

Advanced Readers At Risk: Rescuing an Underserved Population

Summary of the Grant

Project Name: Advanced Readers at Risk: Rescuing an Underserved Population

Focus: Reading

Grade Level: 4-6

Contact Information: Dr. Scott Hunsaker, Utah State University,

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States Served by the Project: Utah

A Case Study

Students in Kathleen Brown's classroom understand that there is more to reading instruction than just reading good books. This teacher and her students along with 59 other teachers and 1300 other high-ability readers from across Utah schools were involved in the Advanced Readers At Risk Utah Javits Gifted and Talented Education Project.

Kathleen's high-ability readers received differentiated reading instruction matched to their abilities and interests. She used specific strategies, gained as part of the grant, as her identified high-ability readers learned to read, read to learn, read for leisure and read to serve, the four components of the program. Too many advanced readers begin school reading at high levels and fail to make continuous progress.

Her high-ability students learned to ask sophisticated questions, came to understand vocabulary at a more advanced level, deepened their understanding of great literature and powerful content while maintaining their positive outlook towards reading.

As a culminating project, Kathleen's students used their knowledge, skills and dispositions in reading to complete a service learning project involving the entire school. Applying their reading to learn skills, the students identified a problem with food waste in their school lunchroom. Using the problem-solving process, they determined the solution was to construct worm berm condos for each classroom in the school. They later used the compost produced by the worms as amendment to the soil for a variety of garden projects around the school. At the end of the project, Kathleen said, "ARAR has probably been the most pivotal educational event in my teaching career. I always dreamed of a way to use differentiated literature in my reading instruction. ARAR gave me the understanding about how to do it and taught me what my students would gain from it. Suddenly I had wings!"

The Outcome

The Advanced Readers at Risk (ARAR) project was implemented in Utah in 31 demonstration classrooms with 11 comparison classrooms with 64.5% coming from Title I schools. Over the three years, 60 teachers participated in the project. Too often, advanced readers fail to make progress. That is, if students are reading at a fourth grade level in first grade, they often level off and fail to make continuous progress in reading in subsequent grades.

In the grant, a Development Implementation Guide (DIG) focused on six areas of training; 1) identification of advanced readers, 2) organization for instruction, 3) content, 4) instructional strategies, 5) continuous improvement assessment, and 6) ambassadorship for ARAR. Research on the use of DIG showed that 80% of participating teachers changed practice to acceptable levels on the DIG.

Analysis of the MCA data indicated that students who participated in the project had gains in their use of literary analysis. For example, 67% of the students showed gains over the comparison classrooms in year 2 and 45% scored higher than comparison students in year three. In reading achievement, 71% of the students showed gains for year two while 80% showed gains for year three over comparison classrooms. These gains show that when teachers learn how to identify and challenge advanced readers, these readers can and do continue to make gains in their classrooms.

Publications, References, Work in Progress

Hunsaker, S. L., Nielsen, A., Bartlett, B. (in review). Correlates of Teacher Practices Influencing Student Outcomes in Reading Instruction for Advanced Readers.

Odoardi, R. H. (2010). Gifted readers and libraries: A natural fit. *Teacher Librarian*, 37(3), 32-36.
Bartlett, B., & Hunsaker, S. L. (2009, Winter). Reading to serve: Service learning for gifted readers. *Teaching for High Potential*, pp. 1, 10-12.

Hunsaker, S. L. (2002). Opportunities and challenges for the Gifted Reader: The world-class reader model. *Gifted and Talented*, 6(1), 16-18.

Hunsaker, S. L., Parke, C. J., & Bramble, J. G. (2004, Summer). High ability readers and the achievement gap. *Understanding Our Gifted*, 16(4), 8-10. [Invited]

Arkansas Evaluation Initiative (AEI)

Summary of the Grant

Project Name: Arkansas Evaluation Initiative (AEI) in Gifted Education

Focus: program evaluation

Grade Level: K-12

Contact Information: Ann Robinson, Ph.D., University of Arkansas at Little Rock,
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States Served by the Project: Arkansas

A Case Study

Imagine 200 educators representing 200 school districts working collaboratively to improve the services to gifted learners. They come from high poverty districts that range from an isolated rural school like East End Bigelow to the three metropolitan districts serving Little Rock. They want to focus on student learning outcomes, increase the participation of low-income high-ability learners in challenging educational opportunities, and hone their skills in formative evaluation in order to ensure the highest possible quality of services.

To accomplish their goals, these committed educators attended professional development institutes to increase their knowledge of program evaluation strategies and best practices for serving low-income high-ability learners effectively, applied their knowledge in the re-design of state reporting systems, and focused their efforts on evaluating student learning in key content areas of the curriculum.

Their efforts resulted in the development of materials and transferable evaluation procedures that can be used in any school district nationwide to plan, implement, evaluate and improve the learning opportunities for gifted learners. Linking local evaluations to a statewide professional development initiative can transform the way educators collect and analyze evaluation data to assure access, equity, and excellence for high-ability learners.

The Outcome

Through a randomized field study which compared two groups of educators, participation in the AEI project:

- Increased educators' knowledge and skills in program evaluation,
- Increased reports of improved access for low-income and culturally diverse learners to gifted programs and services,
- Increased program alignment with national standards as outlined in the NAGC Pre-K-Grade 12 Gifted Program Standards,
- Reduced distraction and focused educators on the task of evaluating their programs and services effectively.

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The AEI project also resulted in permanent modifications to the state reporting system to focus more sharply on collecting and using outcome data on student learning to improve services to high-ability children and adolescents.

Finally, the AEI project resulted in improved infrastructure by training and supporting six evaluation teams who provide formative program evaluations to any district across the state. AEI is a project "with legs." Three years after the completion of the federal grant support for AEI, the evaluation teams continue to function actively. In Spring of 2010, team evaluations for two school districts were undertaken in order to improve services for low-income high-ability students.

Publications, References, Work in Progress

Cotabish, A. & Robinson, A. (2009, April). *The effects of peer coaching on the evaluation knowledge, skills and concerns of gifted program administrators*. Paper presented at the Annual Meeting of the American Educational Research Association. Chicago, IL.

