The term differentiation has become a popular contemporary term in both general and gifted education. It has been used, misused, and abused and has been generalized to address a multitude of educational activities. Similar to collegial terms such as “cool,” the term is applied generously by the speaker and it becomes incumbent on the listener to interpret the specificity of its meaning. After a recent meeting regarding the topic of “differentiation,” we queried the teachers to ask what they perceived to have been the focus of the presentation. Responses ranged from a discussion about individual differences among students to a discussion about abandoning the current core curriculum for a “different” curriculum.

Differentiation has become a term to argue for the recognition and attention to individual differences among students as well as to justify predetermining what and how groups of students who represent differences will learn without simultaneously considering the curricular concept of equal access. Differentiating has become a term to argue for grouping practices that facilitate gifted students as well as to justify creating learning environments that place students in fixed groups. The proliferation of the term and the variety of definitions attributed to the term need to be addressed in order to both clarify and apply the term differentiation with specific rather than general meaning and to derive the type of outcomes best associated with the intent of the concept.

(see KAPLAN, page 18)
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When recruited into gifted and talented education, I had little idea how often I would compare the academic classroom with competitive fine arts programs. I have often found these reflections quite helpful in the classroom with competitive fine arts programs. I have comparisons lead me to conclude that the fine arts system depends upon differentiation and that differentiation contributes to the success of these programs in attracting students, meeting the needs of the students, and maintaining support from the parents. Those who differentiate best realize the greatest success.

While attending concerts by award-winning high school orchestras, the weaving of talents required to create these phenomenal performances often awes me. The directors coach a group of students with varying talents and dreams into an orchestra that performs cohesively. In the orchestra performances the students blend their talents. Although each section requires unique skills, the audience is not constantly reminded of this fact. Likewise, the audience is not readily cognizant of individual skills although the sections are "chaired" by skill with the first chair position being assigned to the student who through various assessments has been determined to be the most talented in the section.

If a school has the capacity within its schedule and faculty allotment, smaller ensembles allow further opportunities to highlight and hone the skills of those with greater interest in music and with more developed gifts and talents. For example, strolling string ensembles perform by memory while moving through the audience in diverse and unfamiliar settings. To create these performances, their repertoire, like that of other sectional ensembles, requires greater depth, complexity, and pacing than that of the larger orchestra to appeal to broad audiences and to highlight their

(see BRIDGES, page 20)
Differentiated Curriculum: Seeking The Holy Grail

Jay McIntire

Differentiated curriculum. It's not often controversial except when it gets confused with tracking. It's not difficult to understand. It's not even especially difficult to do — in a controlled environment. So why do we continue to read and write about it and to think about it — this Holy Grail of gifted education?

First, there's the status quo problem. Other than in exceptional classrooms and extraordinary schools, teachers and parents did not experience differentiated curriculum. Consequently, it doesn't come to us naturally when we start to teach. It needs to be taught.

Second, there's cost. We educators of the gifted argue that differentiation needn't cost any more than lock-step curriculum. It just requires a change in some teaching strategies and organizational patterns in classrooms. Once the changes are institutionalized, the teacher/pupil ratio, the most significant factor in school budgets, can be the same. Sadly, to make such a complete change in culture and to provide such intensive staff training does add a lot of expenses before change to a differentiated program will succeed. If we were starting an educational system in a vacuum from the bottom up, it wouldn't need to cost more. Between the brick walls and school district lines that exist in the real world, the retraining costs would be major.

Thirdly, there are policies and incentives in place that discourage differentiation. Take college admission, for example. I often tell parents that being class valedictorian gives a student about a 40% chance of being accepted at the Massachusetts Institute of Technology (MIT) and probably even less chance at The Juilliard School. Solving a previously unsolved mathematical problem (MIT) or winning the Tchaikovsky competition (Juilliard) almost certainly gives you better odds. Such results come from differentiated learning experiences, though, while valedictorian status can more easily be determined when courses are defined and grades are scalable. It's easier for a parent, a school board, and a state to measure the progress of students based on TAKS scores or grades than on emerging skills and passions that might be applied to a Chopin sonata or an enigma of number theory.

In Texas, it is not at all practical to seek differentiated curriculum across all ages, grades, and skill and ability levels. We still are struggling for consistent, high quality differentiation in our gifted programs and through such opportunities as the gifted standards project. While the Holy Grail of fully-differentiated curriculum is still a dream to us, the authors or in issues are helping make sure it is not a fantasy. They combine the idealism of differentiation with the reality of the status quo, the constraints of budgets and training, and the realities of (dis)incentives and policies.

These authors and their counterpart presenters at the TAGT 2003 conference, lead us on a worthy quest.
The Case for a Systems Approach to Curriculum Differentiation

Joyce VanTassel-Baska

Differentiation of curriculum, instruction and assessment for gifted students is an essential aspect of appropriate programming for them. Yet many times it is perceived as an activity to be conducted only by resource teachers “on the run” or regular classroom teachers who lack background training in both gifted education and curriculum development. I want to suggest in this article the need for “sustainable differentiation” in the form of district-wide documents that ensure that the process of differentiation has teeth in it and is not subject to the vagaries of each teacher deciding or not deciding to practice it. In order for this type of differentiation to become commonplace, however, we must give up on a few myths we hold dear in the gifted education movement.

Myth #1 - Teachers should develop curriculum for the gifted.

This myth has been perpetuated throughout most of our history as a field for several reasons, not the least of which is that teachers of the gifted are creative souls who enjoy the creative enterprise of curriculum development, know their students well enough to plan for them appropriately, and are also responsible for classroom delivery such that the act of curriculum planning can become seamless. While these arguments have some saliency, the truth is that teachers do not have the time needed to develop strong curriculum for our best learners, a task that takes focused effort over time to develop, pilot, and refine into a usable product. Teachers should not feel responsible for “writing the music”, only for adapting it to their students’ needs.

Myth #2 - Teachers can develop curriculum for the gifted.

Teachers of the gifted many times are not instructed in curriculum development at the level of expertise necessary to create meaningful curriculum. It is at the level of design where the art and science of writing curriculum resides. Design elements must all be well understood, and curriculum products must display the ways they interact. Thus curriculum goals and outcomes must be assessed by appropriately advanced measures. Activities, strategies, and resources must be well thought out and articulated as a package for delivery, and a system of revision must guide the process. Few teachers have the skills to accomplish this task on their own, and few districts have the resources to fund it over time.

Myth #3 - Curriculum for the gifted can be developed quickly and “in medias res”.

This myth is especially dangerous because it suggests that working with the gifted is about an individual teacher’s “brainstorms” for the day rather than a planful set of experiences, crafted before the school year began.
Curriculum for the gifted needs to be well-articulated before the first day of classes and planned out in relevant units or modules for at least a semester. Daily lesson plans should be tailored to student needs as a part of each day’s preparation, with a strong focus on the best mode of classroom delivery. Preferably such differentiated planning should involve a team of teachers discussing the various possibilities for implementation and helping each other decide on the best path.

**Use of exemplary curriculum as a base**

If these myths continue to prevail in practice, the field of gifted education cannot move forward in respect to curriculum. Rather, we are caught in a spiral of reinvention, bounded by individual idiosyncratic thinking about what is good for the gifted and a set of abstract principles about how to create that goodness. Rather than focus our limited resources and time in such endeavors, it would seem prudent to take another tack, to create planned differentiation based on existing materials already judged to be exemplary. Such materials exist in every subject area. They have been developed and designed with high ability or gifted learners in mind; and they have been shown to be effective in enhancing critical inquiry and thought. They have been used across different types of districts and different types of classrooms. Moreover, each of these curricula meet “quality control” standards:

1. Evaluation research evidence exists to show that the curriculum works with gifted and high ability learners.
2. Evidence exists that teachers find it usable and helpful in working with the gifted.
3. The curriculum has been objectively assessed by experts as exemplary for gifted learners.

**Selecting exemplary curricula for gifted programs: Framework development and standards alignment**

One of the critical issues in deciding to use exemplary curriculum is to create a plan for examining such curricula and deciding how and when to use it. Moreover, its effective use is predicated on the fact that school districts a) have created a K-12 curriculum framework for their gifted program that delineates goals and outcomes and b) have aligned this framework with the state standards. These two acts must precede more discrete curriculum choices yet link to them in very real ways.

