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ABSTRACT

Targeted to educators and parents of gifted children, this issue is divided into three sections that address differentiating curriculum for the gifted. The following articles are included: (1) "The Essential Assumptions Regarding Differentiation of Curriculum for Gifted Students" (Susan Winebrenner); (2) "Curriculum Differentiation To Bring Out the Best in Students" (Cathy Freeman, Gail Herman, and Pat Hollingsworth); (3) "Problem-Based Performance Tasks: Encouraging Excellence in Mixed-Ability Classrooms" (Bertie Kingore); (4) "Differentiation for the Gifted: Using the Team Approach" (Marsha Hestad); (5) "Let's Get Real[TM]: An Innovative Problem-Based Learning Program" (Dan G. Holt and Colleen Willard-Holt); (6) "'Hey Diddle, Diddle' This Class Is a Riddle!" (Phyllis Salerno); (7) "Differentiation, Not a Quick Fix or Easy Answer" (Sally Walker); (8) "Differentiation: Why Is It So Hard?" (Carol J. Morreale); (9) "The Need for Struggle" (Jerry Schecter); (10) "Curriculum Differentiation for Gifted Children in Regular Classrooms: A Parent's Perspective" (Judith Harway); (11) "Highly Gifted Children at Home" (Karen Morse); (12) "LaLuce: Family Perspective of the Development of a Gifted Child" (David J. Mitchell); (13) "Revitalizing the Core Curriculum through the Arts" (Dan G. Holt); (14) "Thomas Locker: A Gifted Artist for Gifted Children" (Jerry Flack); (15) "Promoting Critical Thinking: Editorial Cartoon Interpretation" (Wm. Ray Heitzmann); and (16) "The Play's the Thing..." (Ray Sheers). (Articles contain references.) (CR)

ILLINOIS ASSOCIATION FOR GIFTED CHILDREN JOURNAL 2001

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IAGC JOURNAL FOCUS: DIFFERENTIATION

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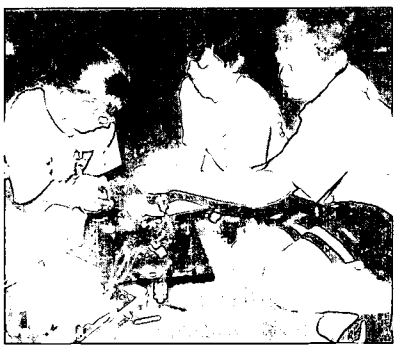

FROM THE EDITOR'S DESK

Joan Franklin Smutny

Differentiated instruction is a highly effective means for understanding and responding to the unique learning needs of gifted students in the regular classroom. Designed to build from teachers' current repertoire of instructional strategies, differentiating does not undercut or interfere with their existing curriculum. It enables them to reach children who represent a wide range of ability levels and learning styles (LD, bilingual, highly gifted, pre-primary, primary, girls, left-brained, right-brained, etc.). Thus, while it is ideal for gifted students, differentiation uses teaching strategies to develop the unique strengths and talents of all students.

This issue is divided into three sections: Differentiating: Premises, Practices and Challenges; A Parent's Perspective; and The Arts—A Catalyst for Differentiating. It explores how teachers can make curricular modifications, extend learning opportunities and adjust assignments to match the learning profiles of individual gifted students. In differentiation, teachers collaborate with students in the learning process, investigate and build upon student differences, and apply content in all subject areas to individual needs, abilities and interests. The issue provides many examples of educational contexts where differentiated instruction can extend the learning of each child, particularly the gifted.

Susan Winebrenner begins the first section with an article that challenges some deeply entrenched beliefs about highly able learners. She argues that most schools still hold to the theory that gifted students can fend for themselves, that they can benefit other children as role models, and that the heterogeneous classroom can adequately fulfill all their educational needs. Winebrenner discusses the importance that gifted students learn and develop their abilities—as other children are allowed to do—and that they have an opportunity to work together. She perceptively explores ways that the current educational system can meet the learning needs of gifted students and provides important information on such topics as staff development, compacting, differentiating the curriculum and tips for training teachers to implement cluster grouping in cases where no pull-out options exist for gifted children.

Cathy Freeman, Gail Herman and Pat Hollingsworth examine the usefulness of open-ended activities to differentiate the curriculum. Drawing discerningly on their experience with Project SAIL, they demonstrate the importance of providing open-ended projects with parameters or limits. Project SAIL employs the fine arts, humanities, writing, interest development and drama to generate specific activities that evoke higher order thinking and multiple intelligences. With parameters in place, open-ended activities have an extraordinary capacity to meet the needs of students at different ability levels simultaneously.

Bertie Kingore shows how problem-based performance tasks can encourage excellence in mixed-ability classrooms. Exploring how to integrate multiple learning styles and multilevel problem solving, she offers a range of tasks as examples that incorporate differentiated subjects. Problem-based tasks motivate all students to excel, to engage in decision-making and also allow gifted children to engage in higher level critical and creative thinking and to experience a complexity and challenge in content that they rarely encounter in the regular classroom.

