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What is [or Should be] the Pedagogy of Gifted Education Programs

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Pedagogy is another word for education, the profession and science of teaching. Pedagogy comes from the Greek paidagōgia, (child or student) plus from paidagōgos (teacher or leader). Pedagogy refers to the teaching profession as the science of education.

Many people view education systems around the world as places for knowledge acquisition and skill training. This approach led to a highly controlled curriculum and a prescribed and presented pedagogy that was based mainly on the acquisition, memorization, and repetition of information. The continued use of this pedagogy minimizes the kinds of 20th Century thinking skills that promote innovation and creative productivity. Many of today's progressive educational leaders, employers, and the corporate and business community are expressing their lowest level of confidence in public education in history. And many teachers also experience various levels and types of frustration because excessive control limits their freedom to teach in more creative and engaging ways.

Einstein once said that the way something is to be taught can best be described as the difference between lightning and a lightning bug. Although educators have argued for years the pros and cons of gifted program organizational arrangements (e.g., pull out, push in, full time, magnet schools, separate schools), little attention has been devoted to the pedagogy of gifted education – what should actually be going on in any organizational arrangement. Before discussing the pedagogy that I have advocated for almost half a century, I will begin with two issues that have guided my work.

What is the purpose of gifted education?

This frequently asked question can no doubt be debated, but my standard answer has always been: “to increase the reservoir of creative and productive young people who will make innovative contributions to the arts, sciences, and all other areas of human knowledge and productivity and that these contributions will be guided toward making the world a better place for all people.” In this regard, I have made a distinction between what I call lesson-learning giftedness and creative productive giftedness. We all know what lesson-learning giftedness is all about – learn the prescribed material, be able to demonstrate your learning by taking a test or through oral, written, artistic, dramatic, or some other form of expression.

Creative-productive giftedness, on the other hand, is defined as those aspects of human activity and involvement where a premium is placed on the development of original ideas, material, and products that are purposefully designed to have an impact on one or more target audiences. Learning situations that are designed to promote creative-productive giftedness emphasize the *use and application* of information (content) and thinking skills in an integrated, inductive, and real-problem-oriented manner. The role of the student is transformed from that of a learner of prescribed lessons to one in which she or he uses the *modus operandi* of a firsthand inquirer. This approach is quite different from the development of lesson-learning giftedness that tends to emphasize deductive learning, structured curriculum, and the acquisition, storage, and retrieval of information.

What makes a problem real?

Creative-productive giftedness is simply putting one's abilities to work on real problems and areas of study that have personal relevance to the student and that can be escalated to appropriately challenging levels of investigative activity. The roles that both students and teachers should play in the pursuit of these problems have been described elsewhere (Renzulli, 1977, 1982) and have been embraced in general education under the concepts such as authentic learning, experiential learning, and immersive learning. The four characteristics that define what I have described as real problems are:

- Personalization of interest on the part of the student(s);
- Use of authentic methodology (research, investigative, and creative skills);
- No single predetermined correct answer; and,
- Designed to have an impact on one or more target audiences.

The history of human culture can be charted to a large extent by the creative and productive contributions of the world's most gifted and talented individuals. What causes some people to use their intellectual, motivational, and creative assets in such a way that it leads to outstanding manifestations of creative productivity, while others with similar or perhaps even greater assets fail to achieve at expected levels of accomplishment? And why is creative-productive giftedness important enough for us to question the "tidy" and relatively easy test-score-approach approach that traditionally has been used to select students for special programs and services? Why do some people want to rock the boat by challenging a conception of giftedness that can be numerically defined by simply giving a test? The answers to these questions are simple and yet very compelling. A review of the research literature (Renzulli, 1982; Renzulli & Delcourt, 1986) tells us that there is much more to identifying human potential than the abilities revealed on traditional tests of intelligence, aptitude, and achievement. Furthermore, history tells us it has been the creative and productive people of the world, the producers rather than consumers of knowledge in all areas of human endeavor who have become recognized as "truly gifted" individuals. History does not remember persons who merely scored well on IQ tests or those who learned their lessons well. The sheer amount of folk wisdom, portrayals in popular media, and biographical and anecdotal accounts about creativity and giftedness are nothing short of mindboggling. Some clarity, however, can be found by carefully examining the creativity literature.

