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Reflections on My Work: The Identification and Development of Creative/Productive Giftedness

Joseph S. Renzulli

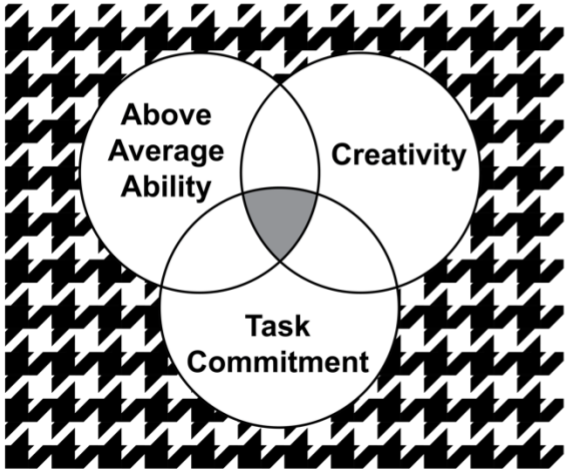
> Any new theory is first attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally, it seems to be important—so important that its adversaries claim that they have discovered it themselves.
>
> *William James*

Most of my work over the past several decades has focused on the four theories depicted in Figure 1. The first two theories, the Three Ring Conception of Giftedness and the Enrichment Triad Model, were developed simultaneously, the first one dealing with the interacting characteristics that describe what contributes to creative productivity and second dealing with three types of educational enrichment experiences that promote its development. The context in which they subsequently evolved had its origins in my work in the late 1950s as a junior high school mathematics and science teacher. In the years that followed, I began to pursue graduate work in educational psychology and this work evolved into a specialization that focused on giftedness, creativity, and talent development. The two theories at the bottom of Figure 1 emerged in later years and all four theories, taken collectively, subsequently became the foundation for the Schoolwide Enrichment Model (SEM; Renzulli & Reis, 1985, 1997, 2014). The SEM is a school organization plan that represents an attempt to apply these four theories to total school improvement, both in terms of school achievement and students' creative productivity. The major goal of the SEM is to offer opportunities, resources, and encouragement to any and all students that might be overlooked through traditional cut-off score approaches to determine giftedness. It also recommends strategies for infusing more enrichment experiences into the ubiquitous standards driven curriculum that prevents many students from experiencing the enjoyment and engagement in learning that should be a hallmark of what effective schooling should be all about.

The realization that the "brand' of learning involved in our approach to total school enrichment programs requires quick and easy access to resources for making curricular modifications to enrich the curriculum and personalized learning. The most recent reiteration of our work is a technology-based program that provides an individual strength-based profile for each student and a database that contains thousands of enrichment resources that are correlated with student profiles. These theories and the context for their development will be discussed in the sections that follow.

Conceptions of Giftedness

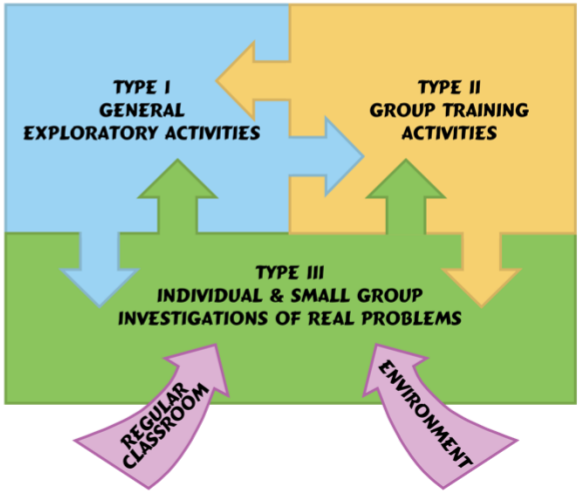
The Three-Ring Conception of Giftedness



Fully Functioning Self-Actualized Individual

A Focus on Creative Productivity

The Enrichment Triad Model



Leadership in a Changing World

Executive Functions

- Action Orientations ☑
- Social Interactions ☑
- Altruistic Leadership ☑
- Realistic Self-Assessment ☑
- Awareness of Needs of Others ☑