Cotabish, A., Biggers, A., Dragland, A., & Robinson, A. (2007, Winter). The Arkansas Evaluation Initiative in Gifted Education: Accomplishing change through professional development. *Teaching for High Potential*, 10-11.

Robinson, A., & Cotabish, A. (2007). *The Arkansas Evaluation Initiative (AEI) model in gifted education: Implementation materials* [CD-ROM]. Little Rock, AR: Center for Gifted Education.

Robinson, A., Cotabish, A., Bryant, L., Pearson, C., & Duyar, I. (2008, March). *Implementing a team model in a statewide gifted program evaluation initiative*. Paper presented at the Annual Meeting of the American Educational Research Association. New York, NY.

Robinson, A., Cotabish, A., Wood, B. & Biggers, A. (2009). The Arkansas Evaluation Initiative in gifted education. In J.S. Renzulli, E.J. Gubbins, K.S. McMillen, R.D. Eckert, & C.A. Little (Eds.). *Systems and models for developing programs for the gifted and talented, 2nd edition*. Creative Learning Press: Mansfield, CT.

Robinson, A., Cotabish, A., Wood, B., & O'Tuel, F. (2006, April). *The effects of a statewide evaluation initiative in gifted education on practitioner knowledge, skills and concerns*. Paper presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA.

Project Athena: A Language Arts Study in Grades 3-6 in Title I Schools

Summary of the Grant

Project Name: Project Athena

Focus: Language arts and reading

Grade Level: 3-5

Contact Information: Co-principal Investigators: Joyce VanTassel-Baska and Bruce Bracken; , babrac@wm.edu, jlvant@wm.edu

States Served by the Project: Virginia, Maryland, South Carolina

A Case Study

Students in Title I schools demonstrate excitement in learning as they grapple with thinking about the consequences and implications of mythic hero exploits and the meaning of a talented student's poem about a favorite pet. They argue about the appropriate inferences to be made from reading about Einstein's life. In writing, they construct arguments about real world concerns for censorship and the use of technology. As their reading comprehension improves, so does their ability to interpret what they read at a critical level. These students are working with challenging literature, engaging in serious thinking about language, and applying higher level thinking to their writing. They use William and Mary Language Arts Program, developed with Javits Funding, in their classroom every day.

This program includes three advanced units of study using core standards-based approach in language arts Grades 3-5, with special emphasis on critical thinking and conceptual development. Additional supplemental materials were also developed for Title I classrooms, including Jacob's Ladder, a reading comprehension program to move students from lower order to higher order thinking and a series of multicultural novels differentiated for gifted learners.

The Outcome

Based on the growing research evidence on the use of The College of William & Mary's language arts units with gifted learners, William and Mary researchers began a three-year longitudinal study of using the curriculum in Title 1 schools with 28 experimental classrooms implementing the William and Mary language arts unit in grades 3, 4, or 5.

The sample for this three-year study was 1346 students, with 735 in the experimental group and 611 in the comparison group. Results suggested that students in experimental classes scored significantly higher than the comparison group in critical thinking. All students using these units within the experiment showed gains, including gifted, high readers/promising learners, and average students.

Data were also collected on teacher change as a result of both training and use of a differentiated curriculum finding that teachers using the advanced William and Mary units showed significant growth patterns in the use of key elements of differentiation (i.e., critical thinking, creative thinking, accommodation to individual differences) across two years of implementation of the William and Mary units of study in comparison to control group teachers not trained in the curriculum.

The results of this Javits project demonstrated the value of using advanced high-level materials with all learners, in addition to the gifted students as all students benefitted from this program.

Jacob K. Javits Gifted and Talented Students Education Program

Publications and References

- Bracken, B. A., VanTassel-Baska, J., Brown, E. F., & Feng, A. (2007). Project Athena: A tale of two studies. In J. VanTassel-Baska & T. Stambaugh (Eds.), *Overlooked gems: A national perspective on promising students of poverty* (pp. 63-67). Washington, DC: National Association for Gifted Children.
- VanTassel-Baska, J., Bracken, B., Feng, A., & Brown, E. (2009). A longitudinal study of reading comprehension and reasoning ability of students in elementary Title I schools. *Journal for the Education of the Gifted*, 33 (1), 7-37.
- VanTassel-Baska, J., & Stambaugh, T. (2006). Project Athena: A pathway to advanced literacy development for children of poverty. *Gifted Child Today*, 29(2), 58-65.
- VanTassel-Baska, J., Zuo, L., Avery, L., & Little, C. (2002). A curriculum study of gifted student learning in the language arts. *Gifted Child Quarterly*, 46, 30-4
- VanTassel-Baska, J., Feng, A., Brown, E., Bracken, B., Stambaugh, T., French, H., McGowan, S., Worley, B., Quek, C., & Bai, W. (2008). A study of differentiated instructional change over three years. *Gifted Child Quarterly*, 52 (4), 297-312.

Project Clarion: A study of Concept Development in Science Among Young Children K-3

Summary of the Grant

Project Name: Project Clarion

Focus: Science concept learning

Grade Level: K-3

Contacts: Co-principal investigators Bruce Bracken and Joyce VanTassel-Baska, College of William and Mary, babrac@wm.edu, jivant@wm.edu

States: Virginia (3 districts)—Fairfax County, VA; Chesterfield County, VA.; Gloucester, VA.

A Case Study

Wearing his spiffy new lab coat, Rene saunters to the table to begin his role as a practicing scientist. He confers with his partner and proceeds to examine flower petals under the microscope to determine their make-up. He is a budding botanist, working in a William and Mary science unit by the same name. Like other children in his class, he is engrossed with his real world role and the hands-on and minds-on experiences provided him through Project Clarion, including a problem-based learning scenario where he is discovering how plants can help fuel cars!

Project Clarion has developed eight advanced scientific units for use in life, physical, and earth science domains at K-3 grade levels in Title I school settings. Aligned with NRC and AAAS science standards, the units also focused on conceptual development and critical and creative thinking.