Creativity researchers, for instance, tend to agree that creativity is the combination of originality and task appropriateness as defined in a particular context (Plucker et al., 2004). Moreover, researchers have differentiated among different levels of creativity, ranging from the more subjective (mini-c) to the everyday (little-c) experiences of creativity to professional (Pro-c) and finally, eminent (Big-C) levels of creativity (Beghetto & Kaufman, 2007; Kaufman & Beghetto, 2009). Along these same lines, creativity researchers have also argued that although creativity can be experienced across multiple domains at lower levels of performance, high levels of creative production tend to be domain specific (Kaufman et al., 2010).

Even with these insights from creativity research, we are still unable to answer the fundamental question of how and why some individuals develop their talents and perform at superior levels in analytic, investigative, and creative ways. While it would be tempting to present a yet another "combination-of-ingredients theory" (based on the characteristics of giftedness) to explain why some people achieve at high levels, the learning theory described in detail in this article addresses how three interrelated levels of knowledge fit into the structure and quality of one's formal learning experiences. These levels are Received Knowledge, Analyzed Knowledge, and Applied and Created Knowledge (Renzulli, 2016), an overview of which can be found in Appendix A.

The pedagogy discussed below is based on the role that knowledge plays in developing an investigative mindset, high levels of creative productivity, and how the integrated use of three levels of knowledge contribute to the major goal of gifted education mentioned above. This work is purposefully different from theories about the characteristics of giftedness because it deals with the organization and structure of knowledge; and it has implications for both curriculum development and teaching strategies that can be implemented in programs for the development of gifted behaviors in

young peoples. These services represent a central focus of the literature in our field and what we do in programs that serve high potential students.

A brief overview of learning theories

The second issue related to the pedagogy that will be presented below is the need to understand the continuum of learning theories that represent all work that goes on in schools. All learning, from diapers to doctoral work and beyond, exists on a continuum ranging from deductive, didactic, and prescriptive to inductive, investigative, and inquiry oriented. This continuum is presented in Figure 1, and it is important to point out that both ends of the continuum are important. But if we want to develop the kinds of skills to produce the people represented in the lower right corner of Figure 1, we must give major attention to the pedagogy represented on the right-hand side of the figure. In a certain sense, this continuum reflects the ongoing age-old distinction between acceleration and enrichment that exists in our field. If acceleration only means covering more work faster and at a higher level of depth and complexity; but does not have built in opportunities for creative and productive applications, than the pedagogy continues to be deductive, didactic, and prescriptive. Arnold’s (1995) fourteen-year follow-up study of high school valedictorians [11,000 pages of Interview data from 81 high school valedictorians] resulted in the following conclusion:

They obey rules, work hard and like learning, but they're not the mold breakers. They work best within the system and aren't likely to change it. They're extremely well rounded and successful, personally and professionally, but they've never been devoted to a single area in which they put all their passion. That is not usually a recipe for eminence. The opportunities to become famous or change the world as an accountant, for example, are few and far between. Even though most are strong occupational achievers, the great majority of former high school valedictorians do not appear headed for the very top of adult achievement arenas. Valedictorians aren't likely to be the future's visionaries . . . they typically settle into the system instead of shaking it up (Arnold,1995, p. 278).

<p>Deductive Didactic & Prescriptive</p> <p>Knowledge Acquisition, Storage, and Retrieval. Predetermined Content</p>	<p>Pedagogy</p>	<p>Inductive, Investigative & Inquiry Oriented</p> <p>Knowledge Application, High Engagement, Motivation And Enjoyment. J-I-T Content</p>
<p>Basic Skill Acquisition Text Consumption</p>	<p>Outcomes</p>	<p>21st Century Thinking Skills Creative Productivity</p>
<p>Behaviorists</p> <ul style="list-style-type: none"> •Pavlov •Thorndike •Skinner 	<p>Major Theorists</p>	<p>Constructivists</p> <ul style="list-style-type: none"> •Pestalozzi, Torrance, •Montessori, Gardner, •Piaget & Bruner, •Dewey, Sternberg
<p>Increased Academic Achievement Higher Test Scores Technically Proficient Professional and Skilled Workers</p>	<p>National Goals</p>	<p>Inventors Creative Designers in Sciences, Arts, & Technology Innovative Leaders Entrepreneurs Writers People Who Make a Difference</p>

Figure 1: Continuum of learning theories.

Even the monumental work of Lewis Terman (1959) on identifying high IQ students raises questions about the characteristics necessary for long term success. In his 40 year follow up study of high IQ young people he reported information about often unrecognized conclusions of his work.

A detailed analysis was made of the 150 most successful and 150 least successful men among the gifted students in an attempt to identify some of the *non-intellectual factors* that affect success. Since the less successful subjects do not differ to any extent in intelligence as measured by tests, it is clear that notable achievement calls for a lot more than a higher order of intelligence.

