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GPA coffee — Research Review
December 8, 2015

Dr. Karen Rogers's Research Synthesis

We are very fortunate to have Dr. Karen B. Rogers on the Grayson Research Advisory Board (GRAB). Dr. Rogers is a Professor of Gifted Studies in the Special Education & Gifted Education Department, at College of Education, Leadership, and Counseling at the University of St. Thomas in Minneapolis, Minnesota, where she has taught and conducted research since 1984. She is author or co-author of five books (with another four in the works), many journal articles, multiple publications, and book chapters. Her research interests include twice-exceptionality; research synthesis techniques; cognitive development; gifted program design, development, and evaluation; student assessment; and arts education. Most recently, she was awarded the NAGC Distinguished Scholar Award for 2015.

Dr. Rogers is traveling to Washington, D.C. in January to discuss the research being supported by her federally-funded Javits Grant. She will be joined by another GRAB member, Dr. Wendy Behrens, and they have generously offered to come to Grayson to spend time with our faculty and staff to offer a day and a half of professional development, time which will be of invaluable benefit to our teachers and, as a result, to your children.

Most exciting is that Drs. Rogers and Behrens have made plans to spend time just with our parents at two events in January — mark your calendars!

- **Dinner with Grayson parents on Thursday, January 7th**
- **Parent workshop on Saturday, January 9th**

In anticipation of her visit, I'd like to share a selection of Dr. Rogers's research synthesis on best practices in gifted education. There is a lot of information included in the attached article, but we're sure you'll find it fascinating!

The following website is one of the sources for this information:

<http://austega.com/gifted/16-gifted/articles/41-research-synthesis-on-gifted-provisions.html>

This research has been published with Dr. Rogers's permission and is updated from her 1991 seminal "A best-evidence synthesis of research on accelerative options for gifted students" in N. Colangelo, S. G. Assouline & D. L. Ambrosion (eds.) Talent Development: The Proceedings from the 1991 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development (pp406-409), University of Iowa, Trillium Press.

If you have questions about this article or would like more information or resources on this or any other topic, please contact Jill Williford Wurman, Director of Research & Development: JWW@TheGraysonSchool.org.

Research Synthesis on Gifted Provisions

Dr. Karen Rogers updates (1999) her earlier synthesis of what the research says about gifted educational provisions

ESSENTIAL GIFTED EDUCATIONAL provisions have been tabulated as follows:

The results of research studies in each of these categories have been synthesized to derive general results. These have been presented as quantified measures of the effect of the provision when these effects are statistically significant.

Statistically significant data exists to support the following information when comparing gifted students with regular students.

Research on Instructional Delivery: Projects, Independent Study, Hands-On

Gifted students demonstrate the following at a statistically significant level when compared to normal students:

- Preference for self-structured tasks and self-imposed deadlines
- Preference for working on projects alone or with one like ability peer
- Preference for self-instructional tasks (programmed instruction), games or simulations
- Greatest preference for independent study projects that are reading/content acquisition-based
- Greater interest in learning "something new and different, " rather than doing hands on things.

Research on Instructional Delivery: Lecture, Discussion, Mentoring Tutoring

- In lecture situations, gifted students tend to be multi-modal (visual and auditory) in their acquisition, processing
- For auditory gifted students, there is a love of discussion; for more visual gifted students, discussion is not a favorite

- Mentorships among gifted students, which further their understanding in a specific field result in socialization effects (ES=.47) and self-esteem effects (ES=.42), as well as academic effects (ES=.57)¹
- One-to-one tutoring, with a focus on advancing, not remediating, knowledge, results in an ES of 2.00

Research on Instructional Delivery: Pacing, Process Modifications

- The learning rate of children above 130 IQ is approximately 8 times faster than for children below 70 IQ.
- Gifted students are significantly more likely to retain science and mathematics content accurately when taught 2-3 times faster than "normal" class pace.
- Gifted students are significantly more likely to forget or mislearn science and mathematics content when they must drill and review it more than 2-3 times.
- Gifted students are decontextualists in their processing, rather than constructivists; therefore it is difficult to reconstruct "how" they came to an answer.

Research on Instructional Delivery: Instructional Process Modifications

- Gifted students tend to use more higher-order thinking even without training, but benefit significantly from being trained in these skills.
- Gifted students prefer a structured learning environment (desks, tables, etc.) but open-ended tasks and assignments.
- Academically or intellectually gifted students tend to be uncomfortable taking risks or dealing with ambiguity; therefore there is a need for teaching creative thinking and encouraging divergent production.
- The greatest academic benefits of "discovery" learning have been attained with gifted students, particularly if the learning was Brunerian (teaching of major ideas and concepts).
- Gifted students tend to mistrust the benefits of small group learning; care must be taken that the tasks demonstrate that the group can "do better" than the individual.
- Gifted students perform significantly more highly when the majority of their time is spent in true peer interactions.

¹ The reported quantification is called ES (for "effect size"), referring to how much effect a particular adaptation has in terms of the time required to complete the curriculum for that year. For example, an effect size (ES) of .38 for non-graded classrooms (i.e., students of different grades/ages combined in one room, like] Grayson) means if only the effect of non-graded classroom is studied, gifted children in a non-graded classroom would gain .38 of a school year through use of this adaptation alone as compared with their gifted peers in a regular classroom. Thus, in slightly less than 3 years, a student would have completed more than 4 years of work based on this adaptation alone. Effect sizes of .30 or higher have a substantial impact on a student's learning levels, as three years down the road the student will be one full year ahead of a regular class.

- Teachers who are extensively trained in gifted education produce significantly higher academic and self-esteem effects for gifted students.

Effective Teachers of the Gifted

Based on questionnaire data and needing more thorough research, effective teachers of the gifted have the following characteristics:

- High degree of intelligence, intellectual honesty
- Expertise in a specific intellectual or talent area (mathematics, writing, etc.)
- Self-directed in own learning, with a love for new, advanced knowledge
- Equanimity, level-headedness, emotional stability
- A genuine interest in, liking of gifted learners
- Recognition of the importance of intellectual development
- Strong belief in individual differences and individualization
- Highly developed teaching skill and knowledge

Student responses suggest effective teachers of the gifted need to:

- Be patient
- Have a sense of humor
- Move quickly through material
- Treat each student as an individual
- Avoid being a "sage on the stage" all the time
- Consistently give "accurate" feedback

Research on Curriculum for the Gifted: Content modifications

- There are powerful academic effects when gifted learners are given abstract and/or complex content
- Gifted learners tend to be analogical in their processing and therefore "get" the themes of true interdisciplinary curriculum more successfully
- Gifted learners as decontextualists tend to learn most successfully when they are given the whole concept, in depth, up front and then allowed to break it down through analysis
- Gifted boys, in particular, and to some extent, girls are motivated by learning the way things work and the ways professionals work (Methods of Inquiry); gifted students are more successful with "practicing professionals" tasks than are other students
- Gifted girls, in particular, and to some extent, boys are motivated by learning about the famous people, career paths, and people-oriented issues of a content area; biography reading often provides "role models" for gifted learners

Research on Curriculum for the Gifted: Product Modifications

- A variety in production requirements [what work the student is expected to “turn in” — a model, a drawing, a diorama, a play, etc.] improves motivation and self-direction.
- "Realistic," corrective feedback produces significant positive effects for gifted learners.
- High, but specific, expectations for performance result in significant "cognitive dissonance" but with significant rises in academic self-esteem.