The Outcome

In this study, advanced scientific content, concepts and scientific research process skills were studied for students who participated in this project and compared with other students who had not participated in the same district. Students in 48 classrooms participated in Project Clarion as compared to 43 comparison classrooms. All experimental teachers received three days of training on implementing the units of study.

Project Clarion results showed significant gains for all groups on all measures. Students who made these gains were low income Title I learners from all ability groups (gifted, average, low ability) across all ethnic groups (African-American, Asian American, Hispanic American, Caucasian) across two years of data collection.

The rigor of the curriculum, plus appropriate teacher training contributed to these gains in scientific skills. The differences favoring students who participated in Project Clarion demonstrated that significant differences in advanced science can and do occur after 24 hours of classroom instruction in advanced science concepts, content, and process for students in Title I classrooms.

In Project Clarion, teachers rated the advanced science opportunities and instruction as helpful and suggestive of the gains that all Title I students could achieve if given the opportunity to be actively engaged in advanced scientific opportunities.

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Publications, References, Work in Progress

- Bracken, B. A., Holt, K. A., Lee, M. L., McCormick, C. J., Reintjes, C. L., Robbins, J. I., & Stambaugh, T. L. (2008). *Perceptual assessment of science teaching and learning: Preliminary examiner's manual*. Williamsburg, VA: Center for Gifted Education, The College of William and Mary.
- Kim, M., Bland, L. & Chandler, K. (2009) Reinventing the wheel. *Science and Children*, 47(3) 40-43.
- Kim, K. H., VanTassel-Baska, J., Bracken, B., Feng, A., Stambaugh, T., Bland, L. C. (2009). *Project Clarion: Three years of science instruction in Title I schools among K-third grade students*. Manuscript submitted for publication.
- VanTassel-Baska, J., Bracken, B. & Stambaugh, T. (2008) *Project Clarion: A study of science learning at K-3*. Paper presented at the 2008 AERA Annual Meeting, New York, NY.
- VanTassel-Baska, J., Bracken, B., Feng, A., & Stambaugh, T. (2009, April). *Assessing critical thinking in science at primary levels through the use of multiple measures*. Paper presented at the 2009 AERA Annual Meeting, San Diego, CA.

The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: Extending the Pedagogy of Gifted Education to All Students

Focus: Classroom Teachers

Grade Level: Elementary Students in Connecticut

Contact Information: Marcia Gentry, Ph.D., Purdue University, mgentry@purdue.edu

A Case Study

How would low income, primarily minority, students respond to the kind of enrichment clusters normally used for gifted students? This study investigated the impact of providing one type of gifted education pedagogy, enrichment clusters, to the entire population of two urban elementary schools. Enrichment clusters provide a regularly scheduled weekly time for students to work with adult facilitators to complete a product or provide service in a shared interest area.

In this study, elementary schools in 2 urban districts were selected to participate in the study. In each of these districts, enrichment clusters were implemented in one school and one school served as a comparison site. Students in each treatment school attended a pilot and two series of enrichment clusters. Students in all schools were assessed regarding their attitudes toward school and their content area preferences, and students from the treatment schools responded to questions regarding the enrichment clusters. Data were also collected from parents and teachers related to school satisfaction, use of enrichment strategies, and other variables. Qualitative data were collected from teachers, administrators, students, and parents about the implementation of enrichment clusters.

The Outcome

- Approximately 90% of the students completed group or individual products in clusters, and there were no differences in the number of products completed when examined by achievement, gender, special program placement, or ethnicity. This means that all students were able to complete challenging, authentic products when given an opportunity.
- More challenging content was integrated into 95% of the clusters through teaching specific authentic methodologies, advanced thinking and problem solving strategies.
- Approximately 60% of the teachers who facilitated clusters transferred some of the strategies used in clusters into their regular classroom practices.
- Teachers used advanced content and methodologies in the enrichment clusters and provided challenges and choices to the students.
- Enrichment clusters were implemented successfully in low socioeconomic, culturally diverse urban schools in which these clusters can be adapted and tailored to fit individual school schedules and needs.

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- It was possible to provide a block of time during the school week for enrichment clusters focusing on student and teacher interests, where students have choices, and when there was challenge and enjoyment in learning.
- Teachers who facilitated or assisted with clusters began to use strategies from enrichment clusters in their regular classrooms. These strategies included using both content and methods.

Teachers involved in the study commented:

- The most enjoyable thing in working with the cluster was watching the students as they began to dig in, pull out from inside, work towards a project, and see success with that project. Clusters are a superb idea.
- The students enjoyed working with others who shared their interests, so I group by interest more often in my classroom.
- The students enjoyed the hands-on activities in the enrichment clusters, so I've tried to allow for more hands-on learning in my classroom.

Publications, References, Work in Progress

Reis, S. M., Gentry, M., & Park, S. (1995). *Extending the pedagogy of gifted education to all students* (Research Monograph 95118). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Reis, S. M., Gentry, M., & Maxfield, L. R. (1998). The application of enrichment clusters to teachers' classroom practices. *Journal for Education of the Gifted*, 21(3), 310-324.

Renzulli, J. S., Gentry, M., & Reis, S. M. (2007). Enrichment clusters for developing creativity and high-end learning. *Gifted and Talented International*, 22 (1), 39 – 47.

The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: Why Not Let High Ability Students Start School in January: Curriculum Compacting Research Study

Focus: Elementary students nationwide in 20 states

Grade Level: 2-6

Contact Information: Sally M. Reis, Ph.D., University of Connecticut,
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A Case Study

Imagine if we suggested that high-ability students in grades 2-6 start school in January? Have some gifted and talented students already mastered the grade-level math, reading, science, or social studies curriculum at the beginning of the school year? In this study, 436 teachers assessed over 780 young people from 27 school districts across the country with standardized achievement tests that were one year above grade level. In experimental study, teachers were randomly assigned to four groups: three treatment groups that received increasing levels of professional development or a control group. Professional development focused on "curriculum compacting," which uses pre-assessment to document what students know and are able to do before they start a new topic or unit. After teachers identified what students already know through assessment, students are assigned new work that is more challenging and often, in their areas of interest. Conclusions of the curriculum compacting study revealed the following:

The Outcome

- Approximately 40-50% of traditional classroom material could be eliminated for targeted students in mathematics, language arts, science, or social studies.
- The most frequently compacted subject was mathematics, followed by language arts.
- Science and social studies were compacted when students demonstrated very high ability in those areas.
- When teachers eliminated as much as 50% of the regular curriculum for gifted students, no differences in the out-of-level post achievement test results between treatment and control groups were found in reading, math computation, social studies, and spelling.
- Students were exposed to challenging curricular options based on the pre-assessment results.