The results [of the follow up study] indicated that personality factors are extremely important determinators of achievement. The four traits on which the [most and least successful groups] differed most widely *were persistence in the accomplishment of ends, integration toward goals, self-confidence, and freedom from inferiority feelings*. In the total picture the greatest contrast between the two groups in *all-round emotional and social adjustment, and in drive to achieve*. (Terman, 1959, pg. 148; italics not in the original).¹

These traits are obviously more difficult to measure or create norms for than the assessments derived from achievement or cognitive ability tests. If, however, they were considered by Terman to be major determinants of high creative productivity, shouldn't we look for additional ways to identify these traits in young people? And more importantly, shouldn't we consider the ways to develop these traits in *all* young people. I refer to the use of such traits as assessment *for* learning as opposed to assessment *of* learning (Renzulli, 2021). Examples of these traits include interests, preferred modes of learning and expressing oneself, and executive function skills. This is exactly the reason why we recommend two types of general enrichment for *all* students in our Schoolwide Enrichment Model (Renzulli & Reis, 2014).

Major dimensions of the recommended pedagogy of gifted education

Curriculum Compacting

The first dimension addresses a process that enables teachers to deal with high achieving students in the regular curriculum or any advanced or accelerated courses. This dimension consists of a series of techniques that are designed to (a) assess each students' mastery level of any regularly prescribed material, (b) adjust the pace and level of required material to accommodate variations in learning, and (c) provide enrichment and acceleration alternatives for students who have mastered, or can easily master, regular material at a more rapid pace. The first curriculum modification procedure is carried out, for individuals and for small groups of students working at approximately the same level, through a systematic process called curriculum compacting. This three-step process consists of defining the goals and outcomes of a particular unit of study, determining and documenting which students have already mastered most or all of a specified set of learning outcomes (or which students are capable of mastery at an accelerated pace), and providing replacement activities that are pursued during the time gained by compacting the regular curriculum. These options include content acceleration, self-selected individual or group research projects, peer teaching, and a variety of out-of-class or non-school activities. Research on curriculum compacting has shown that this process can easily be learned and implemented by teachers at all levels and that students using this process benefit academically and can use the time saved through this form of acceleration to pursue more creative and productive endeavors (Reis, et al., 1998).

A second procedure for making adjustments in regular curriculum on a more widespread basis is the examination of textbooks and workbooks in order to determine which parts can be economized upon through the "surgical" removal of excessive practice material. Based on the belief that "less is better" when it comes to promoting greater depth and complexity in learning, this process also includes replacement activities in the form of direct teaching of thinking skills and curriculum development options for high-end learning based on the Multiple Menu Model for Developing Differentiated Curriculum for the Gifted and Talented (Renzulli, 1988). This model for curriculum

¹ It is partially this research that resulted in having Task Commitment as one of the three major components in the Three Ring Conception of Giftedness (Renzulli, 1978).

differentiation focuses on using representative concepts, themes, patterns, organizing structures, and investigative methodologies to capture the essence of a topic both within traditional domains of knowledge and in interdisciplinary studies. In-depth learning also requires increasingly complex information that moves up the hierarchy of knowledge: from facts to principles, generalizations, and theories. These skills, plus the use of advanced-level knowledge, form the cognitive structures and problem-solving strategies that endure long after students have forgotten the factual material that is the focus of so much traditional learning. The surgical removal of repetitive practice material minimizes boredom and provides the time for experiences built around problem-based learning, the use of thematic and interdisciplinary units, and a host of other authentic learning experiences.

Enrichment learning and teaching using the Enrichment Triad Model

The driving force behind the development of the Enrichment Triad Model was the desire for students to acquire and engage in what I call The Three Es – Enjoyment, Engagement, and Enthusiasm For Learning. We all know from our own experiences that anything we enjoy doing leads to higher level of engagement, which, in turn leads to enthusiasm for learning. The major focus of the pedagogy recommended for developing gifted behaviors that lead to creative productivity in young people consists of three interrelated types of enrichment depicted in Figure 2.