Steps in creating such frameworks and aligning with standards are well-delineated elsewhere (VanTassel-Baska, 2002; VanTassel-Baska & Little, 2003). However, some ideas bear repeating here. School districts need to create or use an advisory group as a representation of the district as a whole to create the curriculum framework and consensually adopt it, even taking it to the Board of Education for final adoption. The framework should be broad enough to take in all subject areas and grade levels yet be stated at the outcome level in a measurable way. A sample goal and outcome set follows:

| Goal: To develop gifted learners' knowledge, skills, and habits of mind to advanced levels in relevant areas of the core curriculum. |
| Outcomes: Students will be able to: |
| — Analyze and interpret problems and issues in relevant disciplines |
| — Synthesize major theories, ideas, and themes in relevant disciplines |
| — Evaluate trends and issues in relevant disciplines and subfields |
| — Create or design workable models in a given discipline |

Just as such a goal cluster might be equally applicable to the study of science or language arts, so
Making the Heterogeneous Classroom Work for Gifted Kids

Carol Ann Tomlinson

It has long been my contention that all students—all humans—share the same defining needs. It is the shape of our particular experiences that cause the needs to be manifest somewhat differently. A highly able learner, for example, needs to feel valued in the classroom by teacher and peers alike. He or she needs to feel like a contributor to the classroom community. These students need to feel a sense of efficacy that stems from meeting a challenge that seemed at first beyond reach—and to experience the partnership of others in achieving new levels possibility. To the degree that these needs are met, gifted learners are likely to be well served at school.

The same can be said for the broad range of students. Each learner needs, among other things, a firm affinity with those who share the classroom, a clear sense of contribution to the good of the whole, and a continually evolving sense of self-efficacy.

It is first the job of the teacher to understand that learners bring to school fundamental needs and to acknowledge that there is an inescapable interaction between those needs and the child’s capacity to learn. Then the teacher can refine the skills necessary to understand how varied learners experience the common needs and to address the needs accordingly. Because each life crafts a particular way of experiencing the world, it is typically ill advised to generalize too much beyond the given of common human needs. It is not the case, for instance, that all (or even most) eighth graders experience common human needs in the same ways. Likewise, gifted learners are a varied lot and experience life through widely differing lenses.

That said, there are some questions worth asking as we try to understand how the experience of being highly able might affect the experiences and thus shape the needs of gifted kids. One way to think about the questions is to organize them around the key needs of belonging, contributing, and stretching.

Belonging
Among questions useful in thinking about the needs of highly able gifted students to belong to a group are the following.

- Is this a student who feels at ease with most agemates and who has a good ear for others?
- Is the student perceived as being different in a way that could feel lonely or alienating?
- Are the student’s ideas often readily accepted or dismissed as “way out”?
- Is there teacher time focused on the student in a way that sends a message that this student, like others, is worthy of the teacher’s time, interest, and investment?
- Is there room in the class agenda for the student to pursue particular interests?
- Is the student’s culture fully represented and acknowledged in the content, materials, working arrangements, and interactions of the class?
• If the student has dual exceptionalities, is there more emphasis on what he or she *can* do rather than areas of difficulty?

It’s easy to assume that if a student is bright, the student has it made. In fact, it’s possible that brightness is a kind of difference unwelcomed by agemates and dismissed by teachers as non-problematic. In addition, interactions between high ability, particular talents, gender, ethnicity, economic status, family stability, and a host of other variables can make it difficult to be oneself—and simultaneously appreciated.

An effective teacher for very bright learners may be one who affirms the student’s abilities as worthy, makes room for individuality to develop, and promotes an atmosphere in which uniqueness is desirable.

**Contributing**

Questions like the ones the following might be helpful in analyzing the degree to which a highly able learner feels like a valuable and valued contributor to the classroom community.

• Does the student have the skills both to listen and to share?
• Does the student have an ear for when to question and when to accept the ideas of others?
• Is there opportunity to have ideas tested and refined by intellectual peers as well as opportunity to assist students whose proficiencies are less well developed?
• Is the student taught by age peers in some areas while being a teacher to age peers in others?
• Do the student’s ideas and interests shape the direction of the class at times?

There is a difference between being a meaningful contributor to the continually evolving work and personality of a group and being only a provider of routine assistance. The former builds capacity and a sense of reality and balance. The latter sets up a student to develop a lopsided view of his or her place in the world as well as likely rejection by peers.

**Stretching**

Perhaps the most difficult basic need to address for gifted kids in today’s classroom is the need to build a sense of self-efficacy that comes only from achieving that which once seemed unachievable. Questions such as the following might guide our thinking about classrooms that genuinely challenge highly able students.

• Is there routinely work for the student to do that is a bit beyond *that* learner’s reach?
• Does the student frequently have to grapple with unknowns and tolerate ambiguity in the process?
• Is work more complex and engaging rather than just “more” of a time filler?
• Does the student routinely have to take intellectual risks?
• Does the teacher regularly pre-assess level of mastery of a topic as a unit begins?
• Is the student helped to assess his or her work in comparison with self as much or more than in comparison with others or with a norm?
• Is there regular attention to ensure that the student experiences, tolerates, and ultimately embraces challenge?
• Is there consistent support to ensure growth versus undue frustration?
• Is the goal of the teacher to help the student succeed at a new level of challenge?
• Is there a plan to help parents understand the key role of challenge in developing the student’s capacity?
• Is there opportunity for meaningful feedback from high level audiences?
• Does the student experience failure as a necessary part of discovery?
• Is the student commended for setting high standards rather than punished for imperfection?
• Does the student understand the difference between excellence and perfection?

Truth is, few very bright learners learn in school that effort and success are inseparable. They are more apt to be rewarded for outcomes derived from minimal investment. As a result, they too often become seekers of external recognition rather than realizing the satisfaction of learning itself.

(see TOMLINSON, page 24)
What the Research Says about Differentiation

Susan K. Johnsen
Sarah Feuerbacher

ISSUES IN DIFFERENTIATION

Students have varying amounts of knowledge about different topics, have different interests, learn at different rates, and use different strategies for acquiring new information. Few educators would argue that these individual differences do not exist in the classroom. Most disagreements, however, occur about how to tailor the instruction and the curriculum to adapt to these differences. This review will examine what the research says about the effects of “differentiation,” or adapting to individual differences in the classroom.

According to Carol Tomlinson (2001) “a differentiated classroom provides different avenues to acquiring content, to processing or making sense of ideas, and to developing products so that each student can learn “ (p. 1). Kaplan (2001) focuses on content differentiation by attending to the depth and complexity of specific curriculum standards. She describes characteristics of complexity as allowing students to examine interdisciplinary problems, issues, and concepts from different perspectives and to view events over time. The teacher may also provide more depth in the curriculum by focusing the students’ attention on details, the language of the discipline, patterns over time, the dynamic nature of knowledge, unanswered questions, rules, ethics, and big ideas. Tomlinson adds to this differentiation of content by describing these other characteristics: (a) a plan that addresses a range of learner needs, (b) adjustment of the nature of the assignment, (c) ongoing assessment, (d) multiple approaches to content, process, and product, (e) relevant and interesting experiences for each student, (f) the blend of whole-class, group, and individual instruction, and (g) collaboration between the teacher and the student. She identifies activities that might occur in a classroom that offers differentiation: tiered assignments, learning contracts, flexible grouping, mentorships and apprenticeships, varying questions, learning centers, curriculum compacting, interest centers or groups, and independent projects.

Johnsen, Haensly, Ryser, and Ford (2002) present another way of looking at differentiation by focusing on ways that teachers may differentiate instructional practices by adapting to specific learner differences in the areas of content, rate, preference and environment. They emphasize the use of student interest in designing conceptually-based curriculum, formative assessment in creating flexible groups, student choice in activities, and collaboration with learning centers, within and outside the classroom. In summary, when researchers describe differentiation, they use a broad framework that might focus primarily on the curriculum, on the management and/or organization of the classroom, on instructional strategies, and/or on classroom practices that match variations in learner differences.