The Development of Social Capital

Operation Houndstooth

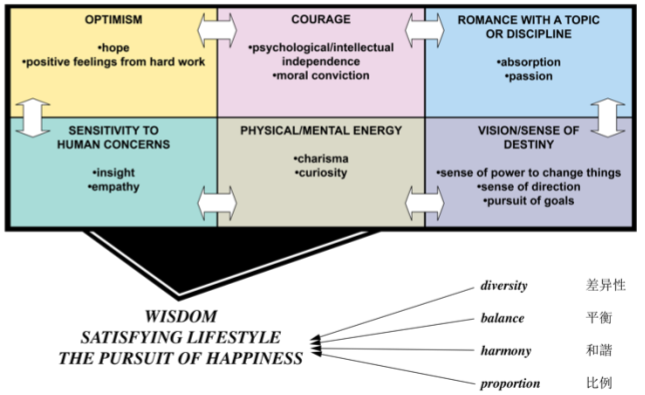


Figure 1. Theories underlying the development of creative/productive giftedness.

There is a good deal of interaction between and among the four theories in Figure 1 and I am certain that more work needs to be done on strategies for implementing practical applications of these ideas. I conclude the chapter with a brief description of some current work and the direction that future theory development and research might take.

The Enrichment Triad Model and The Three Ring Conception of Giftedness

On October 4, 1957, the Soviet Union successfully launched Sputnik 1, the world's first artificial satellite. America's reaction to this historic event was especially impactful on the education establishment and the need to better prepare our students at all levels to improve science education so that our nation could compete with the Russians. This event is probably what "kick-started" what was subsequently the beginning of my career in gifted education and talent development.

My superintendent of schools approached me with a request to develop an after-school science program for our "gifted" students; at that time the standard definition of giftedness was an IQ of 130 or higher. I was provided with a list of these students and began a frantic search for anything I could find on science curriculum for the gifted. Despite my best efforts, there was very little in the literature on recommended curriculum, and I did not find any material focused on Science Curriculum for the Gifted. This lack of prescribed curriculum was fortunate because if such material was available, I would have undoubtedly continued to teach in a didactic and prescriptive manner. I did, however, come across a book by F. Paul Brandwein entitled *The Gifted Student as Future Scientist* (Brandwein, 1955). As a teacher at Forest Hills High School in New York City, Dr. Branden translated theory into practice as he experimented with eyes-on, hands-on, brains-on, minds-on techniques in science. At that time, he had produced more Westinghouse Science Talent Search winners than any other person in the country.

When I read Brandwein's work, I became acutely aware of his forward-thinking ideas about education and how an inductive, investigative approach to learning differed from a didactic, prescriptive approach, which at the time (and in some cases continues) to be the predominant ways that teachers were trained. His ideas offered me, as a novice teacher, a hands-on investigative approach with all the necessary tools, materials, instructions, rocks, minerals, fossils, chemicals, beakers, plastic tubing, measuring devices, etc. to tum a traditional classroom into a scientific laboratory. The laboratory atmosphere that Dr. Brandwein advocated became the basis for my gifted program and from that time forward I knew that the "canned" lessons I was using in my regular science class curriculum were exactly opposite from the kind of teaching that inspires young minds. My goal became to encourage my students to think, feel, and do like professional scientists, even if at a more junior level from adult scientists; this approach became what in later years what I described as the Type III Enrichment component of the Enrichment Triad Model. This component focuses on individual and small group investigations of real problems, which are characterized by the following four criteria:

1. Personalization of Interest
2. Use of Authentic Investigative Methodology
3. No Existing Solution or “Right” Answer
4. Designed to Have an Impact on an Audience Other Than or in Addition to the Teacher.

These criteria resulted from my reading of Brandwein’s work as well as the influences of my fascination with biography and interviews with prominent people that will be discussed below. Again, I remind the reader that the two theories being discussed emerged simultaneously, and over a long period of time. And the two theories are intended to interact with one another to address the questions of: Who are they? and What can we do to develop creative/productive giftedness in young people?