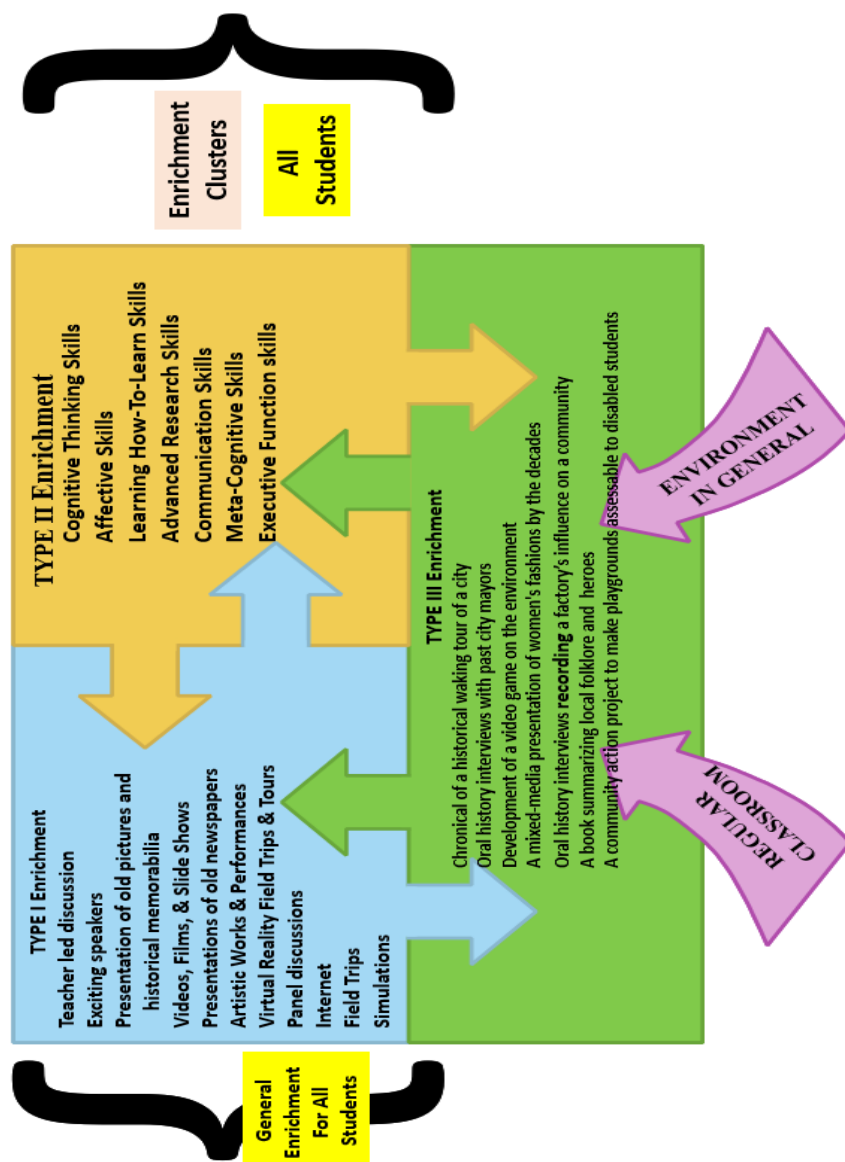


Figure 2: Enrichment Triad Model.

The Enrichment Triad Model is a systematic set of strategies designed to promote active engagement in learning on the parts of both teachers and students. In a certain sense, the approach strives to do everything the opposite from traditional prescriptive and didactic teaching. Four principles define this concept:

- Each learner is unique. Therefore, all learning experiences must take into account the abilities, interests, learning styles, and expression styles of the individual.
- Learning is more effective when students enjoy what they are doing. Therefore, learning experiences should be designed and assessed with as much concern for enjoyment as for other goals.
- Learning is more meaningful and enjoyable and promotes higher levels of engagement when content and process are learned within the context of a real problem, when students use authentic methods to address the problem, and when they want to have an impact on one or more self-selected audiences audience.
- This kind of enrichment learning and teaching focuses on enhancing knowledge and acquiring thinking skills, but the major focus is on *applications* of knowledge and skills to the types of real problems described above.

Many enrichment learning and teaching opportunities are based on the Enrichment Triad Model (Renzulli 1977), which is one of the most widely used models for enrichment in the United States and numerous nations around the world. The Triad Model was designed to encourage creative productivity on the part of young people by (a) exposing them to various topics, areas of interest, and fields of study; (b) to developing advanced thinking skill processes and methodology training to self-selected areas of interest such as the types described in Bloom's *Taxonomy of Educational Objectives* (Bloom, 1956); and (c) providing the opportunities, resources, and encouragement to *apply* knowledge and thinking skills to an area(s) in which a young person would like to produce an original product. Accordingly, three types of enrichment are included in the Enrichment Triad Model.