Teachers commented about their involvement with this experimental study:

- This is such an exciting way to teach! I feel the students involved in the compacting program had the opportunity to become such active, independent learners. They had a taste of learning through their own actions not just the materials spooned out through limited textbooks.
- Curriculum compacting was a strategy that challenged all students in my class. Although I started using it with gifted students, I eventually used it with other students as well.

Publications, References, Work in Progress

- Reis, S. M., Westberg, K. L., Kulikowich, J., Caillard, F., Hébert, T., Plucker, J., Purcell, J. H., Rogers, J. B., & Smist, J. M. (1993). *Why not let high ability students start school in January? The curriculum compacting study* (Research Monograph 93106). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.
- Reis, S. M., Westberg, K. L., Kulikowich, J. M., & Purcell, J. H. (1998). Curriculum compacting and achievement test scores: What does the research say? *Gifted Child Quarterly*, 42(2), 123-129.
- Reis, S. M., & Purcell, J. H. (1993). An analysis of content elimination and strategies used by elementary classroom teachers in the curriculum compacting process. *Journal for the Education of the Gifted*, 16(2), 147-170.
- Reis, S. M., & Renzulli, J. S. (1992). Using curriculum compacting to challenge the above-average. *Educational Leadership*, 50(2), 51-57.

The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: An Exploratory Study of the Effectiveness of the Staff Development Model and the Research-Based Assessment Plan in Improving the Identification of Gifted Economically Disadvantaged Students

Focus: Elementary students

Contact Information: Scott Hunsaker, Ph.D., Utah State University, scott.hunsaker@usu.edu

A Case Study

What if we could find an effective way to identify gifted lower income students? One major problem has been that teaching staff in high poverty areas do not nominate children for gifted testing at anywhere the same rate as teachers in higher income areas. In this study, a Staff Development Model (SDM) and a Research-Based Assessment Plan (RAP) developed by researchers at The University of Georgia were tested for their potential to improve the identification and education of gifted students from low income families, some of whom may not speak English very well. Five school systems in Georgia and one in North Carolina (17 schools in all) participated in the study. The sample included 246 faculty and staff in these 17 schools.

The Outcome

- Teachers who receive professional development in identifying culturally diverse and high poverty students on the specific traits, aptitudes, and behaviors associated with giftedness in these populations can learn to identify gifted students from diverse backgrounds.
- Teachers often fail to identify children who are gifted but who are from poverty or low income backgrounds because their gifts and talents are difficult to recognize.
- Educators should not rely exclusively on traditional assessment procedures (IQ tests, achievement tests) to identify economically disadvantaged gifted students. A variety of information (student products, checklists, portfolios) needs to be considered.
- Teacher training in the identification of economically disadvantaged gifted students improves the teacher's ability to recognize unique talents and gifts.
- Once classroom teachers have been adequately trained in assessment procedures, they should play a key role in the identification process. Referral, identification, and programming need to be approached from the classroom teachers' perspectives.

Teachers commented about their involvement with this study:

- Everyone is delighted with our participation in the project. Without Exception, teachers and administrators would like to see this identification process used system wide. Everyone I have talked to considers it a superior method.
- My supervisor is really pleased with the new assessment. She has always felt that we were missing children because of distracting and/or complicating behaviors and characteristics, but did not know exactly how to address this problem The principal is apprehensive being from the "old school." He still sees "gifted" as academically/IQ based only. Educate, educate, educate!

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Publications, References, Work in Progress

Frasier, M. M., Hunsaker, S. L., Lee, J., Finley, V. S., García, J. H., Martin, D., & Frank, E. (1995). *An exploratory study of the effectiveness of the staff development model and the research-based assessment plan in improving the identification of gifted economically disadvantaged students* (RM95224). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: The Effects of Grouping and Curricular Practices on Intermediate Students' Math Achievement

Focus: Grades 4-5

Contact Information: Carol Tieso, Ph.D., College of William and Mary, cties@wm.edu

States in which the study was conducted: Connecticut, Massachusetts, Rhode Island

A Case Study

What if we could improve the academic achievement of middle school students in mathematics by grouping them in a different way? What if we could modify the mathematics units and improve achievement greater still? Thirty one teachers and 645 students from 4 diverse school districts were involved in this study to find out the answers. The purpose of this study was to investigate the combined effects of grouping with appropriate teaching practices on intermediate students' mathematics achievement. A further purpose was to compare classrooms that featured whole class instruction but were distinguished by the type of curriculum implemented: regular textbook versus a modified or remodeled curriculum unit.

The Outcome

- Students who used an enhanced or modified mathematics unit had higher academic achievement than students who used a regular textbook unit.
- Quantitative analyses indicated that a differentiated mathematics unit used in combination with flexible grouping practices improved the academic achievement of students in middle and high level groupings when compared with the comparison subgroups.
- The qualitative results indicate that teachers must look beyond the bindings of their regular textbook to create authentic and meaningful curriculum for students and to have a more lasting effect on student learning.
- Students from all socio-economic backgrounds made significant gains during implementation of the enhanced or differentiated mathematics unit as compared to the control group.
- Teachers have concerns about the logistics and classroom management aspects of different grouping arrangements, but appreciate the need for such arrangements.
- Students enjoyed working in a variety of different grouping arrangements, especially the Joplin Plan, without damage to students' self-esteem or self-efficacy.
- Students who were provided with more authentic learning goals persisted and were more motivated than their peers in the comparison group.