Type I Enrichment (General Exploratory Experiences) and Type II Enrichment (Group Training Activities in areas such as thinking skills, creativity, learning-how-to-learn skills, and the effective use of technology) emerged logically from a need to address the second question above. How do we develop interest in students? And what kinds of creative and investigative skills and resources do they need to follow up on interests in a reasonably professional manner? I also recommended that these two types of general enrichment be made available to all students. The need to deliver effective Type II Enrichment, and especially the skills necessary to carry out authentic investigative methodology, led me to what became my lifelong search for “How-To” books across all areas of knowledge; and in recent years, the meta-cognitive skills in technology that help young people become efficient finders and users of professional investigative skills from the Internet. Even before Triad and Three Ring “went to press,” I was teaching in a way that was decidedly different from prescribed curricular units and stipulated lesson plans. And I developed much better relations with my students by encouraging them to experience the experimental nature of science as they selected topics in their own areas of interest, hypothesized, conducted experiments, and submitted their work to science fair competitions. These types of experiences and the four criteria listed above make Type III Enrichment different from today’s popular focus on project-based learning.

These early teaching experiences also influenced what later became the Three Ring Conception of Giftedness depicted in the upper left corner of Figure 1. Although the superintendent’s charge was to establish a gifted science program for 130 IQ students, I quickly realized that several students in my regular science classes had “the right stuff” to benefit from the special program, so I quietly started sneaking them into the special class for high-IQ students. And in many cases, it turned out that the motivation, creativity, and special interests in various areas of science of these below-the-IQ-cut-off-score-students produced as good or better outcomes as the high IQ students. I also started adapting my regular science classes to this “brand” of teaching and found that these classes became more exciting when they went beyond traditional teaching based on unit plans, lesson plans, and whatever was prescribed in science textbooks. This experience produced modifications in my thinking that will be discussed later in the section on the Schoolwide Enrichment Model (Renzulli & Reis, 2014).

In later years, when I began to pursue graduate degrees in educational psychology, my early intuitive decisions about who is best served through special opportunities led me to research studies that supported the direction I was taking. Although the influence of intelligence, as traditionally measured, quite obviously varies with domain-specific areas of achievement, many researchers have found that creative accomplishment is not necessarily a function of measured intelligence (Munday & Davis, 1974). In a review of several early research studies dealing with the relationship between academic aptitude tests and professional achievement (or what I later defined as creative/productive giftedness), Wallach (1976) had concluded that academic assessments are best at predicting the results a student will obtain on other academic assessments. Wallach also pointed out that academic test scores at the upper ranges—precisely the score levels that are most often used for selecting persons for entrance into special programs, do not necessarily reflect the potential for creative/productive accomplishment.

I reviewed numerous research studies that also supported Wallach's finding that there is little relationship between test scores and school grades, on the one hand, and real-world accomplishments, on the ocher (i.e., Bloom 1963; Harmon 1963; Hudson 1960; Mednick 1963; Wallach & Wing 1969). In fact, another study dealing with the prediction of various dimensions of achievement among college students by Holland and Astin (1962) found that getting good grades in college had little connection with more remote and more socially relevant kinds of achievement.

These early personal experiences and the research I reviewed undoubtedly led to my description of the one component in the Three Ring Conception of Giftedness as "above average but not necessarily superior ability." Many people still interpret this statement to mean measured academic ability only and frequently ask for a cut-off score or percentile. In the original article on the Three Ring Conception (Renzulli, 1978), I pointed out that there are many other domain-specific areas of human performance that cannot be measured by traditional achievement or cognitive ability tests. A more recent study by Arnold (1995) provides additional support for the need to examine other predictors of creative/productive giftedness. She followed high school valedictorians fourteen years after graduating from high school, finding that although they work hard and follow rules, they are not the creators or transformative leaders.