Type I enrichment: General exploratory experiences

Type I enrichment is designed to expose students to a wide variety of disciplines, topics, occupations, hobbies, persons, places, and events that would not ordinarily be covered in the regular curriculum or could further enhance interest and engagement in regular curriculum topics. In schools that use this model, an enrichment team consisting of parents, teachers, and students often organizes and plans Type I experiences by contacting speakers; by arranging minicourses, demonstrations, or performances; or by ordering and distributing films, slides, videotape, or other print or non-print media. The Internet and other search engine capabilities have now made it possible for teachers and young people to access exciting Type I information and experiences from the world's treasure trove of knowledge. Fiction, non-fiction, how-to books, films, videos, newspapers, and magazines from bygone eras are within reach of young people even in the most remote areas of the Earth. And virtual reality has enabled them to take a walk on the Great Wall of China, charge up the beach at the Normandy Invasion, dissect and preserve their own mummy, tour presidential libraries, and visit the most fascinating historical sites and art museums in the world. We sometimes describe Type I Enrichment as "the hook" that captures a student's interest and may lead to various kinds of follow up.

Planning Type I experiences is an excellent way to give teachers the license to take a more active part in curriculum development. The example in Figure 3 points out how a process called Curricular Enrichment Infusion (Renzulli & Waicunas, 2018) enabled a group of teachers working in small groups to come up with 22 Type I ideas in ten minutes to make the teaching of U. S. states and capitols more interesting. This same topic-focused brainstorming process is also a way of promoting more engagement and enjoyment among students.

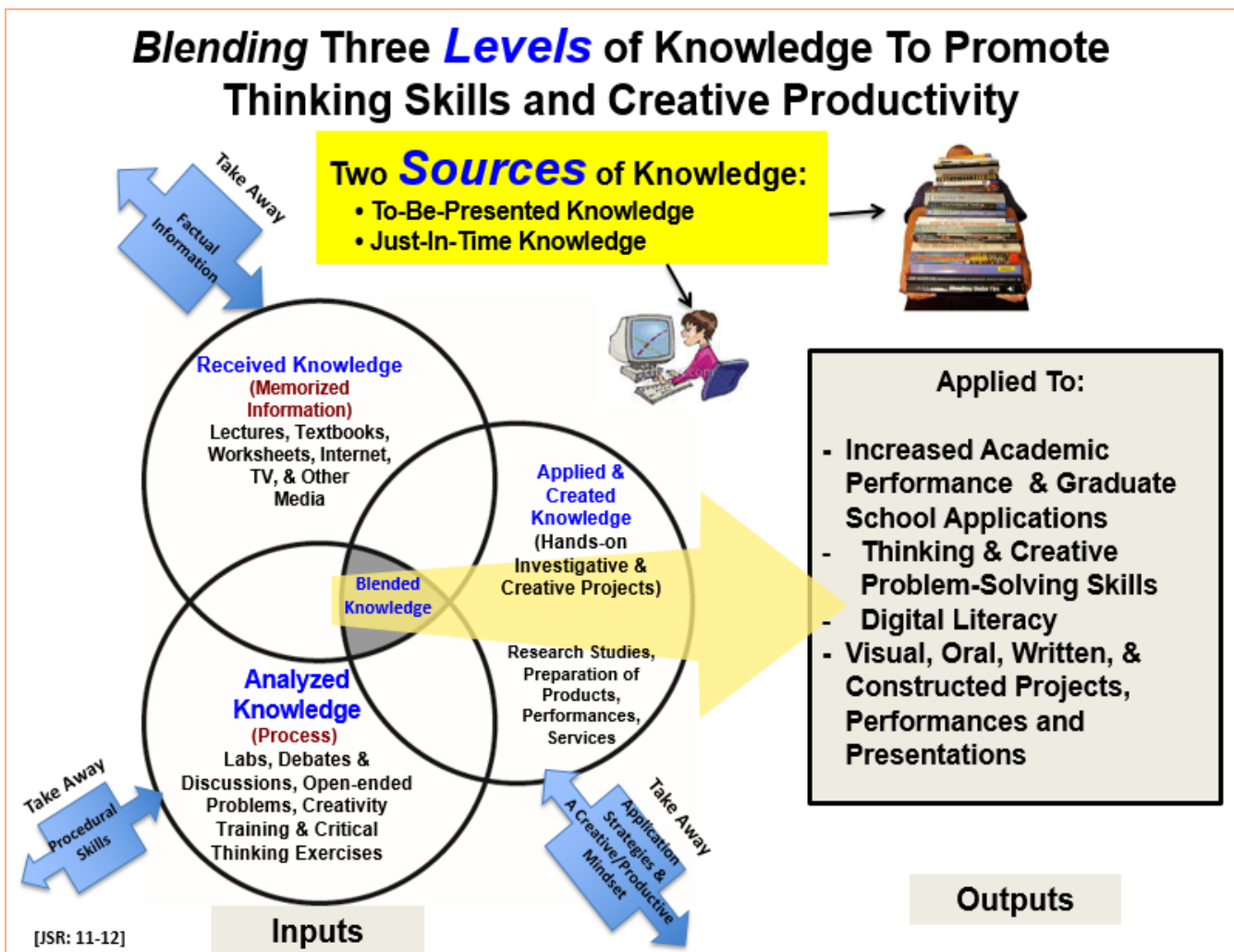


Figure 3: Curricular Enrichment Infusion.

