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Differentiating the curriculum for gifted young adolescents in the middle school classroom

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Abstract

Academically gifted students exist in every classroom and in all segments of the population. Rather than ignore their gifts and assume that a pull-out program for gifted students will satisfy their educational needs, schools need to accept the fact that gifted students are gifted all day, every day. Intellectually gifted young adolescents are prisoners of time in the classroom. Most of the material covered in a regular classroom is review or aimed at lower cognitive ability students. This leaves gifted young adolescents bored, restless, or hostile to their education. By differentiating the content, process, products, or learning environment of the classroom, teachers can make opportunities which challenge gifted young adolescents with accelerated material, enrichment activities, or independent studies.

Differentiating the Curriculum for Gifted Young Adolescents in the Middle School Classroom

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ABSTRACT

Academically gifted students exist in every classroom and in all segments of the population. Rather than ignore their gifts and assume that a pull-out program for gifted students will satisfy their educational needs, schools need to accept the fact that gifted students are gifted all day, every day. Intellectually gifted young adolescents are prisoners of time in the classroom. Most of the material covered in a regular classroom is review or aimed at lower cognitive ability students. This leaves gifted young adolescents bored, restless, or hostile to their education. By differentiating the content, process, products, or learning environment of the classroom, teachers can make opportunities which challenge gifted young adolescents with accelerated material, enrichment activities, or independent studies.

INTRODUCTION TO THE PROBLEM

CHAPTER ONE

Torrance and Sisk (1997) describe gifted children as a powerful force. They can either advance a civilization or destroy it. The creative abilities of gifted young adolescents need to be activated, or they will be lost-or prove to be dangerous. The question that classroom teachers need to ask themselves is, "What kind of persons do I want the gifted and talented children I teach to become?" (p. 17)

According to Starko (1986), one of the greatest challenges facing educators is providing gifted students with appropriate and challenging educational experiences every day and throughout their entire school careers. Most gifted students, even those who attend special pull-out programs, spend the majority of their time in regular classrooms. Only a small percentage of classroom time is spent on activities that challenge the gifted student.

Starko (1986) reported that according to a nationwide investigation of current practices in gifted education, it was reported that 58% of gifted students who attended enrichment classes were only involved in enrichment activities less than three hours a week. The rest of their education was spent in classrooms covering material they had already mastered or waiting for other students to catch up. This lack of productivity can lead to boredom, discipline problems, inattentiveness, and a failure to develop work and study habits (Starko, 1986). This is especially true during the middle school years when students are identifying who they are, and who they want to become (McIntire, 1998).

In the 1994 Prisoners of Time written by the National Education Commission on Time and Learning, the commission made the following conclusions and recommendations (Benbow, 1998):

> If experience, research, and common sense teach nothing else, they confirm the truism that people learn at different rates, and in different ways with different subjects.
>
> Research confirms common sense. Some students take three to six times longer than others to learn the same thing.
>
> Under today's practices, high-ability students are forced to spend more time than they need on curriculum developed for students of moderate ability. Many become bored, unmotivated and frustrated. They become prisoners of time.
>
> Students deserve an education that matches their needs every hour of the school day, not just an hour or two a week. Pull-out programs are a poor part-time solution to a serious full-time problem.
>
> Fix the design flaw: use time in new and better ways. We recommend that the state and local boards work with schools to redesign education so that time becomes a factor supporting learning, not a boundary marking its limits.
>
> Fixing the design flaw means that grouping children by age should become a thing of the past. It makes no more sense to put a computer-literate second grader in Introduction to Computers than it does to place a recent Hispanic immigrant in Introductory Spanish. Both should be placed at their level of accomplishment.

> In the case of genuinely exceptional students who meet these requirements [i.e., high performance standards for high-school graduation] while very young, schools should offer them the opportunity to take advanced courses.
>
> Above all, fixing the flaw means that time should be adjusted to meet the individual needs of learners, rather than the administrative convenience of adults. (Benbow, 1998, pp. 279-280)

The United States has a one-size-fits-all mentality to curriculum development, and U.S. schools frequently fail to challenge students who are gifted intellectually. As a result, the achievement of the most able students in America lag behind their counterparts in other industrialized nations. Gifted students also fall behind the abilities of previous generations of academically advanced U.S. students (Benbow, 1998; Piirto, 1999).

Galbraith and Delisle (1996) state that in 1993 the U.S. Department of Education released a report titled National Excellence: A Case for Developing America's Talent which asked educators to discuss the "quiet crisis" that exists in the way we educate gifted students. The report highlights the conflicts in our culture's perception of giftedness:

> Today, exceptional talent is viewed as both a valuable human resource and a troublesome expression of eccentricity. As a culture, we admire and reward the brilliant, creative mind after it has invented something practical or produced tangible results. Yet we are not inclined to support those who want to pursue an artistic or intellectual life, and we find ways to discourage those who wish to do so... The nation's high ability students receive mixed messages. Our society urges these young people to do well in school; but it also encourages them not to flaunt their intelligence and, in some cases, to avoid high grades and excellent academic achievement altogether...Negative stereotypes of high-achieving students have

> created an atmosphere in which students do not want to be identified as very smart. (Galbraith & Delisle, 1996, p. 4)

Definitions

Gifted students' academic needs should be met all day and every day. One way to help gifted young adolescents reach their potential is to differentiate their curriculum in the regular classroom. In the following paper, I have reviewed literature on gifted education, methods of differentiating the curriculum, and young adolescent gifted students. For the purpose of clarity, I have defined these terms in the following ways.

Early adolescence. Early adolescence is identified as being between the ages of ten to fifteen years of age. (Carnegie Council on Adolescent Development, 1989)

Middle school. Using the age range of ten to fifteen years, middle schools can encompass fifth through ninth grade.

Giftedness. Galbraith and Delisle (1996) define giftedness in the following way:

> Giftedness can be defined as the ability to solve complex problems in effective, efficient, elegant, and economical ways. Using this definition, a gifted individual is one who can use existing knowledge when necessary and can apply known methods when appropriate, therefore reaching solutions based on the best available knowledge and methods. However, a gifted individual can also abandon existing knowledge and concepts, redefine problems, devise new methods, and reach entirely different solutions. (p. 9)

Intellectually gifted students. I have eliminated the term talented from this paper due to the fact that most sources only refer to high ability or intellectually gifted students.

Some sources used the term talented and gifted, but for the purpose of this paper, I will use the term gifted when referring to intellectually high ability students.

Curriculum differentiation. The principles for differentiated curricula are stated by Cline and Schwartz (1999) in the following ways:

> (a) all learners should be provided curriculum opportunities that allow them to attain optimum levels of learning, (b) curricula must be adapted or designed to accommodate the learning needs of gifted learners, which are different from those of typical learners, (c) the needs of gifted learners cut across cognitive, affective, social, and aesthetic areas of curriculum experiences. (p.15)

Regular education classroom (also called regular classroom). An educational plan that maintains heterogeneous grouping on a full-time basis and makes the regular teacher responsible for special services (Borland, 1989).

Pull-out program. An approach in which gifted students spend most of their time in a regular, heterogeneous classroom, but are also removed for a given period of time periodically for special instruction with other gifted students (Borland, 1989).