Using this broad framework for curriculum dif-
ISSUES IN DIFFERENTIATION

This review examined articles published in *Gifted Child Quarterly, Gifted Child International, Journal for the Education of the Gifted, The Journal of Secondary Gifted Education*, and *Roeper Review* during the past ten years. To be included, the article needed to address the effects of differentiation on gifted and talented students in grades K-12 and be empirical or data-based. Articles were excluded if they were merely descriptive. In addition, articles that addressed the effects of grouping, including acceleration, were omitted because of a previous review in *Tempo* (see Johnsen & Mitchell [2002]).

What the research says about grouping gifted children. *Tempo*, 22[1], 24-29.

These selection criteria identified only 18 articles, less than two for each publication year. Of these, six included high school samples, one included middle school, and 12 included elementary (one study included middle and elementary students). Twelve of the studies used a pre/post design, two described the results, two reported responses to questionnaires, one used a case study approach, and one used multiple baselines.

The most frequent differentiation strategy reported was problem-based learning, problem solving, or creative problem solving. Using a pre/post research design, these studies showed that students had greater understanding of the problem (Dods, 1997); had equal understanding of the content when compared to more traditional approaches (Gallagher & Stepien, 1996); had greater spatial and storytelling abilities (Maker, Rogers, Nielson, & Bauerle, 1996); showed gains in creative problem solving (Schack, 1993), and showed gains in problem finding, substantiating emotional positions with reason, and applying problem solving to real-world problem solving (Stepien, Gallagher, & Workman, 1993). Examining the effects of creative problem solving on service learning, Terry (2003) found through interviews that the students felt more empowered, learned more about the community, and were more committed. This apparent variety of results is dependent on the types of problems and the assessments used to measure the effects.

Three of the studies reported the effects of mentoring programs with high school students. Using a follow up questionnaire, Davalos and Haensly (1997) found that participants believed the experiences contributed to their achievements, views of themselves, their personal growth, and the selection of a particular vocation or career. Similarly, Reilly and Welch (1994/1995) also found that young women felt that mentoring helped them identify a career and gave them more confidence in their abilities. They also learned about the importance of networks and how to interact with other professionals. Combining mentoring with family outreach and curriculum modifications, Moon and Callahan (2001) reported that the students gained in their problem solving abilities, creativity, social skills and were more frequently identified for the gifted program. A related museum outreach program that focused on the development of careers used practicing professionals. Pre- and post questionnaires indicated that students were more interested in being a scientist, had less stereotyped ideas about a scientist’s work, and gained content knowledge.

Three of the studies examined the effects of the William and Mary curriculum units (two in language arts and one in science), which stressed advanced content, were organized around major concepts, and were interdisciplinary (see Van Tassel Baska references). Using a pre/post design, all of these studies reported gains in specific skills that were addressed in the unit.

The effects of particular models in gifted education were also examined in three of the studies. Using center activities and topic choice, Hispanic elementary students who participated in the Autonomous Learner Model improved ITBS scores, particularly in reading and language (Uresti, Goertz, & Bernal, 2002). In studying the effectiveness of Renzulli’s model in elementary school, Hébert (1993) interviewed nine students and found that their Type III activities influenced their post-secondary plans and a desire for more creative outlets. Friedman and Lee (1996) compared the effects of three different models: Enrichment Triad Model, The Multiple Tal-
ent Model, and the Cognitive-Affective Interaction Model. They found that the Cognitive-Affective Interaction Model demonstrated the greatest gains in higher cognitive levels with teacher questions eliciting more complex levels of student responses.

The remaining two studies looked at the effects of particular strategies that are used to differentiate instruction with elementary students: curriculum compacting and open-ended tasks. In her ethnographic study of open-ended tasks, Hertzog (1998) found that even when the product involved limited student choices, students differentiated their responses; however, when choices were provided within the content domain, the greatest differences in students’ responses occurred. In terms of curriculum compacting, Reis and her colleagues (1998) did not find any significant differences in achievement but noted that the scores were not affected even when 40 to 50% of the content was replaced.

Curriculum differentiation is the centerpiece of education for gifted students. It is surprising how few studies address this important feature. Problem-based learning, mentoring, and carefully designed concept-based curriculum units do appear to have some support by showing effects on closely aligned assessments. Whether or not these same effects would exist across grade levels, with more independent measures such as nationally or state mandated achievement tests, or with future performance is unknown. Very few studies examined the effects of models and strategies that are frequently used or advocated for use in gifted education such as curriculum compacting, Renzulli’s Enrichment Triad, and Betts’ Autonomous Learner Model. No studies examined the effects of other differentiation strategies such as tiered assignments, learning contracts, interest groups, and/or learning centers. University researchers in gifted education need to develop research partnerships with teachers in examining the effects of many classroom practices used to differentiate instruction that are advocated in gifted education.


Based on data from his 22-year longitudinal study of 200 creative children, Terman (1984) concluded that every successful person has a mentor who may have changed the course of his or her life. This study focused on the effects of a high school student independent study/mentorship class. In this course, students were able to explore an area of special interest, usually related to a potential career, through a year-long investigation of a research topic. The research was guided by a community volunteer mentor with expertise in that particular field and a teacher for the gifted and talented. The class was arranged as a two-hour block so that students could leave campus to meet with mentors. They also attended class as a group with their GT instructors. Each spring the high school students prepared presentations to report the results of their research to audiences with common interests. The mentor, the GT teacher, and the students formally evaluated student presentations. To determine the long-term benefits of the program, a questionnaire was mailed to 354 former GT students who participated in the Independent Study/Mentorship Program at six high schools during the years 1989-1994. Ninety students responded. While the sample was biased, students most often agreed or strongly agreed with the survey items. The students reported that the mentorship program was memorable (84% agreed or strongly agreed); affected extracurricular activities and accomplishments (64%); contributed to overall academic achievements (64%); helped them select a particular vocation or career (74%); personal view of self (77%); and personal growth and development (64%). The authors conclude, “these programs are a powerful, economically beneficial option for gifted youth, an option that has long lasting effects” (p. 207).

This study compared the effectiveness of problem-based learning, traditional lecture, and a combination of problem-based learning and traditional lecture to promote understanding and retention of the principle content of biochemistry taught at a school for gifted students. A pre and post self-evaluation of student understanding, a measure of depth of understanding, and a questionnaire designed to determine student satisfaction were used to collect qualitative and quantitative data. The results showed that lecture tended to widen the content coverage, while understanding and retention was promoted by problem-based learning. The results implied the need to design curriculum in order to provide a balance between content coverage and depth of understanding.


This study examined three instructional models: the Enrichment Triad Model (Renzulli & Reis, 1986), the Multiple Talent Model (Taylor, 1986), and the Cognitive-Affective Interaction Model (Williams, 1986). These models were field-tested in inclusive, general-education classrooms in rural, low-income, and/or ethnically diverse communities. The researchers analyzed how certain elements of the model affected the cognitive complexity of the classroom environment and student involvement in schoolwork. Using a multiple-baseline-across-settings design, the researchers interviewed the participants and observed in teachers’ classrooms. They found that a strong positive relationship existed between teacher questions and student responses—the higher cognitive level of the teacher question elicited higher cognitive levels of student responses. The students in classrooms using the Cognitive-Affective Interaction Model demonstrated the greatest gains in higher cognitive levels.


This study compared high school students’ scores on a multiple-choice standardized tested after traditional or experimental instruction in an American studies course. The primary research question was whether a curricular approach emphasizing higher order thinking skills results in lower content acquisition. Subjects in the study were sophomores at a state-supported residential school for students talented in mathematics and science. In total, there were 167 subjects, 93 male and 74 female. There were four instructors teaching a total of eight sections of American studies. The instructor for the experimental group taught two sections using problem-based learning. The problem-based learning approach to American studies used problems at intermittent “post-holes” throughout the year. Approximately 50% of the year were devoted to these problems. The objective was to have students resolve problems using data and perspectives surrounding each case. Comparison classrooms used traditional textbook readings and discussions with little or no problem solving activities integrated into instruction. No significant differences on the post-test between the problem-based learning classes and the more traditional comparison classes were reported. Findings support the claim that teaching a humanities course for depth of understanding with a problem-based approach does not sacrifice retention of facts.