It is recommended that members of the enrichment team search the commercial and research literature to help build a collection of materials for activities that can be used for this type of enrichment. These materials vary in quality, so it is further recommended that the materials be “field tested” to determine if they deliver the types of results desired. We also recommend that each school, working with the librarian, create a section of the library for what we call How-To books. These books exist in all areas of knowledge and, like cookbooks, they provide the know-how in very practical ways of the skills necessary for investigating and producing the types of products that will be described in the section that follows. They are excellent resources for teaching young people how practicing professionals go about compiling data and information, needed equipment, and actual experience in planning, investigating, and creating and producing in their chosen field of knowledge.

Type III enrichment: Individual and small group investigations of real problems

Type III enrichment occurs when students become interested in pursuing a self-selected area and are willing to commit the time necessary for advanced content acquisition and process training in which they assume the role of a firsthand inquirer. I have often described Type III Enrichment as “the young person thinking, feeling, and doing like the practicing professional. even if at a more junior level than adult writers, scientists, film makers and others who make investigative and creative contributions to their fields.



Figure 4: Taxonomy of cognitive and affective processes.

The goals of Type III enrichment include:

- providing opportunities for applying interests, knowledge, creative ideas, and task commitment to a self-selected problem or area of study.
- acquiring advanced level understanding of the knowledge (content) and methodology (process) that are used within particular disciplines, artistic area of expression, and interdisciplinary studies.
- developing authentic products that are primarily directed toward bringing about a desired impact upon a specified audience.
- developing self-directed learning skills in the areas of planning, organization, resource utilization, time management, decision making, and self-evaluation.
- developing task commitment, self-confidence, and feelings of creative accomplishment.

Several examples of Type III products completed by middle school students are provided in Table 1.

Table 1: Examples of Type III Products.

Literary	(Scientific, con't.)
Literary Magazine	Establishment of a nature walk
School Newspaper	Acid rain study
Collections of local folklore	Prolong experimentation involving manipulation of variables
Puppeteers	Science article submitted to a national magazine
Series of books	Science column in newspaper
Greeting cards with original poetry	
Comic book series	
Calendar book	Mathematical
Children's page in a city newspaper	Editor of computer magazine for school
	Contributor of math puzzles, games, quizzes for children's sections of newspaper
Historical	Math consultant for a school
Historical monologue	Organizer of math tutoring service
Historical walking tour of a city	Graphics for film or videos
Slide/tape presentation of historical research	Programming for computers
Historical board game	
Investigation of local elections	Media
Film on historical topic	Children's radio show
Archeological dig	Children's television show
Anthropological study	Children's reviews of books, movies on local news shows
Oral history	Photo exhibit
Scientific	Pictorial tour
Science journal	Photo essay
Daily meteorological posting of weather conditions	Slide tape show
Organized tour of a natural history museum	

Enrichment clusters

Although enrichment learning and teaching can be used in all school structures (e.g., regular curriculum, special groupings, internships), we have found that creating a special “place” in the schedule is the best way to guarantee that every student will have an opportunity to participate in this different approach to learning. The special place is called enrichment clusters (Renzulli, Gentry, & Reis, 2002). Our experience has shown that implementing these clusters provides immediate visibility to the improvement process and generates a remarkable amount of enthusiasm on the parts of students, teachers, and parents. Clusters are also an excellent way to give teachers “the license” to try out this brand of learning which is at the right-hand side of the continuum of learning theories presented in Figure 1.

Enrichment clusters are *non-graded* groups of students who share common interests, and who come together to pursue these interests during specially designated time blocks usually consisting of one-half day per week. There is one “golden rule” for enrichment clusters: *Everything students do in the cluster is directed toward producing a product or delivering a service for a real-world audience.* This rule forces the issue of learning only relevant content and using only authentic processes within the context of student-selected product or service development activities. All teachers (including music, art, physical education, etc.) are involved in facilitating clusters, and numerous schools using this vehicle have also involved parents and other community resource persons. Adult involvement in any particular cluster should be based on the same type of interest assessment that is used for students in selecting clusters of choice.