Marsha Hestad discusses the significance of using a team approach to create a viable educational alternative for gifted students. As in the case of a child with special learning problems, a gifted student needs a plan of action that involves the parents, teachers, administrators (including a gifted coordinator if there is one) and, when needed, a school psychologist. This allows everyone involved with the child's welfare to pool their insights and understanding of her/his special abilities and educational needs. A differentiated curriculum needs to evolve from a team who can collaborate to ensure that this alternative plan is working for the child.

Dan G. Holt and Colleen Willard-Holt describe a unique problem-based learning program that evolved through a business-school partnership. Teams of students (grades 6-12) solve real business problems posed by corporate co-sponsors. Though not designed exclusively for gifted, the program is ideal for high ability students since it involves interdisciplinary content, advanced problem-solving, innovative and higher order thinking, in-depth inquiry and research. Topics include environmental issues, manufacturing, and marketing.

Phyllis Salerno creatively employs nursery rhyme characters to explore how differentiation can meet the unique needs of individual students. She gives each character an imaginary set of strengths, weaknesses, learning preferences and interests and casts Mother Goose in the role of the teacher who creates and adapts curriculum to enhance their abilities. Salerno shows how a teacher can spontaneously design alternative activities within the day's instruction that respond to the educational needs of individual students.

Sally Walker argues that differentiation has been around long before it became a buzz word and effective teachers have practiced its principles as a matter of course. Not to be seen as a quick fix to all difficulties faced by gifted children, differentiation only works when teachers have a clear sense of the content to be taught and the student needs that require greater complexity and challenge. Problems arise when differentiation is practiced as a strategy for groups of students who seem to have similar abilities or needs. This works in some instances, but Walker points out that differentiation often requires individualization-the careful design of activities for the individual needs, talents and interests of individual gifted children. A highly gifted student, for example, almost always needs a curriculum differentiated above that of other gifted students.

Carol J. Morreale confronts objectively some key problems schools face when attempting to implement differentiation. These problems include the fact that: differentiation demands time and planning which impels many teachers to use it more for students with learning problems; gifted students resist the challenge out of a desire to do what the rest of the class is doing; and parents misunderstand differentiated instruction and think

the school is burdening their child. Districts need to meet challenges such as these with a practical, well-conceived plan that provides information and support for teachers, students and parents and a strategy for coordinating efforts for the benefit of the children involved.

In the last article of this section, Jerry Schecter addresses the question of what happens to gifted students who receive no differentiated instruction in the regular classroom. More specifically, he explores the ill effects that a school experience with no struggle—that is, no academic struggle—create later in life. Gifted students who go on to college or to other spheres of endeavor where they have to exert to a much greater extent than before may become more or less dysfunctional. The lack of ease in academic accomplishment is a shock, especially if they never experienced a genuine challenge in all their years of school. To survive and contribute to the world, gifted students need to learn that struggle in learning is not the end of the world, but part of a process that can advance their abilities and their resiliency as human beings.

In the second section—A Parent's Perspective—Judith Harway shares her ideas on differentiation as an educational consultant to a gifted program and as a parent. This dual perspective provides unique insight into the issues both teachers and parents face in trying to create a more appropriate education for gifted children. Harway demonstrates the crucial importance for teachers to have adequate training and follow-up support to meet the needs of gifted learners. She offers a wide range of examples of curriculum differentiation in actual school classrooms and how they benefit talented students.

Karen Morse discusses the challenges of highly gifted students in the regular classroom and shares how a parent experiences the extraordinary demand, energy and voracious hunger for learning that their children bring to the family. She examines how homeschooling enables informed parents to differentiate instruction to an extent rarely possible in the regular school. It provides an individualized education with accelerated curriculum, flexible pacing, meaningful enrichment, complexity and depth in the daily learning process.

David J. Mitchell, another parent, describes the development of his gifted son and the ways he and his wife met his special educational needs. Because regular schooling could not sufficiently challenge him, the Mitchells supplemented his school experience through complex projects and activities related to his interests. The child thrived and developed because of the determination of his parents to provide raw materials for his projects and support-emotionally and academically-whatever new direction he sought to take.

In the third section, The Arts—A Catalyst for Differentiating, Dan G. Holt assesses the ways that the arts expand critical thinking, stimulate analytical and complex problem-solving, and engage the imagination. He shares a number of teaching strategies and projects to enrich the curriculum, generate new ideas and enhance the creative process. Holt maintains that the arts are basic to the growth of gifted children and should always be used to enhance the learning process.

Jerry Flack focuses on the extraordinary art work of Locker as an enriching and sensitizing force in the lives of children and adults who read and explore them. Flack reviews the most available books with Locker's illustrations. He provides excellent research questions and creative prompts to help children inquire into subjects in more depth and engage in imaginative work of their own. Teachers and parents can adapt them to a wide range of learning situations.