Curriculum compacting. This strategy uses pretesting to determine how much the student knows prior to instruction of curriculum. When a student has been assessed as having mastered what is to be covered in advance, decisions need to be made as to how the student will spend the time that has become available while the other students are covering the material. Options include advancement or acceleration in the content area, enrichment activities, or independent study (Cline & Schwartz, 1999).

Acceleration. Acceleration can be a service delivery model, which includes grade-skipping, early entrance to kindergarten or to college, and part-time grade acceleration. Or acceleration can be a curriculum model, which involves increasing the

rate at which curriculum is presented to students (Assouline, Colangelo, Lupkowski-Shoplik & Lipscomb, 1998).

Process differentiation. Involving gifted students in investigations that include higher level thinking skills and skills of inquiry, including higher levels of cognitive operations, creative thinking, and problem solving in a specific domain (Cline & Schwartz, 1999).

Content differentiation. The body of knowledge that is to be learned should be slightly above the learner's current level of functioning, and the content should be sustained at a level that provides challenge and complexity. The content area and the student's areas of strengths should dictate the nature of the differentiation that should take place (Cline & Schwartz, 1999).

Product differentiation. Students can demonstrate their learning and in-depth research through their products. Students may present their work in whatever forms they deem appropriate, such as projects, papers, presentations, or audiovisual programs (Cline & Schwartz, 1999).

In conclusion, gifted middle school students are prisoners of time in their classroom. They spend much of their day covering material they have already mastered or waiting for other students to catch up to them. The United State's one-size-fits-all mentality to curriculum development fails to challenge gifted students, and our country's gifted students lag behind their counterparts in other industrialized nations. To rectify this problem, educators need to differentiate the curriculum to meet the needs of gifted learners.

METHODOLOGY

CHAPTER TWO

In choosing literature to use as resources for this paper, I spoke to educators trained in gifted education. Dr. Barbara O'Donnell, University of Northern Iowa, led me to names of nationally known gifted educators. I searched for published literary works by authors such as George Betts, James J. Gallagher, C. June Maker, Sally Reis, Joseph Renzulli, Carol Ann Tomlinson, Donald Treffinger, and Joyce Van Tassel-Baska based on her recommendations.

I traveled to the Belin/Blank Center for Gifted Education in Iowa City and used the library located in the center. I also attended two workshops sponsored by the Belin/Blank Center. One course was Programming and Curriculum for High Ability Students: Defensible Differentiation taught by Dr. Laurie Croft. Dr. Croft supplied me with numerous journal articles and other names of credible researchers in the field of gifted education. The other workshop was titled Amana 2000: Acceleration and was taught by Dr. Nicholas Colangelo and Dr. Susan Assouline.

Heartland Education Agency 11 has compiled a list of professional literature for talented and gifted educators. I used this list to supplement my resources for this paper, and checked out some books from their library as well.

Finally, I searched for titles that dealt with middle school gifted students. I am familiar with the middle school philosophy through my classes for my Master's Degree in Middle Level Education, and I searched for published works that dealt with the

characteristics of gifted adolescents and the middle school philosophy. I found texts that only dealt with this subject and also texts that included chapters on this subject.

To ensure that the sources I used were valid, I only used published works that I found in the libraries of University of Northern Iowa, the Heartland Education Agency 11, the Belin/Blank Center, and referred journals. I also used published works that were given to me by the Diocese of Des Moines and Dr. Laurie Croft. I used books and journal articles that were written by experts in the field of gifted education and adolescent characteristics.

After reading and taking notes from the various sources, I created an outline of the information I gathered. I organized my paper on the various ways to differentiate the curriculum for gifted young adolescents, and then I chose the sources that I felt covered each topic the most thoroughly as my reference for each specific part of my paper.

A limitation to my sources is that I am not on a college campus and do not have the time to travel to university libraries to examine a wide variety of sources. I believe that the quality of my sources are valid due to the fact that most are a primary source, but the quantity of sources are limited.

ANALYSIS AND DISCUSSION

CHAPTER III

Gifted young adolescents may be cognitively, socially, and psychologically out of stage with their peers. This feeling of being different from their peers can lead to insecurity and isolation at a time when social relations are of utmost importance to a child. By differentiating the curriculum in a regular classroom, students can have their needs cognitively met while still forming social relations within the classroom. Classroom teachers can differentiate the content, process, product, and learning environment to meet the needs of the gifted learners in the classroom. Teachers can also use cluster grouping, acceleration, and independent studies to challenge gifted students. This chapter describes the different methods of differentiation and how a classroom teacher can implement these practices into his or her classroom.

Definition of "Gifted"

Galbraith and Delisle (1996) state that the U.S. Department of Education uses the following definition for giftedness:

> 'Gifted and talented' children means children and whenever applicable, youth, who are identified at the preschool, elementary, or secondary level as possessing demonstrated or potential abilities that give evidence of high performance capability in areas such as intellectual, creative, specific academic, or leadership ability, or in the performing and visual arts, and who by reason thereof require

services or activities not ordinarily provided by the school. (p. 8)

Francois Gagne states that "Giftedness corresponds to competence which is distinctively above average in one or more domains of ability. Talent refers to performance which is distinctly above average in one or more fields of human performance." (Gross, Sleap, & Pretorius, 1999, p. 13)

A student may be gifted (having high potential) without being talented (displaying high performance). Gifts are the natural innate abilities while talents are systematically developed skills. Students must have training or practice, motivation, self-confidence, self-esteem, and must accept and value the gifts to become talented. Gagne describes a model in which gifts are on one side, talents on the other, and a catalyst lies between them. The catalyst acts as a reaction to make something happen between the two parts. A catalyst can be teachers, family members, student interest, or identification of the gifts (Gross et al, 1999).

Gross et al. (1999) found that gifted children have a heightened level of curiosity and seek new knowledge. They have increased concentration, a sharp sense of humor, learn at a faster rate, and have flexible reasoning that can understand a variety of views and abstract ideas. They often develop their vocabulary at an early age and have the ability to read between the lines of people's words and actions. They also become passionate about ideas and are sensitive to the world's problems (Genshaft et al., 1995; Silverman, 1998).

Gifted middle school students are a unique challenge to educators. They can be a study of opposites. They can be child-like in their actions, yet adult-like in their thoughts. They are at times mature and at other times immature; sensitive, yet unaware; independent

in some areas, but dependent in others. They are like travelers; longing for adventures, yet also longing for times and places left behind (Williamson & Johnson, 1998).

According to Genshaft, Greenbaum, and Borovsky (1995), gifted young adolescents may be developmentally immature and can't sit still for long periods of time. They may even be misdiagnosed as having Attention Deficit Disorder. They may also underachieve because assignments are too easy and they become careless. Gifted adolescents also may have multipotentiality, in which they have a wide array of interests and can't stick to one thing. They can be unsuccessful because for the first time in their education, they are faced with a challenge academically, and they do not have the study skills or work habits to work through the challenge. (Cline & Schwartz, 1999; Genshaft et al., 1995).

From a psychological perspective, the primary goal of early adolescence is identity formation. To develop a sense of identity, young adolescents define themselves by the groups in which they belong and by the traits that set them apart from the group (McIntire, 1998). Gifted young adolescents often feel asynchronous; their intellectual, physical, and emotional selves are not developing at the same rate as those of the average child their age (Cline & Schwartz, 1999; Genshaft et. al., 1995).