This research examined the question: what is the long-term impact of creative productivity experiences in elementary school? Using nine case studies of students who had participated in the Renzulli Enrichment Triad Model in grades four through six, the author conducted in-depth, open-ended, tape-recorded interviews in their homes during the spring of their high school senior year. Products and available management plans provided additional information. The following themes emerged after analyzing the interviews, products, and plans: Type III interests affect post-secondary plans; a desire for creative outlets continues in high school; a decrease in Type III activities in junior high occurs; earlier Type II activities provide training for later productivity; and non-intellectual characteristics such as creativity and task commitment remain constant.


In this ethnographic study, the researcher focused on how and in what ways the responses to open-ended activities of children identified as gifted differed from responses of children who were not identified as gifted in one third-grade and one fourth-grade heterogeneously grouped classrooms. “Open-ended” activities refer specifically to those with multiple responses rather than one correct answer. Data sources included observations over the course of one academic year, interviews with teachers and students, learning style and interest assessment instruments, and documents related to over 33 open-ended activities. The author found that the two teachers in the study evaluated students’ responses relative to their expectations of the students, in relationship to the students’ abilities. Frequently, students pursued the same knowledge in different ways, but when choices were provided within the content domain, greatest differences in responses occurred. The author found that differentiation of learner responses occurred even when the product involved limited student choices and was not “open.”


This study focused on the levels of implementation of the DISCOVER approach by comparing two teachers problem-solving behaviors, number of students identified as gifted, problem solving by gender, and problem solving by students’ language of preference. The classrooms selected were composed of highly minority populations. The level of DISCOVER implementation was determined by combining information from several sources, such as number of years in the project, number of hours involved in staff development related to project goals, results of teacher-belief interviews, and classroom observations. The two types of change measured to assess the effectiveness of the classroom instruction were student growth in problem solving and changes in the numbers of students identified as gifted, as observed by the DISCOVER assessment process of the following: behaviors and characteristics of products, general problem-solving processes, numerical scores for accuracy and use of strategies, and an overall rating of the effectiveness of each child’s problem-solving processes. The results showed that the two activities in which children’s problem-solving behaviors changed most dramatically were in spatial abilities and storytelling, and no significant relationships were found between the teacher’s level of implementation and students' levels of problem-solving ability in tangrams, math, or writing. The researchers commented on the value of the DISCOVER approach in general classrooms with a high proportion of Spanish-speaking or bilingual children.


This study examined a museum program and its ef-
fected on high achieving fourth and fifth graders. The museum program consisted of eight school-based sessions, held twice weekly, that allowed students to participate in activities that were similar to the scientific processes employed by museum scientists and incorporated actual museum specimens and artifacts. On the ninth session occurred in the museum where students met the scientists and visited areas normally closed to the public. Pre- and post questionnaires indicated that students were more interested in being a scientist, had less stereotyped ideas about a scientist’s work, and gained content knowledge, particularly in areas that involved hands-on activities with insects and arthropods.


This study focused on longitudinal interventions of mentoring, parental involvement, and multicultural curricula an academic achievement of 273 elementary students from low socioeconomic environments who participated in the Support to Affirm Rising Talent project. The Iowa Test of Basic Skills was administered multiple times over the course of two years in order to assess changes in student achievement. The results suggested that the interventions had no statistically significant effect on student achievement in any grade. However, at-risk students were on grade level by the end of the project. In addition, students who participated in the project gained in their problem solving abilities, creativity, and social skills, and as a result were referred and placed more often than students who did not receive the project’s benefits. Implications of these results suggested that in order for high-risk, high-potential students to be identified into a district’s gifted program, educators must develop images of these learners beyond the classroom by creating supportive environments and involving parents in order to nurture the children in their challenging circumstances.


The Mentor Connection is a community-based learning experience for 11th and 12th grade girls enrolled in suburban high schools in the Minneapolis-St. Paul area. Students who participate complete an application and must show evidence of perseverance, ability, creativity, and have an identified area of study. This study reported the reactions of 162 former students to their mentoring experience. The participants reported these effects: the identification of a career; more confidence in their professional and personal abilities; an increase in ability to interact with other professionals; an understanding of the importance of networks; a relationship to their current career choice; and an overall enthusiasm for the high school experience.


This study examined the effects of curriculum compacting on the achievement test scores of over 300 American gifted elementary school students. Teachers from three treatment and control groups used curriculum compacting for selected students to eliminate material that they have already mastered and instead replaced it with more appropriate learning activities. The Classroom Practices Questionnaire and the Compactor Form were used to assess classroom teachers’ practices related to the curriculum compacting procedure. Pre and post student achievement was assessed by the Iowa Test of Basic Skills. While no significant differences were found in student performance on the ITBS between experimental and control groups, the authors did note that the scores did not decline even when 40 to 50% of the content was replaced with material not within the same content area.

This study examined the effects of a creative problem-solving curriculum on students of varying ability. Nearly 300 middle school students from six schools who were identified as either gifted, honors, or average composed the sample of participants. Teachers rated treatment and comparison students’ creativity, ability to work in groups, and potential giftedness of all students. Treatment students showed significant gains in problem-solving ability compared to comparison students. There were no significant differences among ability levels, which implied that all students can benefit from process skills taught in creative problem solving. The researchers noted that teachers tended to see students as gifted if they were highly successful and learned quickly and easily. Because many of the treatment students initially struggled with a difficult task, dissonance was created in the minds of the teachers regarding gifted students abilities.


This study compared two different applications of problem-based learning at the Illinois Mathematics and Science Academy. One application is an interdisciplinary senior elective course entitled Science, Society and the Future; the other is a more traditional sophomore required course on American Studies. In the former case, the students are presented with modern dilemmas resulting in advances in science and technology (“Possible Health Effects of Extremely Low Frequency Radiation,” “Biomedical Issues in Life, Death, and Personhood,” and “Designing Health Care Systems for the 21st Century”). The more traditional course allows students to experience the decision making behind historical problems that stimulated the development of the United States. The researchers found that students increased their ability to problem find, to substantiate their emotional positions with reason, and to have a greater appreciation for the nuances of “real-world problem solving.”


The purpose of this study was to explore the experiences of gifted adolescents who were involved in a service learning project that focused on encouraging more people to frequent the downtown area of a small community in Georgia. Using a qualitative design, six students were chosen for individual interviews. In addition to these interviews, the researcher also conducted interviews with parents of three of the students, the principal and two community members. Observations of classes and documents were also collected for data analysis. The teacher who coordinated the project structured each class around the cognitive apprenticeship model (i.e., scaffolding, modeling, coaching, and fading) and incorporated the creative problem solving process and reflections. The participating students reported these effects. They felt more empowered to make decisions. They learned more about their community and became committed to projects outside the school campus. And they were able to celebrate their accomplishments by winning a berth to the international competition at the University of Michigan after the first year of the project.


The purpose of this study was to try and meet the cognitive, emotional, and social needs of young, culturally and linguistically different children in an inclu-
ISSUES IN DIFFERENTIATION

The sample consisted of 24 low socioeconomic first grade Hispanic students (12 were native Spanish speakers learning English and 12 were English Spanish bilingual students). None of the students had been identified as gifted at the beginning of the year, but the class was one where English was taught as a second language. The researchers used the Autonomous Learner Model's (ALM) three dimensions of Orientation to the Center, Individual Development, and Enrichment Activities. A rotating schedule for students to run their own center activities, as well as a topic selected for individual enrichment allowed curriculum to be differentiated for each student. The class was exposed to the ALM for a twenty-four week period. Afterwards, the Iowa Test of Basic Skills or the Spanish Assessment of Basic Education—Second Edition was administered (12 students took the ITBS, and 12 took the SABE-2). All scores improved from previous test scores; students who took the ITBS scored significantly higher in reading and language than in mathematics, and students who took the SABE scored higher in reading in Spanish than in language and mathematics. The authors say, “There is, of course, no way to ensure that these good mean scores were due directly to the abbreviated implementation of the model... What we believe that we know ‘for sure’ is that the atmosphere in [the class] changed radically during the last twenty-four weeks of school, when she began using centers and individualized projects and instruction, and that the parents noticed changes in their children’s behaviors and attitudes as well.” They concluded that the self-directed learning and center activities seemed to cultivate the potential giftedness in some of the children so they could be identified early on in their education to receive full advantage of the school’s gifted resources and services.