William Ray Heitzmann demonstrates how to use editorial cartoons to stimulate critical thinking in students. Cartoons can draw on multiple talents and learning styles to develop children's interpretive and analytical abilities in a range of subject areas. Drawing on current research, Heitzmann offers useful guidance on how to prepare gifted students for an exploration of caricature, symbolism and other techniques employed by cartoonists. His activities work well for differentiating the curriculum because they operate on multiple levels depending on student ability and interest.

Ray Sheers focuses on the potential of theater arts to develop the talents of gifted children. Theatrical work is an ideal strategy for differentiation because of its adaptability and versatility within the curriculum. Gifted students with a range of talents and learning preferences can easily find their niche in the design and production of a theatrical event or exercise. Visually artistic and technologically gifted students, for example, can make unique contributions to theatre without having to perform. The opportunity to research ideas, explore character, dialogue, movement and visual imagery develops potential that academic course work can not.

Designing a curriculum that is rigorous and challenging for gifted students is a difficult task. The result is well worth the effort. A differentiated curriculum includes a variety of learning options that respond to different readiness levels, interests and learning profiles. For gifted students, this means that they have the opportunity to work hard, master a substantial body of knowledge and think about issues and problems in critical and innovative ways. Gifted students thrive in classrooms where instruction is concept-driven, where assessment of student readiness and growth is ongoing, where flexible grouping occurs regularly, and where they can become active explorers of subjects that interest them. They progress in a climate where an integrity and consistency of differentiating are in sensitive and rich expression.

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THE ESSENTIAL ASSUMPTIONS REGARDING DIFFERENTIATION OF CURRICULUM FOR GIFTED STUDENTS

Susan Winebrenner

Entering this new millennium has caused me to reflect about the situation in which gifted youngsters and their families find themselves. For more than seven years, I have been traveling around the United States, Canada, and Australia, speaking about my books to educators and trying to help them find politically correct ways to recognize and serve the exceptional learning needs of gifted youngsters. It has not been an easy task.

Between the Sputnik era and the 1990's, gifted education enjoyed considerable support in this country, with many states granting financial assistance to school districts that provided program opportunities for gifted students. During the 1990's, the attention of the educational community in America turned, almost exclusively, to the needs of students who were not experiencing success in learning. The time for this was long overdue, and I applaud the noticeably positive effects this attention has had on that target group in many districts.

Cost of Strengthening Learning Outcomes For Struggling Students Borne by Gifted Students

Unfortunately, a price has been paid for these successes by the most capable learners. Most classroom teachers and district administrators have demonstrated, by their attitudes and behavior, that students who are already scoring high on local and state assessments are doing just fine and need little teacher attention or concern. In many places, programs for gifted students have been abandoned in favor or placing these kids in totally heterogeneous classrooms for their entire school day. A commonly held belief is that their presence provides positive role modeling for other students, which might lead to improved achievement scores for those who have scored low.

The research on role modeling clearly indicates that an emulatable role model is someone who is somewhat more capable than oneself, but rarely one who is an expert in the field. For example, if you were going downhill skiing for the first time in your life, and you mistakenly had ascended to the top of a Black Diamond slope, how likely would you be to try skiing this day if the only skiers you watched were experts? Could you actually visualize yourself becoming so skilled as you struggled to keep your ski tips even with each other? How much more likely would you be to ski today if your role models were viewed on the Bunny Hill, falling down often but arising again with all limbs intact? In much the same way, gifted students are rarely perceived as emulatable role models in heterogeneous classrooms. Better role models are found in high-achieving students with effective work habits and a positive attitude about helping other kids learn.

I regret that another factor which may have led to the abandonment of some gifted education programming is the title of my book, *Teaching Gifted Kids in the Regular Classroom.* Many administrators who have not actually read the book concluded from its title that I support the practice of full-time placement of gifted students in heterogeneous classes. This was never my intention. Those who actually read the book know that my definition of an effective program for gifted students is to combine pullout or accelerated classes with compacting and differentiation opportunities available in the regular classroom.

I also strongly support full-time cluster grouping of gifted kids in otherwise heterogeneous classes with a teacher who knows how to teach gifted youngsters. In this way, gifted kids can experience the benefits of working with their learning peers and being taught by a teacher who can consistently challenge them. There is more information on this practice later in this article.

Providing Challenge and Appropriate Differentiation for Gifted Students Is Compatible with Present Educational Philosophy

There is a sentence in the mission statement of most schools which pledges that all students will be able to actualize their learning potential. This implies a belief that all students are expected to experience learning at their personal challenge level. The reality, however, in most heterogeneous classes, is that the most capable learners often are just marching in place—with little or no noticeable forward progress. In order to actually challenge such learners, teachers would have to design and implement differentiated learning opportunities. With so much pressure on teachers to bring the below-level learners up to standards, many report little time or energy to notice or provide for students who get high grades and high scores on most assessments. Even though no new learning may be taking place, gifted students' contributions to their school or district test scores are expected and accepted as though the educational community had actually caused these favorable outcomes.

