programs in school districts and states across the country.
- This instrument could be used by policymakers to determine the status of programs in school districts and states across the country and implement policy accordingly.
- This instrument could be used by administrators or coordinators to assess teachers' awareness of the status of programs in their own districts.



# Exemplary Policy Statements

## Other Topics

### The Status of Programs for High Ability Students



#### About this resource:

Two exemplary policy statements are provided focusing on definition, mission statement, goals, identification. The second sample includes two National Association for Gifted Children policy statements regarding ability grouping and acceleration, respectively. Both statements emphasize the need for educational programs for gifted and talented students.

#### Possible uses:

- The statements can serve as guides for designing and developing defensible programs and services for gifted and talented students.

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# The National Research Center on the Gifted and Talented

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