Galbraith and Delisle (1996) state that since gifted young adolescents can understand abstract concepts, they are often worried about real-world situations such as hunger, pollution, international relations, and the economy. They may have difficulty communicating with their peers since their peers are not at their intellectual level, and gifted adolescents often lack social skills. The intensity that gifted adolescents feel about issues often alienates peers and this may lead gifted teens to seek friends who are older.

The opposite can also occur. Gifted young adolescents may have sought independence from their parents during their elementary school years. This earlier independence leads to a realization of adult responsibilities, which may send them back to playing with younger children (Silverman, 1998; VanTassel-Baska, 1998).

Metha and McWhirter (1997) explain that gifted young adolescents often feel different and that they do not fit their peers. They may be cognitively out of stage because their needs are not met in the classroom, socially out of stage because they feel alienated and distant from a peer group, and psychologically out of sync with themselves or their environment. As a result, they often feel insecure or anxious. They may feel as if they are a "minority of one," and as a minority, gifted students often have difficulty finding peers with whom to relate. Gifted adolescents consistently report that their friends and other students perceive them as "different." This creates a social disadvantage for the gifted adolescent, at a time when social relationships are most important (Maxwell, 1995; Metha & McWhirter, 1997).

Gifted Students in the Regular Middle School Classroom

Middle schools were created as an educational environment where young adolescents could explore adulthood while being supported and guided through ups and downs of early adolescence. In 1989, the Carnegie Foundation Task Force on Education of Young Adolescents released a groundbreaking study titled Turning Points (Schurr, Thomason, & Thompson, 1996; Williamson & Johnston, 1998).

According to the Carnegie Council on Adolescent Development (1989), Turning Points recommendations for middle schools are the following:

(a) create small communities of learning, (b) teach a core academic program, (c) ensure success for all students, (d) empower teachers and administrators to make decisions about the experiences of middle grade students, (e) staff middle grade schools with teachers who are expert at teaching young adolescents, (f) improve academic performance through fostering the health and fitness of young adolescents, (g) reengage families in the education of young adolescents, and (h) connect schools with communities (Carnegie Council on Adolescent Development, 1989).

According to the Council for Exceptional Children (1996), gifted educators and middle school advocates have many shared goals. Some of these goals are (a) meeting the varied affective needs of students, (b) allowing students to work at his/her own pace and level of learning, (c) the use of team teaching and team planning, (d) exploratory and interdisciplinary curriculum, (e) outcome based assessment or mastery learning, (f) the use of higher order thinking strategies, (g) close relationships between teachers and students, (h) teachers acting as guides through the curriculum, and (i) extending learning beyond the textbook.

Even though gifted education advocates and middle school advocates have similar goals for young adolescents, there is a strain in the relationship between the two philosophies. According to Shore and Delacourt (1996), many middle level schools have moved away from special programs or services for gifted learners. A U.S. national survey of nearly 3,400 regular classroom teachers revealed that, at best, only minor modifications to the regular curriculum were made for gifted students.

Members of the National Association for Gifted Children and the Association for the Gifted firmly endorse the view that gifted children benefit from grouping. Shore and

Delacourt (1996) state that meta-analysis of earlier research shows that even within-class grouping could make a significant difference in high-ability young adolescent accomplishments if the curriculum is both enriched and accelerated. Over a school year, gifted learners who were grouped homogeneously experienced academic gains a month greater than other identified gifted students who were not grouped, even when there was no curricula adjustment (Benbow, 1998; Piirto, 1999; Shore & Delacourt, 1996).

Yet, members of the National Middle School Association and the Association for Supervision and Curriculum Development strongly believe that grouping of gifted students is disadvantageous for all students (Coleman & Gallagher, 1999; Shore & Delacourt, 1996). Paul George (George, Renzulli, & Reis,1997), a leader in the middle school movement, states the following proposition when discussing gifted young adolescents and middle schools:

> There is no hard evidence to suggest that gifted and talented (GT) students cannot have virtually all of their reasonable academic needs met in the context of the regular classroom. The continued denigration of the regular classroom by advocates for the gifted, in an effort to secure isolated classes and programs for GT students, has resulted in growing lack of public confidence about the quality of their schools (p. 11).

According to Shore and Delacourt (1996), middle school advocates and gifted education advocates both agree that the middle school curriculum is not challenging enough for the gifted young adolescent, but state that there is not enough collaboration among the groups to solve the problem.

In regular classrooms, middle level teachers often feel uncomfortable with differentiating curriculum for academically gifted learners, including those who are

advanced beyond grade level. In fact, forty-seven percent of middle level educators believe that middle school students are incapable of complex thinking and should avoid taxing learning experiences (Gross et. al., 1999). This fact, coupled with a lack of clarity in middle school curriculum, leaves gifted learners struggling in their middle school classrooms.

Teachers in the regular classroom are faced with the challenge of meeting all of their students' needs. They are serving a wide range of levels and types of academic needs in each classroom. Sixty-one percent of public school and fifty-nine percent of private school teachers stated that they have never been trained in teaching gifted students, identifying giftedness, or creating a program to challenge their gifted students (George, Renzulli, & Reis, 1997). Gifted adolescents are often asked to do a greater amount of work that they already know how to do, serve as peer coaches, or wait for others in their classroom to catch up to them (Tomlinson, 1999; Williamson & Johnston, 1998).

According to Borland (1989), the pull-out program is the most commonly used program format for gifted students in the United States. In this approach, gifted students spend most of their time in a regular heterogeneous classroom, but are removed for a given period of time each week for special instruction with other gifted students. This format is advantageous because gifted students are given time to interact with other intellectual peers, but it is also a part-time solution to a full-time problem. Pull-out programs make gifted young adolescents feel conspicuous at a time when it is important to blend in with their peers.

Due to the fact that some middle schools are doing away with most of their gifted programs, and with pull-out programs only serving as a part-time solution to a full-time problem (Borland, 1989; Piirto, 1999), what should middle school educators be doing to

meet the needs of their gifted students? One answer is that teachers may adapt one or more of the curricular elements (content, process, products) based on one or more student characteristics (readiness, interest, learning profile) to differentiate the curriculum to meet gifted young adolescents' educational needs (Tomlinson, 1999).

Educational Options for Teachers

The review of literature suggests differentiating the content, process, product, and learning environment in the regular classroom to tailor the curriculum to meet the needs of gifted learners. Other methods of differentiation include cluster grouping, acceleration, compacting the curriculum, and independent studies. These practices, as proposed by researchers, are outlined in the following pages.

Cluster grouping

Research has shown that gifted students benefit from being with other peers who are intellectually capable for at least part of the day (Maker, 1993). Yet, many schools are eliminating gifted education programs in the belief that students are best served in a heterogeneous classroom (Feldhusen, 1994; Maker, 1993).

Cluster grouping is an instructional grouping of high ability students in a regular classroom with a teacher who has had training on how to teach exceptionally capable learners. Cluster grouping differs from tracking in that the students are only grouped together in their areas of strength, and for only part of the day. The rest of the day is spent in instruction with the rest of the class (Benbow, 1998; Winebrenner & Devlin, 1996).