The creativity component of the Three Ring Conception had its origin when I was a master's degree student in the in the early 1960s. I read a book by Getzels and Jackson (1962) entitled *Creativity and Intelligence: Explorations With Gifted Students* and ran across an article entitled *The Minnesota Test of Creativity Thinking* (Goldman, 1965), later to become the famous *Torrance Tests of Creative Thinking* (TTCT, Torrance, 1966). I was fascinated by this concept and began reading everything I could find on the topic. One article that prompted action on my part was based on Guilford's well know presidential address at the American Psychological Association (Guilford, 1950) in which he expressed concern and dismay about how little attention psychologists and educators had paid to the study of creativity. Armed with copies of the TTCT, which Dr. Torrance personally taught me and my graduate students how to score, I embarked on research (Renzulli & Callahan, 1974; Renzulli, Owen, & Callahan, 1974) that resulted in

the development of a five-volume series of creativity training activities entitled *New Directions in Creativity* (Renzulli, 1972a, 1972b; Renzulli & Callahan, 1972; Renzulli, Renzulli, Ford, & Smith, 1976a, 1976b) and conducted a series of studies to determine the effectiveness of these activities on improving TTCT scores in young people (Callahan, & Renzulli, 1974). These experiences, taken collectively, resulted in the inclusion of creativity in the Three Ring Conception.

The task commitment component in the Three Ring Conception is the result of a variety of experiences going back to childhood interests. I loved reading the biographies of famous people and, because of experiences in my own young life, I found that focus and hard work were necessary to achieve desired results. And in 1968 I served as a research consultant to the White House Task Force on Education of the Gifted, a project that subsequently resulted in the publication of the Marland Report (1972). One of my responsibilities on the task force was to interview well known people across a variety of disciplines.[1] The one thing that resulted from these interviews was that highly focused motivation was attributed to everyone's success. I didn't want this concept to be confused with general motivation (or what is now popularly being called "grit"). There must be a focus on a specific task, challenge, or enterprise as the outcome of creative/productive enterprises and therefore I came up with the title "Task Commitment" for the third ring in the Three Ring Conception. As I have pointed out in numerous publications, no single ring makes giftedness, or what I prefer to call gifted behaviors. It is all three rings working together that produce the ideas, actions, and finding and using the necessary know-how to develop and apply gifted behaviors to achieve a desired goal.

Curriculum Compacting

Another event from my early experience as a math teacher resulted in what was later to become a major component of my work. Realizing that many of my more able math students were bored in my heterogeneously grouped math classes led me to a teaching strategy that was eventually formalized into a process called Curriculum Compacting. I allowed any interested student to do their seat work by working from the bottom of the worksheet page where the most difficult problems were usually found. They checked their answers at my desk; if all answers were correct, they were given the opportunity to do something else for the remainder of the math class. I quickly realized that just giving student more advanced work sheets would eventually become counter-productive, so I began searching for some high-interest math activities. Unbeknownst to me at the time was that this experience would begin what has been a lifelong search for high interest and high engagement enrichment learning activities.

Research was later conducted on the process (Reis, Westberg, Kulikowich, & Purcell, 1998), now one of the most widely used processes for modifying the prescribed curricular for advanced level students. We also developed a teaching strategy called curricular enrichment infusion (Renzulli & Waicunas, 2016), which provides teachers

[1] Privacy restrictions prevented the publication of the names of these individuals.

with a systematic process for examining curricular topics and brainstorming ways in which enrichment experiences could be blended into prescribed curricular material.

The Multiple Menu Model for Developing Differentiated Curriculum

One final aspect related to the two models discussed above is a model developed for a course on curriculum development for the gifted. The literature on this topic focused mainly on advanced content and thinking skills but often does not have guidance for blending in direction for the application of content and thinking skills that develops creative productivity. I believe that application should be the hallmark of any curriculum for high potential students, so I developed a plan that blends content and thinking skill processes with ways that students can use these skills to develop creative and investigative products within the framework of any curricular topic (Renzulli, 1988). A unique aspect of this model is a menu called Artistic Modification. Guidelines for this menu invite teachers to personalize lessons by sharing anecdotes, observations, hobbies, or personal experiences and beliefs about an event, topic, or concept covered in mainly knowledge-based curriculum. As such, it can be used with any instructional strategy and during any point in a prescribed instructional sequence. Personalizing lessons through artistic modification invigorates teachers, demonstrates the relevance of topics to real life situations, and thereby generates interest and excitement among students. Most of all, it gives teachers the license to be playful with any curriculum they are developing.