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Publications, References, Work in Progress

Tieso, C. L. (2005). The effects of grouping practices and curricular adjustments on achievement. *Journal for the Education of the Gifted*, 29(1), 60-89.

Tieso, C. L. (2002). *The effects of grouping and curricular practices on intermediate students' math achievement* (RM02154). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: Talents in Two Places: Case Studies of High Ability Students with Learning Disabilities Who Have Achieved

Focus: Gifted College Students With Learning Disabilities

Contact Information: Sally M. Reis, Ph.D., University of Connecticut,
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A Case Study

During the last few decades, more attention has been paid to the problem of high ability students who also have learning disabilities, but problems still exist as far as the identification and amount of support services and programs for this group. This study included in depth case studies of 12 young adults with disabilities who were successful at the college level, all of whom had high aptitude but also had learning disabilities. The students and their parents were interviewed and data analyzed from interviews and extensive school records.

The Outcome/Findings

- High ability students with learning disabilities often struggled in elementary and secondary school as well as in college.
- These students are not usually recognized for their gifts.
- A focus on remediation techniques offers little challenge to high ability students with learning disabilities, which may perpetuate a cycle of underachievement.
- High ability students with learning disabilities need support to understand and effectively use their strengths.
- Half of the gifted/learning disabled students in this study had sought counseling or psychiatric help.
- Parents play a critical role in offering support to their high ability children with learning disabilities.

College students involved in the study recalled the frustration of their early years:

- I stayed back in 2nd grade – So now, I was both bigger and dumber.
- I didn't do anything. I just sat back because I was so angry. I didn't do anything. It was like I sat like this, and when they asked me a question, it was like, "You think I am dumb? I will show you how dumb I am."
- They made up songs about me. At the end of doing all of the times tables, you had to take a thing call "The Review." It was flash cards, and it mixed up all the different times tables, and you had to do a certain number of them, and pass the review, and there would be a big thing about "so and so has already gotten to the review and so and so did it today." I never got the review, and there

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was this song about that “Peggy will never take the review” made up about half way through the school year.

- I couldn't do certain things and the teachers were always hounding me and also I kind of got it into my head that I wasn't that smart. Sort of, I don't know, I think I was kept down. Because I think I could have done a lot more, but they would always put me in low groups and things, I was never in the highest reading groups or the spelling groups.

Publications, References, Work in Progress

Reis, S. M. & Colbert, R. D. (2004). Counseling needs of academically talented students with learning disabilities. *Professional School Counseling*, 156-167.

Reis, S. M., McGuire, J. M., & Neu, T. W. (2000). Compensation strategies used by high ability students with learning disabilities who succeed in college. *Gifted Child Quarterly*, 44(2), 123-134.

Reis, S. M., Neu, T. W., & McGuire, J. M. (1997). Case studies of high ability students with learning disabilities who have achieved. *Exceptional Children*, 63(4), 1-12.

Reis, S. M., & Rubin, L. M. (2004). Students with both gifts and learning disabilities. In (T. M. Newman & R. J. Sternberg). (Eds). *Students with both gifts and learning disabilities*. New York: Kluwer Academic. (pp. 155-198).

Ruban, L. M., McCoach, D.B., McGuire, J.M., & Reis, S. M. (2003). The differential impact of academic self-regulatory methods on academic achievement among university students with and without learning disabilities. *Journal of Learning Disabilities*. 36 (3). 270-286.

Project LOGgED ON: Learning Opportunities for Gifted Educationally Disadvantaged Students Online

Summary of the Grant

Project Name: Project LOGgED ON

Focus: Science education; education of gifted and differentiation

Grade Level: grades 6-12; Professional Development

Contact Information: Carolyn Callahan, Ph.D., University of Virginia, cmc@virginia.edu

States Served by the Project: North Carolina, South Carolina, Virginia, Pennsylvania, New York, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Indiana, Idaho, Washington, Alabama, Louisiana

A Case Study

Consider this scenario: You have just arrived for your first day of work for the summer in Oyster, VA. Upon arrival, researchers educate you about the eutrophic conditions of the Chesapeake Bay and the factors that contribute to these conditions. You are left wondering: how should we manage such a large watershed to control the inputs of nitrogen and phosphorus? How can scientists use their understanding of science to assist with the issues of human impact on water resources?

Project LOGgED On's Advanced Environmental Science course is an online case-based course designed to include complex, sophisticated, and inter-disciplinary approaches to understanding the nature of environmental science. Each case posed an authentic environmental issue or problem to solve that could be approached in a variety of ways. This course is just one of four online case-based courses that supports and encourages scientific inquiry and problem solving developed by researchers at the University of Virginia Curry School of Education under a Jacob Javits Gifted/Talented Student Education grant by the federal government. The grant was developed to address the problem of access to highly challenging science curriculum for economically disadvantaged, rural, or otherwise underserved gifted and academically advanced learners.

The grant's innovative solution to the problem of access and to the creation of a different kind of learning experience was the combining of online technology with a case-based learning approach. Two computer-based, case-based science courses were created and implemented at the middle school level, and two on-line advanced level science courses based on Advanced Placement (AP) curriculum in Environmental Science physics were offered at the secondary level. A sequence of five online case-based professional development courses for teachers and administrators were also created and delivered online. The two Middle School courses exposed students to learning experiences designed to improve science content and skill acquisition as well as inquiry and problem-resolution skills. The two online high school level courses included the advanced environmental science course and a conceptual physics course. They were delivered during the project as stand-alone courses offered over the course of the academic year, and the courses are now offered online by the Virginia Department of Education. These courses have also been used as supplemental materials in traditional AP courses.

The Outcome

The Middle School curriculum was completed and offered to over one thousand students. Student achievement instruments used for pre- and post-assessments of the Middle School curriculum implementation included recently retired Third International Math and Science Study (TIMSS) test items and the Iowa Test of Basic Skills (ITBS) science section. Students who participated in Project LOGgED On's middle school curriculum scored significantly higher on both tests than students in the control classes. Results indicated that exposure to the advanced science curriculum influenced the students' ITBS post test scores with the experimental group benefiting more from the exposure to the science curriculum.