The purpose of this study was to assess student growth on integrated science process skills after being taught a 20-36 hour science unit called “Acid, Acid Everywhere.” The curriculum uses the national science standards and stresses advanced content, high level process and products, and a concept dimension. The sample consisted of 1,471 gifted students from self-contained gifted, pull-out, heterogeneous with gifted clusters, and heterogeneous classrooms. The Diet Cola Test measured the students’ outcome by providing open-ended test cues for students to demonstrate their ability to design experiments. In addition, a teacher questionnaire asked about which curriculum materials were appropriate, usable, and effective with the students. Results indicated significant gains in science skills for gifted students who were involved in the science unit compared to the students who did not participate in the unit. The findings support the use of curriculum designed specifically for gifted students, in this case the science unit, to enhance understanding of a subject and develop integrated process skills. The researchers conclude that an interdisciplinary approach to curriculum development can yield powerful effects on student learning through individual curricular components such as demonstrated here with science research skill development.


This study examined the effects of a 40-hour language arts curriculum unit on elementary students in grades four through six in selected school districts. The Integrated Curriculum Model incorporated these goals: “to develop literary analysis and interpreta-
tion skills, to develop persuasive writing skills, and to develop linguistic competency” (p. 464). The experimental groups improved significantly in all three dimensions of the performance-based assessments: writing, grammar, and syntactic forms and functions. The authors conclude that more targeted curriculum intervention that is aligned with specific assessments needs to occur in classrooms for gifted students. They also reported that the abstract concepts and ideas in the unit may be difficult for average learners at this grade level.


This study was designed to measure the effects of a standards-based language arts curriculum with gifted learners at primary, intermediate, and middle school levels. The Integrated Curriculum Model (ICM) seeks to enhance learning through an approach to learning which integrates multiple aspects of language study, primarily literature and writing. The ICM includes the following: using advanced literature, embedding a reasoning model into the teaching of language arts, requiring a high-quality student product, and teaching around major concepts. In addition each unit emphasizes interdisciplinary connections and involves students in research. The sample included 2,189 identified gifted learners in grades 2 through 8 representing 18 school districts in 10 states. Students were administered pre- and post-tests measuring literary analysis and writing skills. Students were assigned to experimental and comparison groups with the experimental group receiving the standards-based integrated curriculum. Data on treatment effects were gathered over a five-year period and suggested that the integrated units produced significant and important gains in both literature and writing based on performance-based assessments. The treatment was equally effective with economically disadvantaged as well as economically advantaged students.

References


Susan Johnsen is Associate Dean of Scholarship and Professional Development at Baylor University. Editor of Gifted Child Today, she was the principal investigator of Project Mustard Seed. She is author of four tests that are used in identifying gifted students: Test of Nonverbal Intelligence (TONI-2), Screening Assessment for Gifted Students (SAGES), Screening Assessment for Gifted Students—Primary Version (SAGES-P), and Test of Mathematical Abilities for Gifted Students. She is a past President of the Texas Association for the Gifted and Talented.

Sarah Feuerbacher, M.S.W., is a graduate assistant and doctoral student in the Department of Educational Psychology at Baylor University.
(from KAPLAN, page 1)

The appropriate use of the term “differentiation” is dependent on its relationship to what aspect of teaching and learning is being described. Differentiation can be relevant to students, the curriculum, instruction, and/or the learning environment. The explicit contextual reference of the term facilitates understanding and clarifies the application of the term. The following chart reflects the Differential Definitions of Differentiation.

<table>
<thead>
<tr>
<th>Context</th>
<th>Questions</th>
<th>Consideration</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>WHO are the learners with respect to the needs, interests, and abilities they manifest and that dictate the modifications in curriculum, instruction, and learning environment necessary to support their learning?</td>
<td>Differentiation as related to students recognizes differences in potential and the obligation to translate potential into performance by the intervention or modification of appropriate curriculum, instruction, and learning environment or setting.</td>
<td>Recognizing that students represent both within and across group differences that demand attention in what and how they are taught.</td>
</tr>
<tr>
<td>Curriculum</td>
<td>WHAT modifications can be made to the standard or core curriculum to accommodate the needs, interests, and abilities of gifted learners?</td>
<td>Differentiation of the standard is defined by modifying curricular elements: the nature of the thinking skills, the focus of the content, the types of resources used, and the product required.</td>
<td>Given the standard related to identifying figurative and literal patterns of speech in fiction, the students will also locate the use of figurative and literal speech patterns in political campaign literature and advertisements. They will prove with evidence how contemporary trends affect the form and use of figurative and literal language patterns.</td>
</tr>
<tr>
<td>Instruction</td>
<td>HOW can teaching and learning be best affected in order to meet the needs, interests, and abilities of gifted students?</td>
<td>Differentiation of instruction requires selection from a range of teaching strategies. The strategy that best matches the instructional needs, interests, and abilities of learners is the one selected to differentiate instruction</td>
<td>Recognizing the need for some gifted students to learn from abstract to the concrete, an inquiry teaching strategy as opposed to the Direct Learning Instructional model was selected.</td>
</tr>
<tr>
<td>Learning Environment</td>
<td>WHICH type of setting or structure would best provide for the learning needs, interests, and abilities of gifted students?</td>
<td>Differentiation of learning environment requires that teachers structure the setting so that it is receptive to the assimilation and mastery of the curriculum and instruction that supports the learning of the curriculum.</td>
<td>Recognizing the type of grouping structure that best facilitates the social and personal learning needs of the students: whole vs. small group structure; homogeneous vs. heterogeneous.</td>
</tr>
</tbody>
</table>
The concept of differentiation cannot be a “catchall” term. Without specificity, the term obliterates rather than enhances the education of students. Precision of language also is an indicator of levels of professionalism. In attempting to be more precise in both describing and applying differentiation, a matrix was constructed and used to guide and define professional decision-making about the type of differentiation most responsive to gifted learners. The question: “How can differentiation be implemented for these students?” is directed using the matrix by asking: “What is to be differentiated: student, curriculum, instruction, or learning environment?” The matrix represents an opportunity for decisions about the emphasis to be placed on differentiation and the order of activities to be conducted to accomplish different teaching and learning.

The judicious utilization of the term differentiation may be one of the strongest advocacy efforts launched on behalf of gifted education.

Example of Emphasis:

<table>
<thead>
<tr>
<th>What is to be differentiated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Example of Order of Development:

<table>
<thead>
<tr>
<th>What is to be differentiated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

Sandra Kaplan is Associate Clinical Professor for Learning and Instruction at the University of Southern California. She has served as the lead consultant for the Carnegie Middle Schools Project, Texas Education Agency, from 1993 to present. Dr. Kaplan is a past president of the National Association for Gifted Children (NAGC) of which she has been a member of since 1982. She is also a past president of the California Association for the Gifted. One of the world’s foremost authorities in the field of gifted education, she has made presentations at the World Congress on Gifted, NAGC, and TAGT conferences. Recent honors include the Award of Achievement from the California Association for the Gifted and the Distinguished Service Award from NAGC.
talents both collectively and individually.

Further, singularly phenomenal talents exist and showcase their gifts within the orchestra and ensemble performances but blend into these groups before and after their scheduled solos. The work of the director further enhances the talents of these students although many come into the programs with highly developed interest and talents due to parental guidance and encouragement. However, some come with little or no awareness of their talents until the director opens up the world of music for them.

Whether or not the director of the orchestra has an assistant, the responsibility for identifying talent then organizing and delivering differentiated instruction for the varied levels of talents falls on the shoulders of the director. The director formulates plans based upon differentiation principles similar to those of the academic classroom that are the focus of this issue.