All parents have a right to ask this question of their children's teachers: "What evidence do you have that my child is working at her challenge level in your class?" All teachers have an obligation to answer that question. This means that teachers must know how to provide learning experiences that stretch students' existing capacities. To offer a "one-size-fits-all" curriculum is inadequate. Gifted students are not special - all kids are special. But given the fact that curriculum designed for age-appropriate learners cannot possibly challenge students who can learn content designed for older students, differentiated learning experiences are required.

Teachers often cannot be convinced of the real need for differentiation until they know the value of challenging all students to move into uncharted waters. Gifted students often don't come close to their learning potential especially when they are "given" high grades for work they know took little to no effort. Although most teachers believe that all students should have their self-esteem needs met as part of their learning experience, few realize that self-esteem actually is enhanced when success is attained by completing something a person perceived would be difficult or challenging (Rimm). Development of high self-esteem requires that students be permitted to challenge themselves in an environment in which

their mistakes and struggles, as well as their successes, are allowed and appreciated.

When students get high grades and other kudos for work they know required little or no effort, their self-confidence is undermined, and they learn to always find the easiest way out, postponing their exposure to challenge in many creative ways. Many really fear that if they try something challenging and are not instantly perfect at it, others might conclude that they are not really very smart after all.

To assume that gifted students are learning because they demonstrate minimum standards on state assessments is ludicrous. In Colorado, Oregon and several other states, educators realize that gifted students should be expected to exceed basic competency levels, and goal statements describe the expectation that such students should be scoring at exemplary levels. In order for this to happen, gifted students must spend considerable class time working on differentiated activities while their classmates are preparing for these high-stakes assessments.

Inequities in Attention to the Learning Needs of Gifted Students

There is a dearth of understanding in this country about the frustrations encountered by gifted students and their parents regarding the lack of opportunities for gifted students in public schools. I believe one reason is that giftedness has never been understood for what it really is—simply a manifestation of the degree to which one is different from age peers.

As our system has been impacted over the last 25 years by the influx of students from many other countries and cultures, there has been a well-funded response from the educational community in the name of multi-cultural education. Ethnic diversity has been recognized and many programs are in place which are dedicated to teaching all youngsters to recognize, accept and appreciate cultural and ethnic diversity. A similar situation exists vis-à-vis programs that purport to help youngsters resist peer pressure to use drugs and other harmful substances. The strongest message taught to youngsters in such programs is, "Just say no to peer pressure to do something you do not wish to do." Why not extend the objectives of these programs to empower kids to "just say no" to peer pressure to not be too smart or get grades that are too high.

I fail to understand why we cannot simply extend the objectives of such education programs to helping all students understand and appreciate differences in learning ability. Teachers try hard to make sure students with below-average learning ability are protected from being teased and taunted by other kids. Yet such protection is rarely available for high-ability students to help them cope with the many ways in which they are rejected by peers and by the education system in general.

The inequities in programming for gifted students are reflected in funding formulas as well. Our country's financial response to this situation is ludicrous—with $20 billion currently available for special education, compared to less than $20 million nationwide for gifted education. Even pending legislation would raise that amount to only $50 million or so, making less than $1 million available per state for gifted education. Twenty billion dollars provides about $400 million per state for special [illegible]n. Legislation to enforce the special education guidelines gets stronger every year. There is no similar mandate, national or state, that accompanies the language of differentiation expectations for gifted students with adequate funds to turn those expectations into reality.

If you visualize a bell-curve, you can see that both very weak and very strong students are equally as far removed from average. By virtue of that fact alone, gifted students should be as entitled to appropriate differentiation opportunities, as are students who struggle to learn.

There is also very little attention given in teacher education programs, at both the undergraduate and graduate levels, toward providing appropriate training to empower teachers to meet the differentiated learning needs of gifted students. Fewer than ten states in this country currently require an educator at any degree level to take even one course in gifted education. so even if frustrated parents find a teacher who empathizes with their gifted child's dilemma in school, most teachers truly do not know how to provide appropriate educational responses to their learning needs. Yet no educational candidate could leave college without taking at least one full course in teaching students with learning difficulties. What does this say about how our higher educational system values the educational well-being of its most capable learners?

Life in the World of Giftedness

Being among the top 5 percent of students in heterogeneous classes is often not a positive experience. Significant pressure exists that sends tacit messages that it is unsafe for you to demonstrate your true abilities. Other students may exhibit unfriendly body language and articulate hostile comments that label high achievers with deprecating names, such as "nerd," "brain," "dork" and worse. Some teachers allow these things to happen and may even have negative feelings themselves about students who may appear very demanding or critical. In order to fit in with age peers, many gifted students conclude that it will be better if they hide their exceptional abilities. "The kids won't like me," is a phrase often heard by frustrated parents who themselves struggle to find ways to help their kids balance the need for peer acceptance with the need to remain true to their exceptional learning abilities.