By offering our online Advance Environmental Science and Conceptual Physics courses to students in rural settings, in poor urban settings, and to students being homeschooled, we exposed learners to challenging science content that they would not have had access to otherwise. These learners were brought together via the online aspect of the project with instructors paid by the project to share their thoughts and ideas. All participating students also had the opportunity to take the respective AP exam. One hundred ten (110) students completed the Advanced Environmental Science course, 79 students chose to take the AP Environmental Science exam. Thirty percent (30%) scored a 3 or higher on the exam (a passing score).

Analysis of the discussions online documented significant learning, engagement and perceived challenge by the students enrolled in the class. Specifically, Project LOGgED On's Advanced Environmental Science curriculum promoted inductive thinking and the use of problem-solving skills as it called upon students to interpret data, analyze case studies, and solve complex real-world science problems. Both advanced high school curriculums were adopted by and continue to be administered by the Virginia Department of Education's Virtual AP School.

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Project M³: Mentoring Mathematical Minds **An Innovative Math Program Making a Difference for Gifted Students**

Summary of the Grant

Project Name: Project M³: Mentoring Mathematical Minds, <http://www.projectm3.org/>

Focus: Elementary

Grade Level: 3-5

Contact Information: M. Katherine Gavin, Ph.D, University of Connecticut;

Kathy.gavin@uconn.edu

States Served by the Project: Connecticut, Kentucky

A Case Study

Enter a Project M³ classroom and you will find students thoroughly engaged in high-level mathematical investigations, thinking and acting like practicing mathematicians as they discuss, argue about, and justify their reasoning. For example, they may be making learning about slope and y-intercept in an algebra unit or experimenting with the properties of cross sections of geometric solids in grades 3-5! Even more poignant is the fact that these students were from high-poverty schools where gifted programming in math had not previously existed.

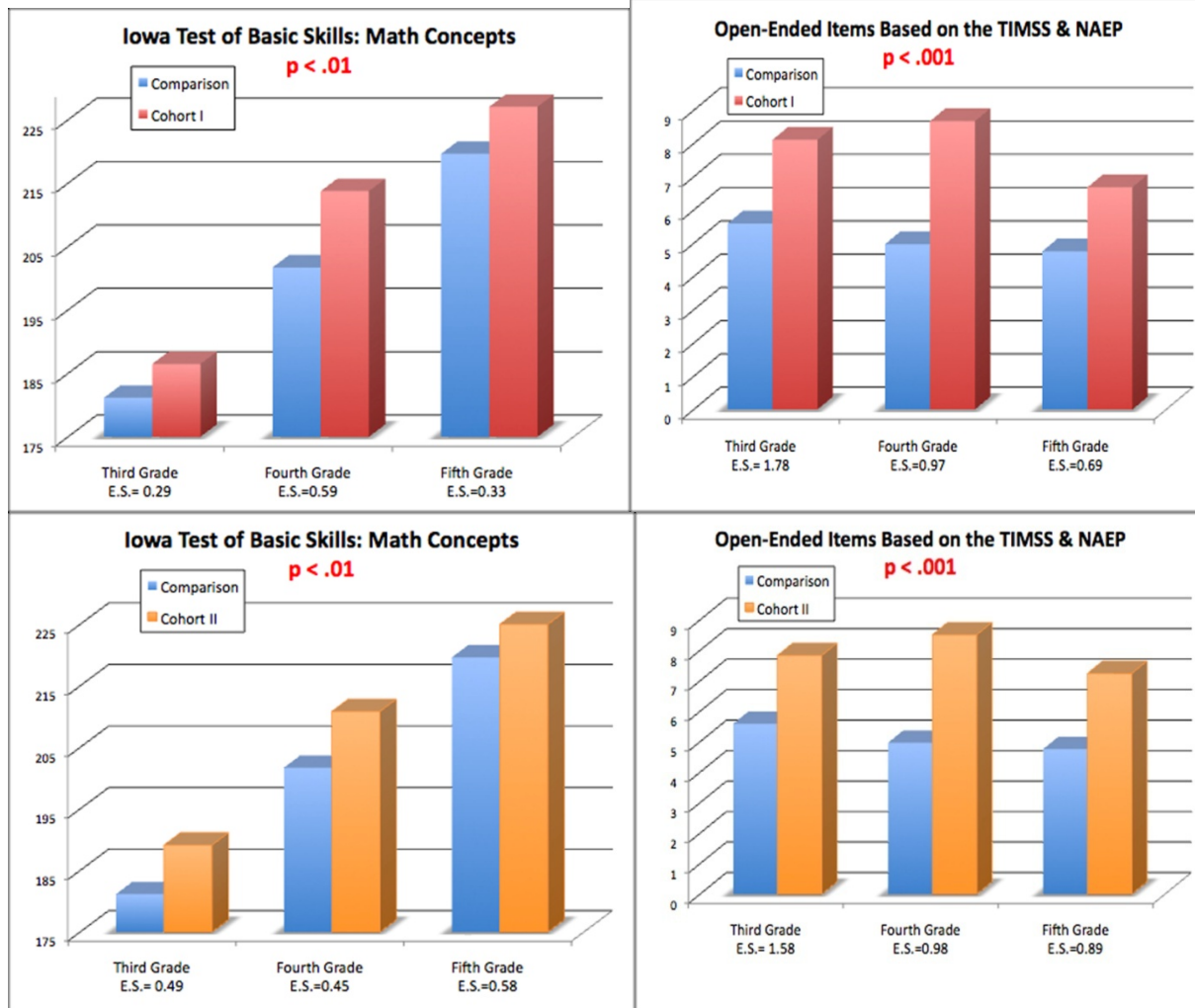
In fact, at the start of the project, one principal in Hartford, CT, the sixth poorest city in the United States, claimed he did not have any talented math students in his school. However, 38 mathematically promising third graders who participated in Project M³ were subsequently identified. In this school, Anna, a Hispanic student, was going to be retained in second grade because of her limited English proficiency. Instead she was identified for Project M³ and promoted to third grade. During the first year of the project, Anna began to raise her hand and contribute to class discussions. She scored the third highest in the data unit. At the end of her third year in the program, she was at the top of the class and has continued in the Hartford honors math program. Another student, Carlos, won a national award from the National Council of Teachers of Mathematics (NCTM) TODOS organization for his problem-solving ability and his expertise at communicating the solution in writing. Now, three years after the grant has ended, this school continues to use Project M³. The principal, teachers, and parents believe their children have talent. Most importantly, students in the program believe they are smart in math and love the challenging curriculum.