Advantages to cluster grouping are: (1) gifted students feel more comfortable with other students who are their intellectual peers, (2) it challenges gifted students to complete higher order thinking activities, (3) students do not have to make up work missed while they attend a more traditional pull-out program, (4) and it is cost-effective for schools because gifted students' needs are met in the regular classroom (Winebrenner & Devlin, 1996).

A disadvantage to cluster grouping is that parents may become concerned if their child is not placed in the cluster group. Also, parents of gifted students who move into an area during the school year may not be able to get their child into the cluster group. Solutions to this problem is to train a wide variety of teachers in gifted education and rotate the cluster groups to different teachers every two years so that parents are aware that many teachers understand gifted education (Winebrenner & Devlin, 1996).

Winebrenner and Devlin (1996) state that another disadvantage to using cluster grouping is that the gifted students may feel isolated and different from the students not in the cluster group. Teachers need to be aware of these feelings, and try to create a classroom in which all students are challenged to learn to their individual potential.

Teachers of a classroom with cluster groups should know how to recognize and nurture behaviors demonstrated by gifted students, and create conditions in which all students will be stretched to learn. The teacher should have faster pacing for the cluster group, and facilitate students' interests in their independent studies. Having a gifted cluster group in the classroom requires extra planning by the teacher and extra consideration in scheduling, but the benefits of cluster grouping will outweigh the inconveniences involved (Winebrenner & Devlin, 1996)

What is Differentiated Curriculum?

"Children already come to us differentiated. It just makes sense that we would differentiate our instruction in response to them" (Tomlinson. 1999, p.24). In differentiated classrooms, teachers begin where students are academically, not at the front of the curriculum guide just because it is organized that way. Teachers provide specific ways for each individual to learn as deeply as possible and as quickly as possible catering to each individual's own potential for learning when the curriculum is differentiated (Piirto, 1999; Tomlinson, 1999).

Curriculum should be differentiated and individualized. Differentiation means that what is provided for gifted students should be qualitatively different from the regular curriculum. Differentiated curriculum begins where the regular curriculum stops (Keirouz, 1993; Piirto, 1999; VanTassel-Baska, 1992). Differentiation is necessary for gifted students because (a) they have different interests than nongifted students, (b) they have the ability to learn faster, and (c) they have the ability to learn in greater depth (Piirto, 1999).

Individualization recognizes that one gifted child may not need what another gifted child does. The identification process the school goes through will show how students' needs and interests vary, and in accordance, the best programs tailor challenges to fit the student. What all gifted students need is a climate in which they can make mistakes, an element of choice in their activities, a challenging curriculum, an opportunity for creativity, and to be encouraged to achieve excellence (Gross et al., 1999; Tomlinson & Kalbfleisch, 1998).

Gross et al. (1999) state that a gifted student's true ability will not be apparent if whole class teaching is used or the same lessons and content expectations apply to all. A

gifted student's abilities will also suffer if the teacher fails to pre-test or exempt the student if he or she has already mastered the required skills. A gifted young adolescent should not be expected to progress at the same rate as his or her classmates or complete tasks and questions that are restricted to lower cognitive levels.

The Maker Model of Curriculum Development for Gifted Students (Maker & Nielson, 1995) includes modification in the four areas of curriculum development. These four areas include the following:

- **Content**: the ideas, concepts, and information presented to students. Content should be more abstract, varied, and organized differently.
- **Process**: the way in which content is presented, types of questions asked, and mental and physical activities expected. Teachers should modify the level of thinking required, pace of teaching, and type of approach.
- **Product Differentiation**: ensures the information or content be directed toward a specific audience and be evaluated by someone other than the developer. Products should address a real problem or concern, and to a real audience.
- **The Learning Environment**: should be student-centered and encourage high mobility.

Goals of the Renzulli's Five Dimensions of Differentiation include differentiating content, process, product, classroom, and teacher. The teacher shares personal knowledge of topics related to the curriculum as well as personal interests, collections, hobbies, and enthusiasm about issues surrounding content areas (Dinnocenti, 1998-99).

Tomlinson (1999) created an organizer for thinking about differentiation. In a differentiated classroom, a teacher responds to a learner's need. This leads to general

principles of differentiation such as respectful tasks, flexible grouping, and ongoing assessment and adjustment. From these principles, the teacher then modifies the curriculum based on the content, process, and product, as well as a student's interests, readiness, and learning profile. She meets these needs though different instructional and management strategies such as tiered lessons, independent studies, and compacted curriculum. The teacher does not differentiate all content for every learner. Instead, she chooses instructional moments which could be better taught through a differentiated curriculum.

Content differentiation.

One of the hallmarks of a differentiated classroom is that the teacher begins where students are and not just at the front of a curriculum guide. Students compete against themselves as they develop. There are high standards and education is individualized. In a differentiated classroom, the teacher focuses on students' differences and modifies the curriculum when they see a need or are convinced that the learner will understand and use the skills taught more thoroughly through modification (Tomlinson, 1999; Tomlinson & Kalbflesch, 1998; VanTassel-Baska, 1994).

Teachers in a differentiated classroom understand that assessment and instruction are inseparable, and that assessment is on-going and diagnostic. It is a way to modify tomorrow's instruction. Instruction is concept based and principle driven. It focuses on understanding, not retention of fragmented bits of information. Students are the active explorers, while teachers guide the exploration. Students set their own goals, and are responsible for their own work (Council for Exceptional Children, 1996; VanTassel-Baska, 1994).

Tomlinson (1999) states that humans learn best when they are moderately challenged. Yet, research shows that the most widely used textbooks have decreased in difficulty, and also incorporate a large percentage of repetition to facilitate learning. Only 25% of the pages in a typical seventh and eighth grade math textbook contained new content. This equates to learning new material one and one-half days a week, and reviewing previously introduced material the other three and one-half days (Piirto, 1999; Renzulli & Reis, 1998). Shore and Delcourt (1996) further state that a sixth grade student now reads school texts using approximately the same vocabulary and comprehension levels as a third grade student fifty years ago. Therefore, gifted students spend much of their school career practicing skills and studying content they already know.

According to Gross et al. (1999) Passow's Test of Appropriate Curriculum describes how to evaluate the suitability of the content of the curriculum for gifted learners:

- Would all students want to be involved in such learning experiences?
- Could all students participate in such learning experiences?
- Should all children be expected to succeed in such learning experiences?

If the answer to these questions is yes, then the curriculum is not differentiated for the gifted, and it should be taught to all students in the regular classroom (Gross et al., 1999).

Gallagher (1998) states that one way to adapt the curriculum for gifted students is to change the content presented and the thinking strategies that the student learns. Acceleration of material presented to gifted students may be taken from curriculum one or more grades above the student's current grade level. The gifted student could work from the same curriculum as other students, but be offered enrichment material that is more

extensive and in-depth. Sophistication of material presented to the gifted student can be at a higher level of complexity than given to regular students. Lastly, gifted students may study material that is not part of the regular curriculum, but holds some interest for them.

Shore and Delacourt (1996) suggest that effective programs for gifted students include (a) grouping gifted students at least part of the time, (b) using acceleration where warranted, (c) allowing students to address real and challenging problems, (d) providing independent study which is well-supervised, and (e) administration by teachers who are well-trained and experienced teaching gifted students.