There is intense, constant pressure on many gifted youngsters to conform to average or "normal" behaviors. Of course, gifted kids are normal—for their advanced intelligence levels. They are simply not average. Once gifted students enter adolescence, the pressure to do just what peers expect is so intense that it causes many gifted kids to pretend to be much less capable than they really are. What really frightens me is that this phenomenon is increasingly visible among gifted students in high socioeconomic communities. More and more highly capable students are demonstrating by their school behavior that it is not "cool" to be smart or work hard in school. These attitudes create disrespect between students based solely on academic learning ability. Time and again we have agonized over this issue as we have witnessed violence in our schools, caused partly by years of frustration over perceptions of being rejected for some difference that becomes the target of ongoing negative attention.

Perhaps these inequities reflect the price we have to pay for living in a democratic society with egalitarian values. In the United States, Australia and some other democratic countries,

there appears to be a mistrust of those who can excel in intellectual pursuits. I believe it has something to do with worries that such people will consider themselves better than others and, in some way, strive for positions of power and authority. I find it fascinating that there is no similar suspicion of people whose excellence is in athletics, fine or dramatic arts. Those people, especially if they become celebrities, are privy to all kinds of treatment that would be given the negative label of elitism if bestowed upon intellectually exceptional persons.

It is very difficult for parents of gifted kids to learn how to advocate for what their children need in school without appearing self-serving. For most of the history of public education, frustrated parents of gifted youngsters had very little recourse but to find a way to pay for private schooling for their kids. Generations of gifted kids and their parents have become exhausted trying to find educational settings that would provide consistent learning challenges. Now, there are many more options available, most of which are much less costly than securing an education in a private school. The number of home-schooled kids increases dramatically every month. There are now numerous web sites that provide support for parents who want to home school their kids, including some designed specifically for home schooling gifted children. In many states, the public schools must still provide access for home-schooled kids to extra-curricular activities. Charter schools that were designed to challenge high-ability learners in a supportive atmosphere exist in many states. With these increasing and cost-effective options, the price public education will have to pay if it continues to ignore its gifted students is the loss of those persons from public education altogether!

How to Meet the Learning Needs of Gifted Students in Today's Educational System

What options do we have for reversing this trend of ignoring the learning needs of exceptionally capable students? There are two areas in which efforts should be concentrated. The first is staff development to support curriculum differentiation for gifted students, and the second is cluster grouping of gifted students.

Staff Development—Improving Learning for All Students

When we examine the history of pull-out programs for gifted students, we discover that most of the "state-of-the-art" expectations in today's classrooms were pioneered in those programs. When we brought together kids who were gifted in reading and other language arts, we provided literature-based reading and integrated language arts learning experiences. When we taught gifted math students, we focused on critical thinking and problem-solving experiences. When we taught these kids in social studies, we implemented thematic-interdisciplinary learning units.

The question has been raised, "If teachers of regular classes now focus on higher-level learning experiences for all their students, aren't gifted kids being adequately challenged in these heterogeneous groups?" The answer, unfortunately, is often negative. No hard statistics are available, but this type of teaching and learning is probably available in fewer than 20 percent of American classrooms. Furthermore, if learning experiences are improving for all students, it is reasonable to expect that gifted students will also be moving ahead.

Since these strategies are now expected to be available to all students in heterogeneous classrooms, training teachers how to challenge their most capable learners leads to better educational experiences for all students in any class.

Compacting and Differentiating the Curriculum for Gifted Students

Many teachers acknowledge the reality that highly capable learners need challenging learning opportunities. Their fear, however, is that students who already know the material they are planning to teach will create additional demands on their planning time to locate and provide extended learning experiences. Many also fear that they won't know what to have the eligible students work on in the time that is created by compacting. "Compacting," a term coined by Dr. Joseph Renzulli, means finding ways for gifted students to spend less time with the curriculum designed for age peers. Compacting practices include pre-assessing students to give them full credit for what they have already mastered, providing differentiated activities for gifted students to work on instead of "the regular curriculum."

Many teachers resist the notion of compacting and differentiation because they fear it will just create a lot more work for themselves. However, teachers can find creative ways to plan regularly with other teachers, such as during team planning time, making the practice of differentiation much less terrifying if the differentiated activities are ready before the regular content is taught. Even if no students qualify for compacting and differentiation at the beginning of the unit, the differentiated activities might be used by some students who "finish early" or by the entire class as culminating activities for the unit.

Compacting and differentiation efforts should revolve around the following guidelines:

1: All learning activities, including thematic, interdisciplinary units, should have pre-assessment opportunities available for students who volunteer to demonstrate prior knowledge and mastery of concepts, ideas and skills. Whatever method has been planned for assessing student progress during or at the end of a particular unit of study is the same method that can be used for the pre-assessment. Whether the pre-assessment takes the form of a written test (measuring student response as the class brainstorms all they know about an upcoming topic) or performance on a designated task, any student who chooses to participate in the designated task should be encouraged to do so. When the pre-assessment is open to all who think they could demonstrate the required degree of mastery, there should be little resentment from students who are unable to do so, particularly if the "regular" activities are interesting and challenging.