Does differentiation happen everyday for every student? The answer of course is no. What does occur is a differentiation plan that assesses and reassesses student readiness, interests, and skill acquisition and adjusts to the individual and group characteristics. Within that plan, the director groups and regroups, focuses on the individual student’s need for either remediation or acceleration, uses technology in assessment for chair placement or to review performances and practices, offers tiered assignments, provides small and large group instruction, and assigns independent study as instructional and management strategies. Thus, the director ensures that the orchestra and its ensembles has achieved not only, in current legislative terms, “no child left behind,” but also, as added by B.K. Dean, “no child marking time.” Perhaps the final differentiation that often distinguishes the small group and individual interaction is passion for the field. For those who share an intense passion for music, the director plans time and opportunities for the students to continually improve upon their extraordinary talents and to realize what those talents may mean within their lives and the lives of others.

Differentiation occurs seamlessly in the fine arts environment. Students perform at various levels without all the hoopla and resistance that occurs within core content areas. As suggested in the Texas State Plan for the Education of the Gifted and Talented, the extraordinary talent learns and performs individually as well as with their talented peers and with other students.

Within traditional academic courses, the content area teacher assumes the role of director of the talents assigned to them. Whether or not classrooms produce such well-orchestrated performances within the respective disciplines depends upon the support given to the individual teacher to develop differentiated plans similar to the support given to competitive campus offerings and upon the devotion of the teachers to pass along their passions. Fortunately for students the academic discipline director’s i.e. the teacher’s passion is the most critical factor affecting differentiation whether or not they receive support for their efforts. The challenge then is to make differentiation a passion for the individual teacher.
too it could be seen as highly relevant at all grade levels. Developmental differences would be handled through the choice of problems, tasks, and texts. Such a goal cluster should also be filtered through the state standards in each discipline and linked to advanced performance on state assessments. Such a correspondence creates a stronger “buy in” to the overall process by district decision-makers.

A second example of a goal set that could be adopted by a school district for curriculum framework and alignment purposes might be the following:

**Goal:** To develop problem-finding and problem-solving abilities in gifted students at advanced levels.

**Outcomes:** Students will be able to:

- Identify problems within given areas of study
- Provide examples and illustrations of such problems
- Create alternative solutions to the problems
- Communicate the plan to a real world audience

This goal is different from the first in that it may not be bounded by a specific content taught in school but rather extends student thinking into the larger world, requiring that they study a subject deeply and well enough to discern problems which then become the basis of their critical and creative inquiry approach. Even though this goal could be vested outside the standards, it also could find its way inside through a linkage to investigation processes in science and research skills in language arts. Thus alignment to standards can be satisfied, yet the curriculum framework is extended beyond the standards in overall conceptualization and application.

Most gifted programs need only 4 or 5 such goal clusters to create a viable curriculum framework within which they then can begin to select materials that will assist them in teaching to the desired outcomes.

**Materials selection**

Once a curriculum framework has been consensually developed and approved, it should provide the guidance necessary for selecting appropriate materials. Districts might develop a matrix to complete in assuring themselves that goals and outcomes are being addressed through the curriculum materials being chosen. Such a matrix might look like table 1, organized by a sample advanced content learning goal, subject areas, and grade level clusters (see Table 1, page 22).

By developing such a matrix, a school district can see readily where gaps exist in materials and can begin to locate appropriate ones. At the same time, the chart serves as one representation of a scope and sequence emphasis within the program, suggesting that task demands become more rigorous as the grade levels progress.

It is useful to appoint a materials selection committee who can review materials in each subject area, with an eye to principles of differentiation and exemplary content. The following synthesized chart provides a few guiding questions that should influence the process:

1. Does the material address the goals and outcomes of the curriculum framework?
2. Is the material differentiated for the gifted in respect to advancement, complexity, and creativity?
3. Is the material well-designed in respect to emphasizing research-based strategies like concept mapping, metacognition, and articulation of thinking?
4. Is the material aligned with standards in the relevant subject area or easy to align?
Table 1: A Matrix of a Sample Curriculum Goal by Subject and Grade Level Cluster

Goal: To develop advanced knowledge, skills and habits of mind to advanced levels in relevant areas of the curriculum.

<table>
<thead>
<tr>
<th>Subject</th>
<th>K-3</th>
<th>4-6</th>
<th>7-8</th>
<th>9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>• Everyday Math • TIMS (Teaching Integrated Math and Science) • TOPS (Techniques of Problem Solving) • NCTM Navigating Through...Series</td>
<td>• Everyday Math • TIMS (Teaching Integrated Math and Science) • TOPS (Techniques of Problem Solving) • NCTM Navigating Through...Series</td>
<td>• Math the Human Endeavor • TIMS (Teaching Integrated Math and Science) • TOPS (Techniques of Problem Solving) • NCTM Navigating Through...Series</td>
<td>• Discovering Geometry: An Inductive Approach • TOPS (Techniques of Problem Solving) • NCTM Navigating Through...Series • Twists and Turns and Tangles in Math and Physics • AP Syllabi in Calculus and Probability &amp; Statistics</td>
</tr>
<tr>
<td>Social Studies</td>
<td>• College of William and Mary Social Studies Units • Touchpebbles</td>
<td>• College of William and Mary Social Studies Units • MACOS (Man a Course of Study) • Voyage of the Mimi</td>
<td>• College of William and Mary Social Studies Units • Contemporary Perspectives (Greenhaven Press)</td>
<td>• College of William and Mary Social Studies Units • PBLISS (Problem Based Learning in Social Studies) by S. Gallagher • Contemporary Perspectives (Greenhaven Press) • AP Syllabi in American History, Psychology, Economics, European History</td>
</tr>
<tr>
<td>Language Arts</td>
<td>• College of William and Mary Language Arts Units • College of William and Mary Navigator Novel Study Guides • Jr. Great Books</td>
<td>• College of William and Mary Language Arts Units • College of William and Mary Navigator Novel Study Guides • Philosophy for Children • Jr. Great Books</td>
<td>• College of William and Mary Language Arts Units • College of William and Mary Navigator Novel Study Guides • Jr. Great Books</td>
<td>• College of William and Mary Language Arts Units • College of William and Mary Navigator Novel Study Guides • Conversations: Readings for Writing • AP/IB Syllabi</td>
</tr>
<tr>
<td>Science</td>
<td>• College of William and Mary PBL Science Units • FOSS (Full Option Science System) • GEMS (Great Explorations in Math and Science) • Insights: A Hands-on Elementary Science Curriculum • Science for Life and Living</td>
<td>• College of William and Mary PBL Science Units • College of William and Mary Navigator Novel Study Guides • FAST (Foundational Approaches in Science Teaching) • Middle School Life Science</td>
<td>• College of William and Mary PBL Science Units • College of William and Mary PBL Science Units • AP/IB Syllabi</td>
<td>• Biological Sciences Curriculum Study (BSCS) • Modeling Instruction in High School Physics • AP/IB Syllabi</td>
</tr>
</tbody>
</table>
A more complete review form may be found in another publication (VanTassel-Baska & Little, 2003). The materials selection committee then may rate each material reviewed and make decisions for use based on the data collected.

**Focused teacher development on instructional models**

The professional development of teachers then is also guided by this overall process. Teachers are provided with the framework and the ways it has been interpreted in the materials selected for the program. They then are instructed on the materials to be used in the program, thus reducing the inference-making they must do when confronted with only strategy sessions as preparation. Differentiation is already embedded in the process of training, not something to be addressed piecemeal.

For example, teachers are provided a template for question-asking that moves from lower order to higher order questions.

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory cognition</td>
<td>What is the nuclear threat in North Korea?</td>
</tr>
<tr>
<td>Convergent</td>
<td>Why has a problem evolved there?</td>
</tr>
<tr>
<td>Divergent</td>
<td>If the communists had won the Korean war how might the situation be different today?</td>
</tr>
<tr>
<td>Evaluative</td>
<td>Which is better: test band treaties that are violated or no test band treaties in place?</td>
</tr>
</tbody>
</table>

They then create a set of questions based on a real world event that reflects the application of the template. Finally, they are shown how this template is embedded in existing differentiated lesson plans. Teacher development then can focus on a few strong teaching-learning inquiry-based models that enhance the power of the differentiated materials in the classroom.