According to Maker (1993), teachers should expose students to materials and information that are outside the bounds of regular curriculum. These materials can extend the core curriculum or be introduced to students based on the gifted young adolescent's interests. The complexity and abstractness of content affects the process, products, and learning environment in the classroom of a gifted student. The curriculum should take into account students' interests, and allow students the opportunity to pursue topic areas to unlimited levels of inquiry (Maker, 1993; Tomlinson, 1999).

Maker and Nielson (1995), state that the curriculum must be modified in quality, not quantity. The focus of the curriculum should be on abstract concepts, themes, and theories. The ideas presented need to be complex and part of a broad theme. The content should also be organized around abstract ideas and based on a study of inquiry. The level of curriculum must be advanced to interest and challenge gifted learners, and the complexity of curriculum should reflect the capacity of gifted learners to engage in simultaneous rather than linear processing of ideas (VanTassel-Baska, 1998).

The depth of the curriculum should allow gifted learners to explore areas of interest to the level of an expert. The goal of a middle level school should be to assist

each student in learning something that is unique among their school peers. To develop and recognize individual expertise, schools need to increase breadth of areas, know students' interests and goals, create a school climate in which expertise is expected, and develop criteria for students to document their expertise (Cline & Schwartz, 1999; McIntire, 1998; Tomlinson, 1999).

Duch (1995) explains another way to differentiate the content in a classroom is to use problem-based learning. Students are given "real world" problem as a method to learn critical thinking and problem solving skills. By using problem-based learning, students will acquire life long learning skills which include the ability to find and use appropriate learning resources. Students are first given a problem that is occurring in the world today. In a small group, they discuss the parts of the problem that they do not understand. Individually, the students research their part of the problem, then reconvene with their group to discuss their findings. Using this new information, students can create solutions which may solve the problem. This method is beneficial to gifted young adolescents who are concerned about the world and its problems (Duch, 1995).

Gifted students learn at a different rate than nongifted students. They require a different kind of instruction, not just a different degree of instruction. Gifted students also crave depth in key areas of learning, and require the challenge and stimulation of being with other gifted kids at least part of the day. Gifted students need programs and differentiated content for all of the years that they are in school (VanTassel-Baska, 1998; Tomlinson, 1999).

Process differentiation.

Maker and Nielson (1995) state that process differentiation is the way that (a) new material is presented, (b) the activities and questions are asked, (c) teaching methods are used, and (d) thinking skills are used. Teachers need to have the belief that individuals learn in different ways, and the characteristics of gifted students differentiate the way that they should be taught.

Teachers should facilitate lessons that use higher level thinking skills, such as using new knowledge to develop new ideas, deciding on the appropriateness of the knowledge, and developing new products based on this knowledge. Questions should be open-ended so that there are no right or wrong answers. This can stimulate further thinking and investigation of a topic (Maker & Nielson, 1995; Tomlinson, 1999).

Students should use inductive reasoning processes to discover patterns, ideas, and underlying principles. This leads to increased involvement and interest in the curriculum, and increased self-confidence and independence in the student. Students should explain reasoning that led to conclusions and evaluate the processes and products of others' thinking (Maker, 1993).

Tomlison (1999) reports that expert teachers use a wide range of instructional strategies, and varies them based on the nature of the learning task and the learner's needs. Using a variety of instructional strategies helps teachers respond to students' differences in readiness, interest, or learning profile. Following are some of the instructional strategies Tomlinson (1999) suggest to differentiate the process of learning in the regular classroom:

- **Stations** are different spots in the classroom where students work on various tasks at the same time. Stations differentiate the process of instruction because they allow different students to work on different tasks. Teachers can assign students to certain

- stations and assign what work they need to complete while they are there, or students can make these decisions for themselves.
- **Agendas** are personalized lists of tasks that a particular student must complete in a specified time. Teachers generally create agendas that will last for approximately two to three weeks. Students work on the items listed on their personalized agendas as the teacher moves about the classroom helping individual or small groups of students.
- **Orbital Studies** are independent investigations that "orbit" or revolve around a part of the curriculum. Students select their own topics for their orbital study, and then receive guidance form the teacher to develop more expertise both on the topic and the process of becoming an independent investigator.
- **Learning Centers** are classroom areas that contain a collection of activities or materials designed to teach, reinforce, or extend a particular concept. Learning centers are generally teacher created and extend understanding of a particular skill or concept.
- **Tiered Activities** are used so all students focus on the same concept or skill but at different levels of complexity, abstractness, and open-endedness. By using tiered activities, the class is focusing on the same activity, but at different degrees of difficulty. This ensures that all students are challenged and understand the concept at the end of the activity.

Differentiated products.

Maker and Nielson (1995) explain that products are the "ends" of instruction. Gifted students should create professional products based on problems that are real to the

students and address a real audience. Products should represent a transformation of existing information that summarizes others' conclusions. Students should be encouraged to use a variety of types of products to represent their material, and be allowed to choose the formats of how they want to present their products.

The following gives an overview of Maker's (1993) explanation of the twelve steps to produce qualitatively different products:

- Step One-Teachers should assess, find, or create student interests. A Student should be allowed to choose a topic of interest to him or her.
- Step Two- Teachers conduct an interview to determine the strength of the student's interest. The teacher should ask questions to assess interest and commitment to the topic and ensure it is the student's interest, not just a topic that will please the teacher.
- Step Three-The teacher should assist the student in finding a question to research. The teacher should lead the student to their field of study in guide books or manuals.
- Step Four-The student develops a written plan through a contract, journal, log, or management plan.
- Step Five-The teacher helps the student locate multiple resources as the student continues to work on the topic.
- Step Six-After the teacher ensures that the topic is focused and defined, he or she helps the student acquire and make use of specific data; gathering tools and investigative techniques that are standard in research.
- Step Seven-The teacher helps the student decide which questions to answer in their research.
- Step Eight-The teacher assists the student in setting up interviews, distributing questionnaires, and providing transportation for data collection.

- Step Nine-Students identify their final products and audiences.
- Step Ten-The teacher offers praise and critical assistance. He or she informs the student that everything can be improved through revision, rewriting, and attention to detail.
- Step Eleven-The teacher and student pinpoint specific areas for adaptation. The teacher explains how professionals identify and phrase research questions, gather and analyze data, and in an unbiased way, draw conclusions, and communicate the results effectively.
- Step Twelve-The teacher and student evaluate the product. There should not be a letter grade given, rather a critique of what was done well, and what could be improved upon next time.

Even though the product and audience is chosen by the student, the teacher plays an integral part of this process. The teacher helps the student locate resources and focus their study. The teacher and student collaborate to ensure the student creates a product that clearly defines what they have learned through their study.

Modification of the learning environment.

Maker (1993) explains that a differentiated learning environment is centered around students' ideas and interests. Students extend the curriculum, plan field trips, and design bulletin boards. The classroom is a reflection of the personalities, interests, and abilities of the students rather than the teacher.

The teacher gives an overview of the requirements for a unit and some extension activities. The teacher then meets with students who would like an extended study of this topic, and a contract is written of work that will be completed. If there is an unmotivated gifted student in the classroom, they may be required to do a certain number of extension activities (Maker, 1993).