Project M³ is a series of 12 advanced curriculum units at three levels of increasing difficulty. The units are based on the NCTM Standards with a special focus on the development of critical and creative thinking skills in problem solving. In accord with exemplary practices in gifted education, students solve complex problems and discuss their solution methods, create their own problems, investigate situations and debate ideas. Teachers facilitate and guide discussions, assist students in generalizing concepts, and provide mathematical expertise when necessary. Designed by leading experts in gifted mathematics education, the content is one to two grade levels beyond the regular curriculum and is presented in engaging contexts to spark student interest and love of mathematics.

The Outcome

Project M³ students scored significantly higher on traditional standardized tests and on open-ended items focused on critical thinking and reasoning than a comparison group of talented students who were not using the program. To measure the effectiveness of the Project M³ curriculum, two longitudinal studies were conducted over the course of 5 years with two cohorts of students who progressed from grade 3 to grade 5 in 11 schools across the country. Pre- and post-testing on all 12 units showed highly significant gains for all schools. In fact, on several of the unit tests, students from high poverty populations made greater gains than students from higher income populations. This happened across all grade levels for both cohorts of students. The graphs below show results between Project M³ cohorts and the comparison groups.

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The Project M³ curriculum is now in use in 46 states and some foreign countries including Singapore and Korea. The program has received the prestigious Curriculum Studies Award from the National Association for Gifted Children for the past 6 years and the authors have been honored with the 2009 Research Paper of the Year by *Gifted Child Quarterly*, the leading research journal in Gifted Education. But the real impact of this Javits grant is the fact that talented elementary students now have rich, challenging and enjoyable mathematics to study. Hopefully this will continue throughout their schooling and perhaps encourage them to pursue a career in mathematics or a related field.

Publications and References

Gavin, M. K., Casa, T. M., Adelson, J. L., Carroll, S. R., & Sheffield, L. J. (2009). The impact of advanced curriculum on the achievement of mathematically promising elementary students. *Gifted Child Quarterly*, 53, 108-202.

Gavin, M. K., Casa, T. M., Adelson, J. L., Carroll, S. R., Sheffield, L. J., & Spinelli, A. M. (2007). Project M³: Mentoring Mathematical Minds: A research-based curriculum for talented elementary students. *Journal of Advanced Academics*, 18 (4), 566-585.

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The Schoolwide Enrichment Model in Reading (SEM-R)

Summary of the Grant

Project Name: The Schoolwide Enrichment Reading Model (SEM-R)
Focus: Elementary and Middle, Two Separate Grants: Funded in 2004 and 2009
Grade Level: Grades 2-8

Contact Information: Sally M. Reis, Ph.D., University of Connecticut,
sally.reis@uconn.edu; www.gifted.uconn.edu/semr

States Served by the Project: CT, NC, MD, MN, CA, CO, LA, FL, NY, OH, IL

A Case Study

During the last eight years, in several urban, high poverty elementary and middle schools across the country, an alternative approach focusing on engagement and enjoyment of reading has been used instead of traditional reading instruction has occurred on a daily basis. The Schoolwide Enrichment Reading Framework (SEM-R), funded by Javits, is a different approach to reading instruction for high poverty students. Instead of using basal readers and workbooks, SEM-R using the SEM-R are exposed to high interest books and choose to read in their areas of interest as long as the books are challenging and above their current level of reading. High interest libraries are provided for every classroom and the focus is on enjoyment in and students learn to love to read. In the SEM-R, students' strengths and interests are analyzed and reading instruction is delivered through the use curricular differentiation (both acceleration and enrichment) as well as instructional differentiation. The goal of the SEM-R is increased student reading fluency and comprehension, as well as enjoyment and self-regulation in students who are at greatest risk of developing reading problems or becoming alliterate, that is, being able to read but choosing not to read.

The instructional design calls for three phases of instruction:

Phase I - Exposure

- Teachers select literature to read aloud to students, interspersed with higher-order questioning and thinking skills instruction.

These "book hook" sessions are initially 10 to 20 minutes in length, and teachers are encouraged to share high interest, challenging books with their students. A variety of genres can be selected for this phase including mysteries, poetry, historical and science fiction, biographies, autobiographies, and other non-fiction. The program emphasizes helping students to enjoy the process of reading. Teachers are provided with bookmarks that feature guiding questions involving higher order thinking skills to help them frame the class discussion for the read aloud.

Phase II – Training and Self-Selection

- The development of students' capability to engage in a structured silent reading time of self-selected high interest books is emphasized in this phase.

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Students are supported with individualized, differentiated reading conferences, termed Supported Independent Reading (SIR). Teachers coach students to select books that are slightly above their current reading level and the appropriate match is continually assessed through regular conferences with each student two to three times each week. While all students read independently, the teacher provides one-on-one instruction in strategy use, including phonics and vocabulary, as well as a higher-level discussion of the students' choice of books.

Phase III – Interest and Choice Components

- Students are encouraged to move from teacher directed opportunities to self-choice activities over the course of the school year.

Activities include (but are not limited to) opportunities to:

- *explore new technology*
- *engage in discussion groups*
- *writing activities*
- *creativity training in language arts*
- *learning centers*
- *interest-based projects*
- *continuation of self-selected reading*
- *book chats.*

The intent of these experiences is to provide time for developing and exploring student interest in reading. In addition, students engage in creative and critical thinking training and advanced training in the use of the Internet to find information about various literary genres, such as biographies and autobiographies. Options for independent study are also made available for students during this phase.