2. Students who qualify for differentiation after the pre-assessment spend much of their class time working on extension activities, some designed by the teacher and some reflecting student choice. These students need to pay attention to direct instruction only when the teacher is presenting material the students have not mastered. When students need acceleration of content in addition to or in place of extension, such as in very sequential subjects like reading or math, some acceleration of content may be required. Students might be allowed to work with a group from a higher grade for the subject areas in which

they are significantly advanced. In rare cases where a youngster's entire learning level is quite advanced from age peers, radical acceleration or double promotion is another option.

3. In subjects where pre-testing is not feasible since the content is new for all students, teachers compact the time students have to spend learning the designated content. The rest of the time, students are becoming "resident experts" on a topic related to the unit content. When they share what they have learned with the class, the unit content is enriched for everyone.

4. There are many ways for parents to help in situations where students are experiencing compacting and differentiation. They might suggest topics which particularly interest their child and ask that part of the time the youngster spends on differentiated activities in school be related to that area of interest. I believe it is also appropriate for such students to spend part of their homework time working on a specified section of their resident expert project at home. This arrangement helps the teacher extend the classroom differentiations into a differentiated homework opportunity. Parents should be alert that their job is not to ask the teacher for more work for their youngster, but for different work that will interest and challenge him or her. Emphasis on grades should take a back seat to the values inherent in providing highly challenging learning experiences.

Once teachers learn how to challenge their gifted students in manageable ways, joy and excitement abound. Teachers make comments like, "I wish I had known about these things earlier in my career" or "I just can't wait to get back to my students to try some of these things with them." I've even heard the second statement during summer training, when one would not expect teachers to be anxious for school to start!

Tips for Training Teachers to Provide for Gifted Students

In teaching teachers, it is very important to allow adequate time during the training workshops for them to plan the actual activities they will offer to their students. This way, they learn to plan activities that will increase the interest, meaningfulness and relevancy of the work for all students. When each student perceives his work as exciting, there is little or no resentment toward those who are doing the differentiated activities.

A matter of intense concern is classroom management. In order to try something different with their students, teachers need to know that the technique will flow smoothly in the classroom and will be relatively easy to manage. I spend considerable time demonstrating methods that help students understand exactly what they are supposed to do in class on a given day. Methods are demonstrated to help teachers keep records of students and specific options used. We discuss ways to help students improve their own organizational skills and take more responsibility for managing their independent working time. I demonstrate ways that teachers can spend time with students who are working on differentiated tasks, so these students don't feel abandoned by the teacher and are aware that help will be available for them when they need it. Behavioral guidelines for students working more independently are suggested, along with consequences for students who are unable to follow those guidelines.

By the time teachers leave the workshop, they have concrete plans about which strategies they will use and how they will manage those options. Before closing, we talk about ways in which teachers can continue to support each other as they work to implement compacting and differentiation opportunities in their classrooms. The research on staff development concludes that lasting change is more likely to happen when teachers have peer support during the entire implementation process. I strongly encourage the formation of school-based study groups, led by teachers in the workshop and open to all interested teachers in their building. Meeting together at regular intervals during the school year, teachers select methods to try, help each other with implementation and have group discussions on the pros and cons of each method. Without such a support system at a school, teachers who attempt to use methods they have learned in a workshop are likely to abandon them as soon as they encounter any barriers to success. With the study group members available for each other, the likelihood of being able to work out glitches as they occur is very good. Therefore, the likelihood of lasting, effective changes coming from teacher training methods is also greatly enhanced.

Cluster Grouping Gifted Students

Lets return briefly to the issue of self-esteem. One goal is that all students feel acceptable just the way they are; that one doesn't have to change to become more "normal." Gifted kids, especially as they enter adolescence, often hide their intellectual abilities because the message they perceive at school is that they would be better off if they were more like other kids. Classes need to provide safe havens for gifted students to demonstrate their exceptional learning ability without feeling weird or unacceptable.

Regular grouping practices do not automatically provide for the needs of gifted students. Although totally heterogeneous grouping appears to be a beneficial arrangement for most students, gifted kids do not thrive well if they are purposefully separated from each other so that one or two can be placed in each class as role models or leaders. When gifted kids are grouped together for part of each school day with learning peers, they are much more likely to demonstrate their capabilities because they have others like themselves who can validate that they are "ok" just the way they are. As Dr. Ellen Winter of Boston College writes, "Gifted children are often socially isolated and unhappy, unless they are fortunate enough to find others like themselves."