The initial goal of such teacher development is to enhance teaching behaviors that accommodate individual differences, teach critical and creative thinking, and enhance problem-solving and research skills. The ultimate goal of such teacher development is enhanced gifted student performance in the classroom as judged by those charged with monitoring and evaluating the program and the teachers.

Professional development on program materials must be on-going, with no fewer than three sessions a year devoted to this emphasis. Learning to use inquiry techniques effectively is a lifelong skill, not one learned readily in a one-hour workshop. Coordinators of programs must be vigilant coaches in ensuring that teachers of the gifted in all settings (i.e., self-contained, pull-out, cluster) are developing and refining these skills.

**Assessment of learning**

If strong materials have been selected based on a strong and appropriate curriculum framework, then assessing gifted student learning will be much easier. Many of the materials recommended already include assessments that are performance-based and highly appropriate for use with this population. Some can be used pre-post while others are “post chapter or unit” in structure. Holding gifted students accountable for high level learning is an essential part of appropriate curriculum differentiation too.

Portfolio assessment on key dimensions of the learning goals and outcomes is another way to provide a more individualized assessment process for gifted students (VanTassel-Baska, 2002). Using a time-series approach, teachers may ask students to include sample
work that illustrates advanced thinking and problem-solving in September, November, and January, for example. Such work then can be assessed, using an appropriate rubric design and shared with relevant audiences to suggest the level of gifted student performance and the growth pattern over time.

**Conclusion**

Differentiation of curriculum for the gifted then is dependent on a design system that begins with differentiated goals and outcomes and proceeds through differentiated materials selection to differentiated instructional delivery to differentiated assessment. It is not every teacher creating differentiated curriculum in the moment. It is rather a systematic approach to thoughtfully designing effective student experiences at several levels of analysis—district-wide, school, and classroom-based. As a field, we have come too far to go back to a process that is part of our mythology, not our future growth and development.

**References**


Joyce VanTassel-Baska is the Jody and Layton Smith Professor of Education and the Executive Director, Center for Gifted Education at the College of William and Mary. Dr. VanTassel-Baska is also editor, Gifted and Talented International, the research journal of the World Council on the Gifted and Talented.

(from TOMLINSON, page 8)

**Becoming a Student of Students**

Meeting the needs of high ability learners in heterogeneous classrooms (and, in fact, in any classroom) begins with understanding ways in which these learners are both like and unlike other students—and one another. It moves on as we accept and teach according to the premise that every child needs the full partnership of teachers to build a life. It comes to fruition as we become students of the particular ways in which each learner in helping us understand how they experience common human needs such as, belonging, contributing, and stretching.

Carol Ann Tomlinson is Professor of Educational Leadership, Foundations, and Policy at the University of Virginia’s Curry School of Education, and a researcher for the National Research Center on the Gifted and Talented. She is Past President of the National Association for Gifted Children and a coauthor of *The Parallel Curriculum.*

Few titles have had as distinguished a service record as the predecessor of this current book. The original, Identification of Gifted/Talented Students in Texas, was published by the Texas Association for the Gifted and Talented in 1990 and was invaluable to the teachers and G/T coordinators in the state in developing defensible identification policies. But time passes, populations grow more diverse, the law changes, and identification needs are different. Dr. Susan Johnsen (see biographical information, page 17), one of the authors of the original text, accepted the task of a much needed revision. The result is much more than a revision or update; the new title is national in scope (while still addressing the specific needs of Texas schools), is research-based, and covers all aspects of the identification process. The text is “designed for practicing professionals—teachers, counselors, psychologists, and administrators—who must make decisions daily about identifying and serving gifted children” (vii).

In Chapter One, which concerns definitions, models and characteristics of gifted children, focuses on the developmental models of François Gagné and Abraham Tannebaum. This is followed by in-depth lists of characteristics of a number of defined types of gifted individuals, especially the hard-to-find students.

The matter of qualitative and quantitative approaches to identification are extensively covered by Gail Ryser in Chapter Two. While explaining the importance and uses of such qualitative measures as portfolios, interviews, and observations, Ryser also covers important quantitative instruments, including norm- and criterion-referenced measures, achievement, aptitude, and intelligence tests. The issues of validity, reliability, and other technical qualities are discussed.

The problems of developing and implementing a culturally fair identification procedure is addressed in Chapter Three. Barriers to minority student identification are discussed along with strategies for overcoming those barriers.

Of particular value to districts making changes to their identification procedures is Chapter Four, in which Jennifer Jolly and Jennifer Robins Hall provide technical information and reviews of more than 40 assessment instruments currently in use for identifying gifted students. Contact information for reaching publishers of testing materials is also provided.

Chapter Five, “Making Decisions about Placement,” reviews the importance of using multiple measures, and each phase of the identification process is described.

The final chapter covers the components of the evaluation process and provides a strategy for evaluating the identification process as well as other aspects of the gifted and talented program.

This title should be in the hands of everyone involved in the identification of gifted learners. Dr. Johnsen and her coauthors have done a great service to gifted learners everywhere.
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... from the TAGT Coordinator's Division

Dear Gifted Advocate,

One of our struggles as coordinators throughout the state is providing quality training in Gifted Education. Many coordinators are responsible for providing or procuring presenters capable of offering an exceptional 30-hour training or updates to their district or campus staff. Texas is full of extremely qualified professionals in the field of gifted and talented education however, many of these qualified professionals are only known in a limited geographic area due the vast expanse of our state.

It has been suggested that the TAGT Coordinators' Division secure a list of qualified trainers and/or presenters to share with all coordinators throughout the state. We would like for coordinators to send in names of quality people that may be called upon throughout the state for training in the field of gifted education.

This list will be disseminated via the TAGT Coordinators' Division Website in the near future. If you wish to be placed on this list, please complete the following form and return it to:
Lynne DeLeon
3344 Freeport
El Paso, TX 79935

Name: ____________________________________________
Address: ____________________________________________
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E-mail address: ______________________________________
Customary fee: ______________________________________
Areas of Expertise in Gifted Training (30 Core Hours/Update- Be Specific): __________
____________________________________________________
Comments: __________________________________________

District/Affiliation:
References: (Please attach at least 3)
2003 TAGT Board Goals and Objectives

I. To advance gifted education
   A. Institute the Legacy Book Awards with the first presentation of award winners at the 2004 TAGT Annual Conference
   B. Continue to provide the TAGT Annual Conference in 2003

II. To diversify TAGT’s revenue sources
   A. Develop budgets for all conferences
   B. Establish a committee/board for the Legacy Endowment
   C. Ensure that annual objectives are adequately funded
   D. Investigate other revenue sources and recommend to the board

III. To gather and disseminate information
   A. Publications
      1. Create a CD of presenters’ handouts for the 2003 TAGT Annual Conference
      2. Create a CD of wares and products of vendors for the 2003 TAGT Annual Conference
   B. Host in collaboration with TEA the event "The 2015 Institute: Gifted Education for the Next Generation"
   C. Fifty percent of the TAGT Executive Board will submit proposals to present at other conferences
   D. Investigate the logistics/infrastructure of TAGT providing web based instruction
   E. Support pilot TAGT Regional Parent Conference to be held in 2004
   F. Develop standards for TAGT endorsement of presentations

IV. To advocate for children and youth with gifts and talents and those who serve them
   A. Disseminate the 2003 TAGT legislative planks to all legislators
   B. All TAGT Executive Board members will communicate with their state legislators by March 1, 2003, and as needed afterward
   C. Pursue opportunities to create or adapt policies that are beneficial to gifted and talented students
V. To maximize the productivity of the association
   A. Reinstate the Conference Scholars program
   B. Establish a parent function coordinator for the 2003 TAGT Annual Conference
   C. Develop electronic resource manual for board members
   D. Provide on-going staff development for board members
   E. Increase diversity of recruitment pool for board service and leadership
   F. Recommend any appropriate adjustments in TAGT’s fiscal year and the governance year
   G. Retain quality staff

VI. To increase access to gifted and talented programs for underrepresented
   A. Include a bilingual strand at the 2003 TAGT Annual conference
   B. Include a strand at the 2004 TAGT Annual Conference to address the needs of emotionally and behaviorally disturbed gifted children
   C. Apply for a Javits grant
Everything I Know About Differentiation I Learned from Students

Michael W. Cannon

First comes that sinking feeling, then a cold sweat as I look out on a class of supremely uninterested faces, polite (mostly anyway), but bored. How could they not be fascinated, mesmerized, and wild with enthusiasm at my brilliant lesson? Sure they were a class of gifted students, but I knew about teaching gifted students and how to differentiate curriculum. I had mapped it all out - content, process, and product. I had included elements of depth and complexity. So why weren’t they bursting with a desire to learn? I had forgotten the most important concepts of differentiation - those you learn not from books or experts, but from students. So here they are, the other concepts of differentiation.