The classroom should be open to a variety of ideas, materials, problems, people, view points, and resources. A corner of the classroom should include complex materials and objects to entice students to explore their meaning. It is a classroom that is absent of judgment. There is an attempt to understand the students' attitudes, values, feelings, and beliefs. Students should also be able to explore and understand their own feelings (Maker, 1993; Tomlinson & Kalbfleisch, 1998).

The classroom climate should be flexible in its groupings, mobility, scheduling, and criteria for evaluation. There should be concern given to the psychological, emotional, and physical safety of students, a value placed on excitement about ideas and learning, and stimulating and challenging educational experiences. Students should feel as if their opinions matter and they will be free of humiliation and put-downs (Clark, 1997; Maker, 1993; Piirto, 1999).

Regular classroom teachers need the support of their administration to create a differentiated learning environment. There needs to be a comprehensive plan for curriculum and services designed for gifted students must be developed and used (Maker, 1993; Tomlinson 1999).

Starko (1986) states that the first responsibility of administration and the coordinator of the gifted program is to provide classroom teachers with comprehensive training in teaching different strategies. The resource teacher for gifted education can also

give support to classroom teachers by demonstrating different strategies to use with gifted students and teaching regular classroom teachers gifted teaching models.

Tomlinson (1999) describes teaching as a learning triangle. The three angles are represented by the teacher, the students, and the content, and all parts are needed to create and support the whole. The teacher is comfortable with her role as a leader and learner in the classroom. The content is relevant, personal, and seems "real" to students. Students are allowed to have a say in what and how they learn.

Tomlinson (1999) wrote the following characteristics of teaching and learning in healthy environments:

- The teacher appreciates each child as an individual
- The teacher remembers to teach whole children
- The teacher continues to develop expertise
- The teacher links students and ideas
- The teacher strives for joyful learning
- The teacher offers high expectations and lots of ladders
- The teacher helps students make their own sense of ideas
- The teacher shares the teaching with students
- The teacher clearly strives for student independence
- The teacher uses positive energy and humor
- "Discipline" is more convent than overt

Acceleration.

Benbow (1998) defines acceleration as deciding that competence rather than age should be the criteria to determining when an individual receives certain academic

curriculum. Schiever and Maker (1997) define acceleration as models of both service delivery and curriculum delivery. Service delivery offers standard curriculum experiences to students who are younger than the normal age that normally receive such experiences. Curriculum delivery is speeding up the rate at which the curriculum is taught.

Different methods to accelerate a gifted student include having them admitted to school earlier than their peers, skipping a grade in the curriculum, entering college early or without a high school diploma, using content acceleration while remaining with peers in the classroom, taking special fast-paced classes during the summer, or completing two years of a subject in one year (Assouline et al., 1998; Benbow, 1998; Piirto, 1999).

Each type of acceleration has advantages and disadvantages. Early entrance to a grade can allow for students to complete schooling at a younger age allowing for more time in professional development in a career. Yet, it can also be difficult for a child whose physical and emotional maturation is not at their classmate's level. This is especially difficult in middle school when physical maturation and athletic abilities influence self-confidence (Feldhusen & Moon, 1995; Schiever & Maker, 1997)..

Acceleration as a service delivery model also does not differentiate the curriculum to meet the needs of a gifted young adolescent. By skipping a grade, the student is just receiving curriculum that was geared for average students a year older. The pace and content have not changed, the student is just receiving the curriculum a year earlier than usual (Schiever & Maker, 1997).

Despite some of the drawbacks, decades of research have shown that acceleration is the best approach for teaching gifted students in their present situation and in their long-term education (Assouline et al., 1998). Intellectually gifted students who are accelerated in grade placement perform as well as talented but older students already in

the classroom. Gifted students who are accelerated in the curriculum also show almost a year's advancement over talented same-age nonaccelerates. Students who are accelerated in the curriculum exhibit no evidence of negative social and emotional development (Assouline et al., 1998; Benbow, 1998; Feldhusen & Moon, 1995; Piirto, 1999).

Some guidelines for accelerating students include the following: Students should be able to manipulate abstract symbol systems better than their peers. Students should be at least in the upper 2% of the general population in terms of general ability, and be functioning intellectually and academically above the mean of the desired grade. Students should not be underachievers or be under pressure to accelerate, they should not be accelerated into or beyond their sibling's grade, and student's should only skip one grade at a time. The school should exhaust all challenging opportunities within the school or grade before accelerating a student. Finally, the student should be free of serious social and emotional problems, and demonstrate a desire to learn (Assouline et al., 1998; Benbow, 1998).

Curriculum compacting.

Curriculum compacting is a strategy that recognizes that gifted students may already have the knowledge that is taught in the regular curriculum. By pretesting students to determine how much they know before the curriculum is presented, the teacher can eliminate the unnecessary drill of already mastered material. After a student shows mastery of what is to be covered in advance, decisions are made on what the student will be doing with the time that is freed. Options can be advancement or acceleration in the content area, an independent study on an area of interest to the student, or enrichment activities.

Curriculum compacting is designed to provide necessary evidence that a student has mastered certain skills and concepts required in regular curriculum. Once a skill is learned, the student spends classroom time doing enrichment activities or independent studies. Curriculum compacting creates a more challenging learning environment, guarantees proficiency in the basic curriculum, and buys time for more appropriate enrichment or acceleration activities (Clark, 1997; Piirto, 1999).

The rationale for curriculum compacting, according to Gross et al. (1999), is that students often already know most of a subject's content before 'learning' it, the curriculum in many subjects has been 'dumbed down', the needs of gifted students are not met in the classroom, and compacting allows time for more challenging learning experiences which increase achievement levels.

Renzulli and Reis (1998) describe the first step in curriculum compacting is to define the goals and outcomes of a given unit or part of instruction. Teachers can find these outcomes in their curriculum guides, or the scope and sequence in the teacher's manual. Then the teacher examines the objectives to determine which ones represent the acquisition of new content or thinking skills rather than review or practice of already learned material. The main goal of this step in curriculum compacting is to help teachers become better analysts of the materials they use and be able to make individual programming decisions.

The second phase is to identify students who have already mastered the objectives or outcomes in the unit to be taught. Scores on previous tests or completed assignments, teacher assessments from previous years or in other classrooms can help identify students who would be candidates for curriculum compacting (Cline & Schwartz, 1999; Renzulli & Reis, 1998).

Pre-tests given to students to identify their knowledge in a unit of study can be taken from the published textbook or be a teacher created test. Teachers can also pre-test by having a discussion with the student, having the student write an essay of all he or she knows about a topic, or have the student complete a 'hands-on' task using the information to be studied (Gross et al., 1999; Piirto, 1999).

Students who have achieved a specified criterion or grade on the pretest are only responsible to learn the material that they have not previously mastered. Teachers can have them work independently on this material or have them attend the regular classroom instruction on concepts they have not mastered. The rest of the time is spent on enrichment activities or independent study (Winebrenner & Berger, 1999).