The Outcome

Experimental research on the SEM-R has found that students of various achievement levels have benefitted from the SEM-R approach. The 27 schools across the country that have implemented the SEM-R as part of this Javits grant have had similar results. Gifted students as well other students who achieve at average or below average levels and who participate in the enriched and accelerated SEM-R program had significantly higher scores in reading fluency and comprehension than students in the control group who did not participate in the SEM-R. Results have been consistently positive, as in every study students using the SEM-R have scored higher or as well in comprehension and reading fluency, despite having 5 hours each week of whole group basal reading content eliminated and replaced with brief differentiated reading conferences. Results show achievement differences favoring the SEM-R treatment across all levels, including gifted students who read well above, and students who read at and below grade level, suggesting the benefits of using this enriched and differentiated reading approach for all students.

Even bilingual students in urban schools who had the opportunity to use SEM-R had higher oral reading fluency and comprehension scores suggesting that the SEM-R, an enriched reading program that challenges and engages students may result in higher oral reading fluency and comprehension for students who read in either English or Spanish. One of the 27 schools across the country have participated in this Javits grant with strong results favoring the SEM-R, including Keeney School in Manchester. When Keeney teachers began using the SEM-R, the school had some of the lowest reading comprehension scores in the district. Now, they have the highest reading scores in the district and other students whose schools are not making adequate yearly progress are transferring into Keeney School.

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Publications, References, Work in Progress

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Developing Talents and Improving Student Achievement Among Traditionally Underrepresented Populations: An Experimental Investigation Scaling-up the Total School Cluster Grouping Model

Summary of the Grant

Project Name: Developing Talents and Improving Student Achievement Among Traditionally Underrepresented Populations

Focus: Using Gifted Education Strategies and Programming to
Grade Level: **K-6**

Contact Information: Marcia Gentry, Ph.D., Purdue University, mgentry@purdue.edu,
States Served by the Project: 110 schools in the following 9 states: Arizona, Colorado, Florida, Indiana, Michigan, North Carolina, Oregon, Washington, Wisconsin

A Case Study

The Total School Cluster Grouping Model (TSCG) is a specific, research-based, total-school application of cluster grouping combined with differentiation, focused on meeting the needs of students identified as gifted, while also improving teaching, learning, and achievement of *all* students. Research on TSCG has shown that student achievement increases, teachers widely implement gifted education strategies with all students, and more students are identified as high-achieving and fewer students are identified as low-achieving. Research has also shown that TSCG improves achievement and increases the numbers of students identified as gifted from economically disadvantaged families and from diverse cultural and linguistic backgrounds.

A 5-year study with 50 treatment and 50 control schools with all students and teachers at each site are included in the study. The research team, consisting of gifted education and content experts, will provide start-up information and training of leadership teams, web-based support, and delivery of 7 on-line gifted-education professional-development modules designed to promote understanding of gifted students, recognition of talent among underserved populations, and implementation of gifted-education differentiation strategies. Thus, planning and training in Year 1 will be followed by treatment implementation and repeated-measures identification and achievement data collection in Years 2 through 5. Treatment effects will be examined using a 3-level growth-curve model to explore specific school, group, and individual differences as well as to discern whether the individual growth of students in the treatment program is greater than that of the control group.

The Outcome

This project is a scale up project from previously innovative, published, and successful research demonstrating that cluster grouping has positive effects on student achievement, identification of underrepresented students, and teacher practices.

Jacob K. Javits Gifted and Talented Students Education Program

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The National Research Center on the Gifted and Talented

Summary of the Grant

Project Name: Case Studies of Talented Students Who Achieve and Underachieve in an Urban High School

Focus: High School Students

Grade Level: 9-12

Contact Information: Contact Information: Sally M. Reis, Ph.D.,
sally.reis@uconn.edu

A Case Study

Why is it that some high ability students achieve in school and others do not? Student performance that falls noticeably short of potential, especially for gifted and talented students and those with very high ability who have not been identified, is one of most frustrating of all challenges faced by both teachers and parents. The literature describing the problem of academic underachievement among high ability students dates several decades, and is still considered a major problem. According to a national needs assessment survey conducted by the National Research Center on the Gifted and Talented, most educators of gifted students continue to identify the problem of underachievement as their number one concern.

Some students underachieve or fail in school for obvious reasons: excessive absences from school, poor performance, disruptive behavior, low self-esteem, family problems, and poverty. In addition to the risk factors that clearly predict the reasons why most students fail, another long-standing problem which causes underachievement in gifted or high potential students is the unchallenging curriculum and content that they encounter on a daily basis. The hundreds of hours spent each month in classrooms in which students rarely encounter new or challenging curriculum, the boredom of being assigned routine tasks mastered long ago, the low levels of discussion, and the mismatch of content to students' ability lead to frustration on the parts of many of our brightest students. This Javits funded study identified a sample of gifted students and followed them over their high school years.

In this study, high ability/gifted students were studied over a 3 year period in a large urban high school. Thirty-five students participated in the research in which half of the students were found to be underachieving. In this school, 60% of the students were Hispanic, approximately 20% were African American and the remaining 10% were a mixture of White, Asian, and other racial/ethnic groups.

The Outcome

- Approximately half of the identified gifted students identified as freshman were found to be underachieving in this urban high school by their junior year of high school. Some dropped out, some of the girls became pregnant, and few of the underachieving students went on to college or post-secondary training.
- High ability students who achieved had strong belief in self, acknowledged the importance of peers in supporting and challenging them to succeed, and believed that being grouped with other student of high achievement made a positive difference.
- High ability students who underachieved in high school acknowledged that their underachievement began in elementary school when they were not provided with the appropriate levels of challenge.
- Students who underachieved in school did not exhibit the same belief in self, often came from families in which problems were evident, and were not resilient enough to overcome urban environmental factors such as gangs and drugs.
- The abilities of high ability students who underachieved were often unrecognized by their parents, teachers, and guidance counselors during their elementary school years.

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