#1: “This is sooo boringl!”

Every teacher hears this from time to time, but teachers of the gifted seem especially blessed in that they seem to hear it on a daily basis. And, to be brutally honest, not every subject is as scintillating as might be. Making connections can sometimes save the day. If the new novel you have in mind fails to set them afire, sometimes you can find a way ignite their interest. Years ago I taught Robert Louis Stevenson’s Treasure Island and there were a number of students who failed to find it readable. But when I appeared as a rude, dirty and obnoxious pirate, defying them to ignore me, the book was always a success.

#2: “I’ve already read/learned/practiced this!”

This is one of the more annoying comments a teacher hears. It can mean many things: they looked at it once; it was taught in an earlier grade, but they didn’t read it; or perhaps they really have read/learned/practiced it over and over. So, the challenge - make me like this again. One of the best tools I have found are the elements of depth and complexity. If a student has really mastered the factual level, direct them toward the ethical considerations, the patterns and trends, the big ideas, the changes over time and from different perspectives.

#3: “Not this again!”

And then when you have an absolutely fantastic project lined up, they will remind you that however brilliant you are, they did this last year, last month, last week and really aren’t interested in making one more board game, video, PowerPoint presentation. The more choices the better, whether it is second grade or senior AP History. I still remember, after more than 20 years, a young lady who really didn’t want to do another newspaper project. So when she turned in her Greek mythology newspaper, I found that she had painstakingly transliterated every word into the Greek alphabet. She smile sweetly and told me that no, she had not provided a translation. I had to grade it, but I learned my lesson about giving choices in projects.
Call for Articles

Articles are solicited that address the theme of the issue from both the practical and theoretical points of view.

Summer 2004
SECONDARY OPTIONS FOR GIFTED LEARNERS
Deadline: March 1, 2004

Fall 2004
CONFERENCE ISSUE
Deadline: June 1, 2004

Winter 2005
ISSUES IN GIFTED EDUCATION: SECOND LANGUAGE LEARNERS
Deadline: September 1, 2004

Spring 2005
EMOTIONAL/BEHAVIORAL DISORDERS IN GIFTED LEARNERS
Deadline: December 1, 2005

Guidelines for Article Submissions

*Tempo* welcomes manuscripts from educators, parents, and other advocates of gifted education. *Tempo* is a juried publication and manuscripts are evaluated by members of the editorial board and/or other reviewers. Please keep the following in mind when submitting manuscripts:

1. Manuscripts should be between 1000 and 2500 words on an upcoming topic.
2. Use APA style for references and documentation.
3. Submit three copies of your typed, double-spaced manuscript. Use a 1 1/2 inch margin on all sides.
4. Attach a 100—150 word abstract of the article.
5. Include a cover sheet with your name, address, telephone and FAX number and/or e-mail address.

Send all submissions or requests for more information to:

Michael Cannon, TAGT Editorial Office,
5521 Martin Lane, El Paso, TX 79903

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Texas Association for the Gifted and Talented

Membership Application

See www.txgifted.org for additional information

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(432) 693-1420
Midland ISD
1300 E. Wall
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jbridges@ecl18.net

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(281) 758-2710
4000 Sand Terrace
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wedgewood@fhs.katyisd.org

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(502) 997-2016
El Paso ISD
4330 Don单元ro
Anthony, NM 88021
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DR. KEITH YOUNT
(219) 307-7183
Tembah ISD
1819 Crealv Drive
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kyount@younet.com

Immediate Past President
TILLIE HICKMAN
(409) 842-6236
Odin Academy, Beaumont ISD
2250 West Virginia
Beaumont, TX 77705
rhickman@pcis.net

Publications Editor
MICHAEL CANNON
(915) 779-5588
El Paso ISD
5521 Martin Lane
El Paso, TX 79903
mcc4220@yahoo.com

Executive Director
JAY MCKINZIE
(210) 499-8248
TAGT
406 East 11th St., Suite 310
Austin, TX 78701-2617
jhibتنفيذ .mckinnlie@ymail.com

REGIONAL DIRECTORS

I
PATRICIA RENDON
(956) 984-6233
Region 1 BSC
1600 West Schulte
Big Spring, TX 79720
rendon@eexcm.cc

KATHERYN HOMES
(361) 362-6000
A.C. Jones High School
223 922 W. Adams
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klamer@beavertonisd.net

DALLAS BRANDENBURG
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Region 3 BSC
1955 Lewis Lane
Victoria, TX 77901

IV
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(210) 322-2529
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2136 Latewind Lane
Llano City, TX 78753
laniekey@academypianist.com

V
MARTHEE MORRIS
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ESC Region V
2701 Delaware
Beaumont, TX 77703
morris@excm.net

VI
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(512) 322-6949
Burson Houston State University
2201 S. Westheimer
Houston, TX 77084
elc_bap@exchange.txst.edu

JOE STOKES
(903) 904-7437
Sahara, TED
2010 Charlotte St.
Kilgore, TX 75662
joestokes@att.net

BILLY VIERE
(615) 731-7343
Paris ISD
3770 Graham Street
Paris, TX 75460
bivre@parisd.net

CHRISTA OWENS
(540) 669-1431
Washington Falls ISD
4101 Austin
Washougal, WA 98671
conwen@wfrs.edu

SHERI PLYBON
(253) 788-1384
Carlton-Farmers Branch ISD
2323 Polk Drive
Plano, TX 75073
plybton@cfisd.edu

CARLOTA RODRIGUEZ
(512) 296-2400
Carlton-Farmers Branch ISD
2323 Polk Drive
Plano, TX 75073
pricole@cfisd.edu

X

WASHINGTON

II
ROBERT THOMPSON
(817) 442-2699
Trinity East
1020 Timber View Dr.
Bedford, TX 76021-3130
rthompson@mindspring.com

DR. JAMES FALL
(254) 801-2912
Killeen ISD
501 Rev. RA Aramburu Dr.
Killeen, TX 76543
jfall@killeenisd.org

MICHELLE SWAIN
(979) 614-0779
Austin ISD
1111 W. 6th Street
Austin, TX 78701
mswain@Austinisd.net

DR. MARY CHRISTOPHER
(325) 670-1130
Hardin Simmons University
P. O. Box 2925
Abilene, TX 79601
mchrist@hsu.edu

MARY JANE MCKINNEY
(325) 536-3400
San Angelo ISD
100 Cottonwood
San Angelo, TX 76901
jjmckinney@san.anglo.k12.tx.us

KAY HARVEY
(806) 665-1210
Pampa ISD
307 Linda dr.
Pampa, TX 79065
harvey@pampa.net

CLAIRE KING
(361) 789-2808
Laredo ISD
3022 South Street
Laredo, TX 78043
cking@loisd.net

LYNN LYNCH
(432) 651-3488
11026 Lufkin Blvd
P. O. Box 2188
Midville, TX 77711
lynch@esc10.net

SHERYL MAXON
(972) 343-0548
Ymcst ISD
533 La Carrera Dr.
El Paso, TX 79912
smaxon@yisd.net

CARLOTA RODRIGUEZ
(512) 296-2400
Carlton-Farmers Branch ISD
2323 Polk Drive
Plano, TX 75073
pricole@cfisd.edu

X

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EDITORIAL BOARD

PUBLICATIONS EDITOR
MICHAEL CANNON
(915) 779-5588
El Paso ISD
5521 Martin Lane
El Paso, TX 79903
mcc4220@yahoo.com

EDITORIAL BOARD MEMBERS

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