The final phase, according to Renzulli and Reis (1998), is when a student has mastered all new skills or objectives in a unit of study, they are free to study more advanced subjects. The decision on what to study should be in collaboration with the student and based on his or her interests. One approach is to compile information about three dimensions of the learner's abilities, interests, and learning styles. This information is compiled in a Total Talent Portfolio for each student, which is then used to make decisions about enrichment activities and differentiated experiences for the student.

Compacting the curriculum can be designed for an individual student, a small group of students, or a whole class. When compacting the curriculum for an individual, the teacher should ask three basic questions: (a)What does the child already know? (b) What does he or she need to learn? (c) What differentiated activities will be offered to meet the child's needs? This information may be organized on a three column form called a "compactor" (Starko, 1986).

The first column on the compactor, "Curriculum Areas to be Considered for Compacting," answers the question what does the child already know. The second column, "Procedures for Compacting" is used to describe activities that will be used to teach skills that the child does not know. The third column, "Acceleration and/or Enrichment Activities" is used to describe the activities to be completed in the additional time that is made available through compacting. These activities use the student's strengths and interest to challenge them (Starko, 1986).

Starko (1986) describes group compacting as being used when there is a small group of students who are at approximately the same ability in a classroom. The teacher uses a form similar to the compactor to chart the activities for the group. After pretesting, students may be given a list or folder of activities to be completed for each unit. If an individual student in the group has mastered material that his group has not, he or she may pursue enrichment/acceleration options.

Starko (1986) explains that in middle school classrooms, teachers can use group compacting in homogeneously grouped classes. At the beginning of each unit, the teacher creates a form including the major concepts to be taught. After a student has shown mastery of the concept, a check mark is placed next to their name. If most of the class has mastered a particular concept, no direct whole class instruction is done in that area. Students who have not mastered the concept, are given individual or small group instruction on the concept, while the rest of the class completes enrichment activities. The teacher can also use whole class acceleration by progressing through the unit at a more rapid pace.

Often times, material is covered in a classroom that students may not have the sufficient knowledge to take a pretest in a content area, but the student may be able to

cover the material at a much more rapid pace than their classmates. For these students, the best option is to allow them to progress through the material at their own pace (Starko, 1986). This type of independent progress can be monitored through the use of contracts. Contracts should state the concepts and outcomes that the class will cover, and also activities that the student will complete to show mastery of these concepts. Students should be responsible for documenting how their time is spent, and if the student breaks the contract, he or she will be required to rejoin the class for the duration of the unit (Winebrenner & Berger, 1999).

Starko (1986) explains that implementing curriculum compacting is the chief responsibility of the classroom teacher, yet teachers require the assistance of administration and the school specialist on gifted education to have a successful program. Teachers should receive training on the process of curriculum compacting, a variety of examples, and the opportunity to practice compacting before implementing it in the classroom. The school specialist should provide a variety of enrichment activities and ideas for the classroom teacher to use. Administration should provide the necessary funds to purchase enrichment materials.

Independent study.

According to Maker (1993), independent study builds upon students' desires and needs for self-initiated learning. Researchers have shown that students learn better and are more motivated if they are involved in their own learning, and will learn skills to keep them learning throughout life. Independent study can involve a student covering a course of study outside the class, or can be a strategy guided by the classroom teacher. It can accommodate students who have completed the curriculum in classroom, or it can allow a

student to explore an area of interest in greater depth and breadth (Cline & Schwartz, 1999)

Betts and Kercher (1999) describe the Autonomous Learner Model (ALM) as being designed specifically to meet the diversified cognitive, emotional, and social needs of learners. Emphasis is placed on meeting the individualized needs of learners through the use of activities in the five dimensions of the model: orientation, individual development, enrichment, seminars, and in-depth study.

The Orientation Dimension of the model allows learners, teachers, administrators, and parents a chance to understand the concepts of giftedness, talent, intelligence, creativity, and the development of potential. Students often work in groups to work on social skills and to learn more about the others in the group and themselves (Betts & Kercher, 1999).

The Individual Development Dimension helps the learner to develop cognitive, emotional, social and physical skills, concepts, and attitudes necessary for life-long learning. Students work on inter/intra-personal development, life-long learning skills, career education, and technology (Betts & Kercher, 1999).

Betts and Kercher (1999) further explain that the Enrichment Dimension allows students to explore content which is not usually in the regular classroom curriculum. Student decide on areas in which they would like to study, and the teacher helps differentiate the curriculum to meet the students' needs.

The Seminar Dimension is when students research a topic in a small groups of three to five students and then present the new knowledge to the rest of the class. This allows the student to move from the role of a student to the role of a learner. As a learner,

the young adolescent now has a structure to continue seeking new knowledge throughout their life (Betts & Kercher, 1999).

The In-Depth Study Dimension allows the student to pursue areas of interest through the development of long-term, in-depth study. The learner determines what will be learned, how it will be learned, how it will be presented, what research is needed, what the final product will be, and how the entire learning process will be assessed. The teacher or mentor helps the student plan their area of study, and assists in finding resource materials. At the completion of this study, a presentation should be given to all people who are involved or interested (Betts & Kercher, 1999).

Betts and Kercher (1999) state that the philosophy of ALM is that as students progress through the dimensions, they will be autonomous learners. Students have the opportunity to pursue their own interests to whatever depth they choose. At the end of the process, they will become independent, self-directed learners. By becoming self-directed in their learning, students will become life-long learners, which is a goal that all educators should wish for their students.

Ways to Create a Differentiated Classroom

The first step in differentiating the regular classroom is to plan the regular curriculum, then modify its content, process, product, and environment for gifted students. Do not assign or expect gifted students to produce greater volumes of work, this will lead to resentment from the students (Maker, 1993).

Tomlinson (1999) recommends starting small and growing slowly with the curriculum changes. Reflect on the essential concepts that should be learned, and discuss with students what they would like to learn in the classroom. Create a routine and

organize the procedures that students will complete in the differentiated curriculum. Include administrators, the school specialist on gifted education, parents, and the learners on what they can expect in the classroom. Use volunteers, mentors, and create school/community partnerships. Involve students in service learning or youth program opportunities (Williamson & Johnston, 1998).

Gross et al. (1999) suggest when creating units of work, teachers should pre-test to check for prior knowledge. Pretesting also helps to design units that extend students' skills and understanding beyond the curriculum. Next, the teacher should write a rationale to provide an overview of the unit, describe the teacher's goals, and state the purpose for a unit. The next step is to write the objectives of the unit and connect it to the outcomes of the unit. Lastly, an outline of the content should be created to ensure that the core content is covered, and that one area is not overly covered. If teachers prepare each unit this way, it will be easier to decide which concepts can be covered differently or at a quicker pace for gifted students (Gross et al., 1999).

After a teacher has decided how to differentiate the curriculum, he or she can implement learning centers, learning stations, orbital studies, independent studies, learning contracts, problem-based learning, group investigation, or a compacted curriculum for gifted students (Tomlinson, 1999). Teachers need to consider the classroom setting, which method fits students' needs, the flexibility or mobility that a teacher will allow in the classroom, the practicality of the method in the classroom, and if the method is valid for each student's needs (Maker & Nielson, 1995).

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER IV

Middle school teachers in the regular classroom have the difficult job of meeting the educational needs of every student in their classroom. Sixty-one percent of public school teachers have never been trained in teaching gifted students, identifying giftedness, or creating a program to challenge gifted students. Therefore, many gifted middle school students spend the majority of their day in a classroom reviewing already learned material or struggling with boredom waiting for their classmates to keep up to them.