Operation Houndstooth and Executive Functions

The original graphic for the Three Ring Conception was embedded in a houndstooth background because people frequently asked me where the three rings came from. The black and white houndstooth graphic was intended to convey the interaction between personality and environment, but it wasn't until several years later that I began investigation of this sub-theory. And, as is the case with most starting points, my first motivation came from the activities I observed visiting a Triad-based program in Connecticut, one of the first that had been implemented in the state. A fifth-grade girl observed a primary age student being bullied. Under the direction and encouragement of her gifted program teacher, she began a very passionate year-long Type III Enrichment project to address and bring about changes to this bullying situation by showing videos about bullying and developing simulations in which students could participate in role playing in various hypothetical bullying situations. Wow, I thought! If we truly believe that many high potential young people will eventually assume leadership positions in their chosen career areas, shouldn't we be encouraging them to use their talents to make the world a better place (Renzulli, 2002, 2008)?

Although examining the personality and environmental factors underlying the Three Ring Conception had been on the back burner of my mind for a long time, I reached a point where a scientific examination of these background components was necessary for us to understand more fully the sources of gifted behaviors and more importantly, the ways in which people transform their gifted assets into constructively positive action. My decision was also influenced by the new work on positive

psychology that was being done by Martin Seligman and Mihaly Csikszentmihalyi (2000). This movement focuses psychology on enhancing what is good in addition to fixing what is maladaptive behavior. The goal of positive psychology is to create a science of human strengths that will help us understand and learn how to foster socially constructive virtues in young people. Financial and intellectual capital are the well-known forces that drive the economy and result in generating highly valued material assets, wealth production, and professional advancement—all important goals in a capitalistic economic system. Social capital, on the other hand, is a set of intangible assets that address the collective needs and problems of other individuals and our communities at large. I knew that work in this area would deal with less discreet variables than those things that are measured by standardized tests. At the same time, however, I believed that if gifted education is helping to produce people who will make important changes in the world my interest turned to addressing another series of questions that should be important in gifted education. What causes some people to mobilize their interpersonal, political, ethical, and moral realms of being in such ways that they place human concerns and the common good above materialism, ego enhancement, and self-indulgence? How can we understand the science of human strengths that brings about the remarkable contributions of people like Nelson Mandela, Rachel Carson, Mother Theresa, and even the young girl in the bullying example above? How can we expand the mission of gifted education to include a non-cognitive focus on opportunities, resources, and encouragement to develop talents that are directed toward making the lives of people better?

A confirmatory factor analysis produced an instrument that led to the six factors represented in the lower right hand of Figure 1. Research by Sytsma (2003) and subsequent studies (Renzulli, Koehler, & Fogarty, 2006; Renzulli, Sands, & Heilbronnor, 2011) concluded that Houndstooth oriented activities led to the constructive development of gifted behaviors, and the internalization of the co-cognitive factors. It also showed that students became creative producers at the highest level of the Houndstooth Intervention Theory by internalizing a combination of the six co-cognitive traits.

It is my hope that other researchers in the field will use our instrument (and/or other measures) to conduct additional intervention studies about the Houndstooth factors. We very much need to examine the best ways to encourage our most able young people to internalize the factors identified in Operation Houndstooth and to internalize these values as they pursue their adulthood endeavors.