Like extracurricular activities and programs such as 4-H and Junior Achievement, the clusters meet at designated times and operate on the assumption that students and teachers (or community resource people) want to be there. The clusters place a premium on the development of higher order thinking skills and the creative and productive application of these skills to real-world situations. Common goals make real cooperatives a necessity, and “divisions of labor” within the clusters allow for differentiated levels of expertise and involvement, varying levels of challenge, and opportunities for different types of leadership to emerge on the parts of students. This type of learning environment is highly supportive of individual differences and, therefore, promotes the development of self-concept, self-efficacy, and positive feelings that result from being a member of a goal-oriented team. To put it another way: *Every child is special if we create conditions in which that child can be a specialist within a specialized group.*

Enrichment clusters revolve around major disciplines, interdisciplinary themes, or cross-disciplinary topics. A theatrical/television product group, for example, might include actors, writers, technical specialists, and costume designers. Clearly, the clusters deal with how-to knowledge, thinking skills, and interpersonal relations that apply in the real world. Student work is directed toward producing a product or service. Instead of lesson plans or unit plans, three key questions guide learning:

- What do people with an interest in this area—for example, filmmaking—do?
- What knowledge, materials, and other resources do we need to authentically complete activities in this area?
- In what ways can we use the product or service to affect the intended audience?

Clusters are offered for an extended time block—usually one-half day per week, and they sometimes continue over several semesters (or even years) if interest remains high and there is a continuous escalation of student engagement and product quality. Students enter a cluster based on interests and other information gleaned from the Total Talent Portfolio. Students who develop a high degree of expertise in a particular area are sometimes asked to serve as an assistant or a facilitator of their own cluster (usually with younger students).

Numerous research studies and field tests in schools with widely varying demographics have yielded both research support and practical suggestions for schools wishing to implement the SEM. Persons interested in implementing this model should contact the authors and/or examine some of the material mentioned in the reference list at the end of the chapter (Reis & Peters). A few examples of enrichment cluster descriptions follow:

Remembering World War II: View the world as it was approximately fifty years ago. Hitler was in power and nations were at war. This cluster will look at the issues of the forties, including the Holocaust and investigate how those events influence our life today. A possible product could be an archive of video interviews with triangle area Holocaust survivors.

The Actors Workshop: Develop acting skills through scene work from classic and contemporary drama. Actors will explore styles of acting, using works by Shakespeare, Moliere, Chekhov, Tennessee Williams, Arthur Miller, and playwrights selected by the students. Students will read plays and choose scenes for performance-based study. Possible activities include inviting actors to visit, attending rehearsals of productions, selecting and presenting a scene representative of a particular style or period.

Read All About It!: Become involved in our first school newspaper. Expand your journalism skills as you cover stories for our new publication. Articles may include grade level news, school reports, school interviews, advice columns, selection of student work to highlight, editorials, and book/film reviews.

Poets in the House: Use this time to share poetry, your own as well as others. Wide variety of poetry will be included, for example: acrostics, limericks, shape poems, ethnic poetry, and choral poems.

The Software Review Company: There is a lot of software available to teachers in all content areas. Which would you recommend the teachers at our school to purchase? In this cluster you will have a chance to evaluate various types of software, including multimedia. Your recommendations will be used by the teachers at our school.

Examining our own pedagogy

One of the practical ways to begin the process of promoting a more engaging pedagogy is for teachers to examine their own teaching practices, beginning with the verbs they use, especially when asking questions. Figure 5 lists verbs that correlate with the three levels of knowledge summarized in Appendix A. And there is now computer software that allows the collection and analysis of classroom discourse, including identifying the frequency of verbs such as those in Figure 5.

Words Uses to Prompt Received Knowledge Learning	Words Uses to Prompt Analyzed Knowledge Learning	Words Uses to Prompt Created Knowledge Learning
Define	Explain	Point out
State	Interpret	Defend
Describe	Demonstrate	Differentiate
Identify	Conclude	Reconstruct
Label	Compare	Reorganize
List	Contrast	Construct
Match	Categorize	Devise
Outline	Design	Illustrate
Memorize	Speculate	Infer
Point to	Interpret	Compose
Recall	Relate	Construct
Select	Predict	Infer
Name	Estimate	Paraphrase
Label	Extrapolate	Translate
Arrange	Reconstruct	Evaluate
Report	Hypothesize	Defend
Give examples	Design	Justify
Calculate	Critique	Organize
Repeat	Distinguish between	Formulate
Tell		
Recite		
Recognize		
		Set Goals
		Plan Project (e.g., time lines, needed resources, action steps, intended outcomes, products, audiences)
		Write (e.g., story, essay, proposal, musical score)
		Interview
		Investigate
		Design
		Formulate
		Construct
		Gather Data
		Organize
		Produce
		Schedule
		Prioritize
		Supervise
		Organize
		Negotiate
		Monitor
		Publicize
		Communicate
		Budget

Figure 5: Typical Verbs Used for Raising Questions About Three Kinds of Knowledge (See Appendix A).