Children enter a classroom differentiated from each other, so it only makes sense that a teacher differentiates instruction in response to these differences. My recommendations after reviewing the best practices in differentiation are: (1) mandatory gifted education training for all undergraduate teacher education programs and frequent inservices on gifted education for teachers in the regular classroom, (2) support of administration to purchase enrichment materials for gifted students, (3) remove the stigma of elitism associated with gifted education, and (4) create teacher assistance teams to support teachers who have questions on how to best serve the needs of the gifted students in their classroom.

Teacher Training

My first recommendation based on the review of literature on differentiating the curriculum for middle school students is that classroom teachers need to be trained in

teaching gifted students and implementing a program that is differentiated to meet their needs. Teacher education of gifted students' needs and educational models of gifted education practices should be a requirement of an undergraduate program for all educators.

The National Association for Gifted Children (NAGC) stated in its 1994 position paper that teachers need to provide better learning experiences for gifted students.

> Some of the competencies cited include a knowledge and understanding of the cognitive, social, and emotional characteristics; needs and potential problems experienced by gifted and talented students from all cultural groups; an ability to develop a differentiated curriculum appropriate for meeting the unique intellectual and emotional needs and interests of gifted and talented students; and an ability to create an environment in which gifted and talented students can feel challenged and explore and express uniqueness. (Cline & Schwartz, 1999, p. 171)

Therefore, gifted education needs to be included as part of teacher preparation programs. Teachers who have had specialized training in meeting the needs of gifted students are more effective than teachers who have had no such training (Cline & Schwartz, 1999). If teachers are to meet the needs of the diverse learners in their classroom, instruction for academically diverse learners should be a priority, pre-service training for teachers.

Teacher training in gifted education should not stop once a teacher enters the classroom. Teachers also need to have frequent inservices on gifted education in order to be knowledgeable of best practices and new research. Inservices on gifted education should be part of the continuous training that teachers receive during their staff development days.

Administrative Support

My second recommendation is that teachers need inservices, support of administration, and money to purchase resources for enrichment activities. No one teacher can be expected to meet the needs of every type of learner. Teachers must have support systems available to them that can provide assistance and collaboration with other professionals. They also need the support of a trained specialist in gifted education to assist them in creating extended and enrichment activities for gifted students. With this support and guidance, regular classroom teachers can better meet the needs of gifted students in the classroom.

According to Treffinger (1982), no regular classroom teacher can provide all services that are needed for adequate instruction for all of his or her students without adequate support and services. No one can do the job alone, and teachers should view themselves as an instructional team, rather than a sole provider of services to all students.

According to Piirto (1999), schools who won awards and had reputations of differentiating and individualizing for students had the following themes in their districts: (a) teachers had advanced training or advanced degrees, (b) teachers were willing to try new ideas, (c) teachers voluntarily collaborated with teachers in and out of their grade level, (d) teachers recognized that students had varying academic needs and tried a variety of teaching strategies, (e) the schools respected innovative leadership by the principal and superintendent, (f) teachers felt they had support for their innovations.

The Richardson Study (Cox & Daniel, 1985) was a national investigation of educational opportunities for able learners. The study produced recommendations for a program of action that school districts could use to support gifted education. In the area of staff development and teacher support, there were the following recommendations:

- Consider staff development a continuous process for teachers, consultants, and administrators.
- Develop teaching strategies that are appropriate to the learning styles of able students and encourage a wide range of thinking and questioning skills.
- Arrange for joint planning among teachers at different levels with careful attention to the K through 12 sequence in each content area.
- Help teachers develop a manageable record-keeping system that allows them to monitor student progress without undue loss of instructional time.
- Provide the regular classroom teacher adequate support services so that enrichment is available to able learners in the regular classroom.
- Use nearby colleges or universities as a resource for ongoing staff development, for innovations in curriculum, and for educational research (p. 36)

Building on the Richardson's recommendations that teachers should collaborate on instructional plans, middles school teams of teachers should have at least one teacher on the team who is trained in gifted education. This ensures that when a team is writing their units of study, they can have an "expert" help them differentiate and extend the curriculum for gifted students. Therefore, each teacher on the team can differentiate their own content area, and the gifted student will be challenged by all teachers in all areas of the curriculum.

Stigma of Elitism

My third recommendation would be that the United States education system needs to replace the stigma of elitism associated with the term "gifted". People confuse the term gifted with the term valuable. All children are valuable and can contribute to society, but

not all children have the same abilities. Some students have high ability in school subjects, some have low abilities, and all need to be challenged according to their individual abilities. Some students' abilities in school are so extremely high that the regular curriculum does not fit their needs, they need their curriculum differentiated.

Gifted education is not denying students in the regular classroom of education, it is just serving the needs of students who have extreme intellectual abilities. Gifted education is an attempt to adjust the curriculum to meet the needs of the student. If educators can accept that all students have varying needs, and some vary more than others, than they will be willing to change the curriculum to better meet gifted students' academic needs.

According to Treffinger (1982), "we must weave gifted programming into the fabric of the total school program, not stitch it on as if we were patching an old pair of jeans" (p. 5). Rather than just having a separate program for gifted education, the services for students should include many options and alternatives, varying in kind and degree and duration throughout the day.

Teacher Assistance Teams

My final recommendation is to create teacher assistance teams. Maker (1993) describes a building-level problem-solving unit that usually consists of three teachers who assist other teachers in (a) analyzing students' learning or behavior needs in the classroom, (b) generate specific goals for teachers and students, (c) brainstorm practical strategies for teachers, (d) develop procedures to measure student progress, and (e) provide follow-up support while teachers implement strategies. If the gifted specialist, or another teacher with a gifted education background, is on this team, the teacher assistance team could provide teachers with strategies to differentiate their curriculum to assist gifted

students whose needs are brought to the team, and promote positive learning and behavior experiences for these gifted students.

On a personal note, I struggle with meeting the educational needs of my gifted students. I am the talented and gifted teacher at a Catholic school which serves 410 students in a K-8 building. I currently serve thirty-eight students in grades three through eight in a pull-out program, conduct Kingore Observation Inventory activities for the kindergarten through second grade students, and monitor extra-curricular academic activities such as mock trial and speech competitions. I do all of this and I am only employed 1/3 time. I meet with my gifted students one hour a week, and this hour is often canceled due to field trips, inservices, or the Iowa Test of Basic Skills. My program is viewed as something "extra" and some teachers are somewhat hostile to a "gifted" program.

Needless to say, the gifted students' educational needs are not being met by me. I researched this topic to help my students in their day-to-day curriculum. I want to use the knowledge that I have gained to assist the regular classroom teachers in differentiating their curriculum. I am presenting the information I have researched to our Board of Education, and am scheduled to present an inservice on differentiated curriculum to my teaching staff. By sharing what I have learned, I will help the students in my school have an educational program that meets the needs of where they are academically, rather than where a text book begins.

In conclusion, I learned so much about gifted young adolescents in reading the literature on this subject. I feel that if teachers are informed on curriculum differentiation, they will be able to create classrooms in which gifted students are no longer prisoners of time.

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