The Executive Functions theory in the lower left comer of Figure 1 is a spin-off from the work done on Operation Houndstooth and it also relates to the Task Commitment concept in the Three Ring Conception of Giftedness. In spite of the work in Three Ring, Triad, and Houndstooth, I still felt that “something was missing” from attempts to explain the motivation and skills that were observed in students’ work on high quality Type III Enrichment projects. A comprehensive review of both the psychological and business leadership literature led me to countless articles on executive functions. Especially influential was Sternberg’s article on successful intelligence and the concept of “tacit knowledge” (Sternberg, 1999). A study was

conducted using an instrument entitled the *Scale for Rating the Executive Functions of Young People* (Renzulli & Hartman, 1971) and this study resulted in the identification of the five factors listed in the lower left section of Figure 1. An ongoing search was and continues to be pursued for materials and teaching strategies to develop the skills in young people related to these five factors. Also influential in the development of these theories was the groundbreaking work of Howard Gardner (1983), who cast a new light on how we look at the entire concept of intelligence.

The Schoolwide Enrichment Model (SEM)

As indicated above, the development of my work usually has its origins in practical classroom settings. One of the things observed in programs using the Three Ring Conception and the Enrichment Triad Model was that several teachers of the gifted were sharing their materials and teaching strategies with regular classroom teachers. And in more recent years, national reports dealing with 21st Century skills (National Research Council of the National Academies, 2008, 2010) strongly recommended that higher level thinking, once considered to be the “property” of gifted programs, should be made available to all students. Over the years a series of studies summarized by Sally Reis and I (Reis & Renzulli, 2003), a study by Kim (2016) and a study by three Durch economists (Booij, Haan, & Plug, 2016) provided favorable results regarding the effectiveness of the SEM and the underlying theories that led to this talent development model.

The Renzulli Learning System

One of the things we recognized through extensive involvement with schools and districts using the SEM was that the “brand” of learning recommended placed unusual demands on teachers and they simply don’t have the time to find the kinds of enrichment-based resources necessary for effective implementation of the model. The Renzulli Learning System (RLS) developed at the University of Connecticut (Renzulli & Reis, 2007) is a research-based enrichment program (Field, 2009) that uses a computer-generated assessment of student strengths in the areas of academic achievement, interests, learning styles, and preferred modes of expression. This first step produces an electronic profile for each individual student. The Profiler has been purposefully designed to personalize a part of every student’s school experience.

The second step is an enrichment differentiation search engine then scans through approximately 50,000 resources and sends students to websites that are based on each student’s individual profile. All resources in our 14 categorical databases are high engagement (“hands-on”) activities that have been multiply classified by subject matter experts according to topic, age/grade appropriateness, curriculum standards, and that are safely suitable for use by young people. Teachers can use the same system to search the databases for enrichment activities that they would like to infuse into their regular curriculum. Research [Field] shows that the program increases achievement and promotes the three main goals of the SEM—Enjoyment, Engagement, and Enthusiasm for Learning.

The Evolution and Destination

I have always believed that theories and research in an applied field have limited value if they cannot be translated into practical applications that have an impact on the work of teachers, administrators, students, and policy makers. Our widely used *Scales for Rating the Behavioral Characteristics of Superior Students* (Renzulli & Hartman, 1971), forms such as the *Curriculum Compactor* and the *Type III Management Plan*, the 250 activities in the *New Directions in Creativity* program, and our recently developed *Renzulli Learning System* are just a few examples of my concern for practical applications. Theories, in and of themselves, cannot be researched. It is the practices that are derivatives of theories that yield data about the value of any given theory. It is for this reason that, over the years, a good deal of my work has been devoted to developing instruments, teaching materials and strategies, and developing tools in technology that provide useful resources for practices carried out in schools and classrooms. The most important consideration guiding my work over the years has been that the theories and research discussed here have had a practical impact on identification, educational practices, and policies that have been adopted in states, school districts, and numerous countries around the world.

Three contributions are special sources of satisfaction from the more than half century of work devoted to this field. First, bringing the concept of creative-productive giftedness (as distinct from lesson-learning giftedness) to its present level of acceptance in the field has been the most important theoretical contribution that my colleagues and I have made over the years. This has not been easy because evaluating creative productivity, social action projects, and executive function skills is not as easy as reporting gains on achievement tests, but many people believe that applicable accomplishments rather than test score gains are what make gifted contributions to societies, economies, and cultures. And to me, great accomplishments range from Nobel Prize winners to the fifth-grade girl mentioned above who started a highly effective anti-bullying program to help one small boy in her school.