Teacher self-assessment of their frequency of use of these verbs can guide them when they plan lessons, examine desired student learning outcomes, and pursue goals for developing students' higher level thinking skills. Of course, none of this will happen without a commitment on the parts of administrative leaders and policymakers; so the main challenge is to bring issues about pedagogy to persons making decisions about what goes on in classrooms. And if "seeing is believing," starting some pilot schools where others can observe this higher level of pedagogy at work is always a way to begin any change initiative. And although there are many books on questioning techniques, one of the best recent books for asking higher level questions is *Now That's A Good Question* by Erik Francis.

Conclusion

Educational and psychological research has made remarkable progress during the past two centuries in helping us to understand the complex nature of giftedness and how to develop it in young people. And the wide variety of programming options that have emerged during the latter part of the present century have helped us learn a great deal about practical ways to better serve young people of exceptional promise. But the continued growth of our field requires that we extend our research and development efforts into areas that have only been touched upon or largely ignored. This article discusses a basic question in our field: What is, or should be, the best pedagogy for developing creative

productive giftedness is clearly an area that should be a priority for continued research and development. It is time to go beyond the multitude of how-to articles for teachers and examine underlying theories and issues that relate to the continuum of learning depicted in Figure 1. The Enrichment Triad Model presented here is one such attempt but other theories need to be developed and tested.

We need both quantitative and longitudinal qualitative case studies to explore how and in what ways a gifted program influenced the choices, careers, and creative and investigative contributions they may have made to their respective fields of study. In this regard, we must learn to view special programs as places that *make* giftedness rather than as places that merely identify it. If we have learned anything during the last decade or two, it is that valid new conceptions of giftedness have emerged from the research and theoretical literature. But if we continue to operate programs based largely on the older IQ cut-off score models and the advanced lesson learning models, we will stifle the development of new and innovative programs where pioneering research can take place.

It is also time to put aside the endless arguments about whether acceleration *or* enrichment is the best way of serving high ability youth; or whether special classes, special schools, or pull-out programs are the best way to organize services for the gifted. It is what we do within any organizational framework that ultimately makes a difference. And it is time to stop debating whether content *or* process is the right and proper focus of curriculum for the gifted—as if one could conceivably be taught without the other! Most of all, we need to focus our research efforts on the core issue of education for the gifted and talented, *the process of learning how to become a creatively productive person* rather than being merely a good lesson learner. The model presented in this article represents what I believe are the key components of one pedagogical approach for developing creative productive gifted behaviors. A better understanding of the three interactive components in Triad will lead to more effective ways of developing in young people not only high levels of competence, but also the within-discipline thinking that represents the *modus operandi* of the first-hand investigator, the self-understanding, and the passion for innovation and scholarship that has characterized the creative producers of our world. And it is our responsibility to make sure that opportunities for this type of challenging work are available in all our schools, and especially schools that serve low-income and minority schools, twice-exceptional students, and students that just learn differently.

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About the Author

Dr. Joseph Renzulli is a Distinguished Professor Emeritus at the University of Connecticut. He has been awarded more than 50 million dollars in research grants and served as the director of The National Research Center on the Gifted and Talented for over two decades. He has spent his career on research focused on the identification and development of creative/productive giftedness and the use of gifted education pedagogy to increase engagement, achievement for all children. He has worked on the development of organizational models and creative/productive approaches to differentiated learning environments that contribute to total school improvement, and he is a co-developer with Dr. Sally M. Reis of an online technology program that produces individual strength-based profiles and personalized enrichment resources for each student. His work on *Assessment For Learning*, which uses student generated strength-based information about interests, learning and expression styles, and executive function skills, has contributed to increased participation of underrepresented students in talent development programs. Dr. Renzulli's books, articles, and videos have been translated into many languages and in 2022 he was ranked Number 3 among the world's top 30 education professionals.

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Appendix (A)

Blending Three Levels of Knowledge To Promote Thinking Skills and Creative Productivity