The practice of cluster grouping can provide for this grouping option without returning to the former method called "tracking." Tracking involves grouping all students together with students of similar ability. Cluster grouping, on the other hand, groups together only the students who can benefit from it. Instead of making sure all classes have at least one or two gifted students, plan to purposefully cluster academically gifted students together in groups of four to six and place them in an otherwise heterogeneous group. Recent research by Dr. Marcia Gentry (1999) provides fascinating data, showing that cluster grouping benefits not only the gifted students, but others as well, in such concrete ways as improved achievement.

There are several benefits from this type of arrangement. Teachers are more likely to offer the types of curricular modifications gifted kids need, and all students in the class are equally eligible for those modifications if it can be demonstrated that previous mastery has been attained or that exceptional talent

with a particular topic is observed. Gifted kids are more likely to take advantage of those opportunities because they will not have to work alone when they do.

Parents of gifted students should advocate for their children to be grouped together, even if only in small groups in otherwise heterogeneous classrooms. When gifted students are "clustered" in this way and placed with teachers who have had training in appropriate teaching strategies to use with gifted students, they are much more likely to respond to opportunities designed for them. They are more willing to show what they already know and to spend class time working on tasks that provide more challenge for them. When a teacher has four to six gifted children in a class, he is much more likely to consistently include special planning for their needs to take their learning beyond the parameters of the regular curriculum. Parents of clustered kids soon realize their children are actually experiencing something very close to a full-time gifted program. In addition, administrators and school board members appreciate being able to provide for the needs of gifted students without incurring significant extra budget expenses.

Cluster grouping for gifted students is an appropriate expectation from parents since the practice of total heterogeneous grouping robbed their children from experiencing consistent opportunities to learn at their challenge level. It's time to balance the scales.

Be sure to locate the research by Dr. Marcia Gentry to help you share the benefits of this arrangement with teachers, administrators and school board members. You may call me toll free at 1-888-327-3477 and leave an address if you would like to receive a list of districts in several states that use cluster grouping successfully and are willing to share their experiences with administrators who are seeking information. They probably will not discuss this with parents, so find an administrator who is willing to at least gather the appropriate information.

Conclusion

The time has come for teachers who sympathize with the inequities gifted students experience in school to be pro-active in their efforts to bring forth an educational system that will provide for the learning needs of these exceptional children. The time has come for parents, who wish to see the needs of their children met in public education, to become noticeable political advocates for them. The way to make this happen is to expect all teachers to provide compacting and differentiation opportunities to any students who qualify by meeting the described expectations. The platform upon which these advocacy efforts rest is the notion that all students deserve an education in which they are consistently being challenged in their learning experiences. Anything less is inequitable.

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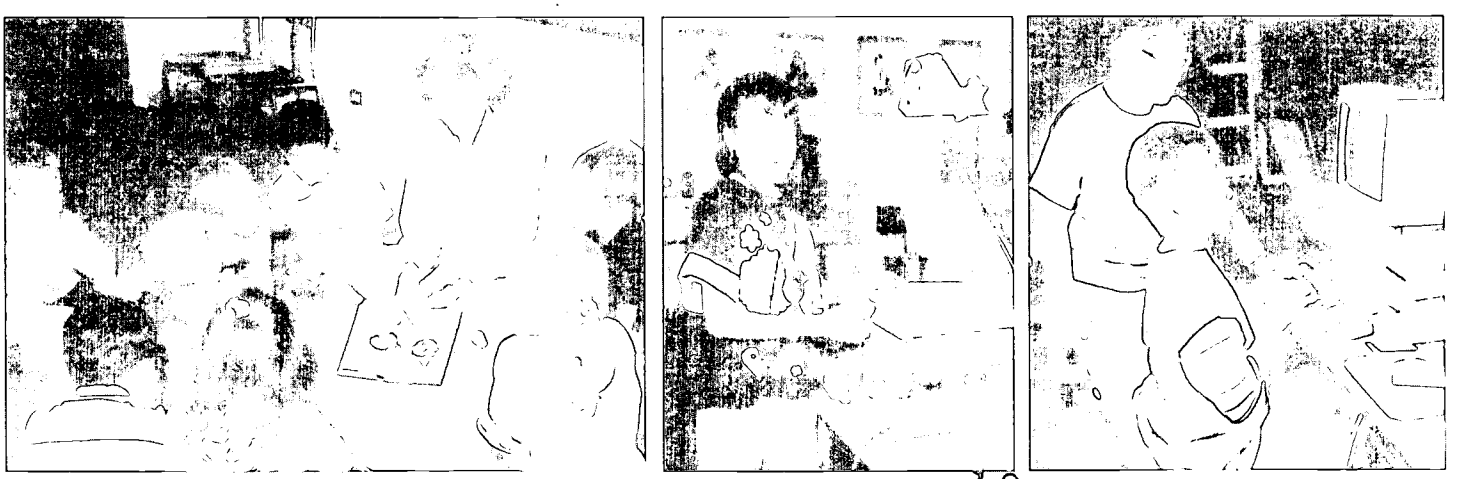

CURRICULUM DIFFERENTIATION TO BRING OUT THE BEST IN STUDENTS

Cathy Freeman, Gail Herman and Pat Hollingsworth

Adult health clubs are quite differentiated for interests, skills and abilities. People that come know the program will be varied according to individual abilities. Most of us are thankful not to have to do the same number of repetitions as a dedicated body-builder. We are thankful not to have to do the same weights as a linebacker on a football team. Chances are the body-builder and the linebacker are equally glad they are not limited to the workout of the average 9 to 5 office employee. People are free to choose their own workout levels. Granted, this is differentiation for physical differences rather than intellectual differences, yet the principle is the same both instances: the goal is for participants to be best served.