Second, extending the pedagogy of gifted education and school wide enrichment to more students than those who achieved an arbitrarily determined cut-off score is also a source of pride. Many young people, especially students from minority and low-income groups, have the potential to develop gifted behaviors if we can make greater strides to close the *opportunity gap* that exists from day care to college admission. These populations are the fastest growing talent pools in our nation and underrepresentation is the greatest challenge facing our field. I hope we can address it because creative human capital is the world's most renewable resource.

Third is the large number of outstanding graduate students that have studied with my colleagues and me, as well as the summer Confratute program at the University of Connecticut that began in 1978 and has trained more than 35,000 teachers and administrators in the pedagogy that develops creative and productive giftedness. This pedagogy differs from traditional lesson learning by focusing on investigative and creative skills and the *application* of knowledge and thinking skills to the development of a product, performance, or other modes of expression that are intended to have an

impact on one or more targeted audiences. Again, it is the practical application of this pedagogy in the form of professional development for teachers that has helped to change schools and classrooms in what I believe is a favorable direction.

There are two words that have guided the destination of my work over the years. The first word is focus. I have not attempted to be an expert on all the topics in my field and no week goes by when I am not referring requests for information to people in the field with specialties that I do not have. Rather, I have focused my research and practical derivatives on the "big ideas" related to the theories presented in this chapter and the ways in which many of the practices in gifted education can have an impact on general education. Related to focus is what I sometimes call the concept of slow growth. None of our work on the SEM happened overnight. One idea takes time to develop, field test, carry out research, gather numerous examples of best practices, and sell the idea to an always-hesitant-to-change audience. It also requires spending a great deal of time in schools because teachers, not researchers, bloggers, or platform orators, know best what will work in schools and classrooms.

I have resisted getting into prickly squabbles with critics who have concerns about my work. There are and always will be critics, especially for work that has gained a good deal of acceptance and popularity. I am guided by the only quote pasted at the top if my computer by Winston Churchill who said, *"If I stop to throw stones at every dog that barks at me, I will never reach my destination."*

And my destination relates to the second word, which is impact. I do not take issue with the endless flow of research studies, commentary, journalism, and oration about the field of gifted education, but I do consider the value of these contributions in terms of the practical impact they might have on the field. Practical impact in an applied field is everything.

If I were to add a third word to my destination in this process it would be the last word from a cartoon that I have framed on my desk. It shows an ant trying to push a large boulder up a hill. The caption says, "I'll quit when is stops being *fun*." I have thoroughly enjoyed the work and am proud of the many graduate students with whom I have worked and who have gone on to become experts in their own areas of specializations. I am also proud of the many creative and dedicated teachers and administrators from around the world from who I have received countless practical ideas for advancing my work and the many scholars and researchers who participated in various projects during the 22 years when I served as the director of The National Research Center on the Gifted and Talented. I am indebted beyond words to Robert Sternberg and Howard Gardner (I call them my Body Guards), two of the best-known cognitive psychologists in the world, whose support of my work over the years has been a source of strength, especially when critics took issue with my argument against only using IQ scores to determine giftedness and only providing advanced students with accelerated curriculum experiences that focused on the traditional acquisition, storage, and retrieval of information. I am also beholden to Sally Reis, who has contributed to the theoretical and research aspects from the very start; and without whose remarkable teacher's craft knowledge and understanding of what works in schools and classrooms,

none of this work would have become so widespread. If I were to summarize in a few words how my career evolved they would surely include an insatiable curiosity to find out about how things work and how we can improve and replicate them in practical ways to make a difference for learners. Also included would be the ,willingness to put in the time and energy to investigate big ideas, and the ability to surround myself with creative and energetic people who believe as I do *that schools should be places for talent development*. My only regret is that I don't have another lifetime to work on the several concepts and intriguing ideas and questions that keep piling up in the *Big Idea File* on my computer.

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