Schools often, in an attempt at fairness, require the same from all students regardless of abilities. Some children will be overly challenged, others will be under challenged, and a few will be at an optimum challenge. It is important for teachers to be able to provide challenge for all students.

Open-ended activities have long been used as a strategy for differentiation. However, giving unlimited choices has not proven to be an effective method in achieving the most differentiated responses from students. Nancy Hertzog (1998) found that the quality of responses from students given unlimited choices in product, process and content was not nearly as high as when there were limits on the product. She also found greater differences in responses when limits were placed on the product. Many of us who frequently use open-ended activities have found this to be true. Teachers often call this "freedom within parameters."

Education in the fine arts is an excellent vehicle for implementing "freedom within parameters." Each medium, whether it be creative writing, drama, visual arts, or music, carries built-in parameters. Drama and music productions are usually performed for a live audience, while visual arts and creative writing must be done ahead of time. The student's skill, interest, imagination, and ability naturally differentiate products in the fine arts arena.

Open-ended, differentiated activities must contain the opportunity for using upper-level thinking skills. Study of the humanities inherently requires more abstract and higher-level thinking. To understand and apply these richest parts of the human experience demands analysis, synthesis and evaluation. The blending of the humanities as expressed through fine arts provides an excellent opportunity for classroom differentiation. Students are exposed to high-level content as well as an artistic experience. A program entitled "Project SAIL" was designed to provide students with these learning opportunities.

Project SAIL is a three-year U. S. Department of Education Javits grant whose purpose is to identify and nurture the gifts and talents of economically disadvantaged students. Open-ended activities are strategies used extensively in Project SAIL. The Project SAIL theme, "Searching for Patterns in History," focuses on an interdisciplinary approach to the study of the history of art and architecture. Students examine the ideals of each time period, from ancient Egypt through Romanticism, to see how these ideals influenced the art and architecture of the time.

Art

In Project SAIL, students first learn the most important art rules. These are:

1) Make no put downs of yourself or others during art class. Being critical during this time shuts down the brain and does not allow you to make good decisions.

2) Do not say, "I messed up." Instead say to yourself, "This is not what I intended. Now I'm going to figure out how to make this into something else."

Drawing is a skill that can be learned, just as handwriting can be learned. It teaches students to be observant and to notice subtleties. Drawing is an engaging, open-ended learning tool that differentiates for students' abilities. It has been a neglected method for learning. Drawing is a way to express oneself and communicate, and it should be widely used in education. During the Project SAIL art classes, teachers who participated began to believe they could use these skills with their own students.

Each day of Project SAIL, the art teacher came dressed in a costume representing the time period being studied. During the Middle Ages study, she came as a monk who described what it was like living in a Romanesque monastery. As she spoke, she drew a Romanesque building and had the students and teachers drawing as well. Everyone was able to participate and to achieve some level of success. The activity was differentiated by learner response.

In addition to learning about architecture and how to draw buildings, students also learned to draw the human head. One day, when dressed as George Washington, the art teacher discussed the restraint and dignity of the Neoclassical time period. She had students draw the head of Washington as she also drew on the board. In this project there are definite limitations on the products but great freedom of individual response. At the end of Project SAIL, 80 percent of the students reported that they felt their drawing had improved.

Writing

Each day students had a variety of ways to learn about the time-period being studied. They listened to costumed speakers and drew pictures of famous buildings and people; they used books and artifacts available at Interest Development Centers; they participated in games and chants, and dramatized action and events. All of the activities focused on developing an understanding of the ideals of the time period and how those ideals influenced the arts, architecture and the lives of people.

Writing was a time to distill, to record and to express what had been learned. Students did prewriting activities such as developing a list of sensory words to describe the time period. For example, students created a list of words about what they might have seen, heard, tasted, smelled and felt had they lived in ancient Egypt. They described such things as the sand under foot,

the sweat in the eyes, the aroma of baking bread and the heat shimmering off the desert. In another prewriting activity, students described how the thick, heavy Romanesque architecture contrasted with the light, delicate Gothic Architecture.

Writing is an excellent way to provide open-ended activities for students. The product is defined but students differentiate through content and process. Writing is an open-ended activity that allows students to go beyond the usual expectations.

Interest Development Centers

Interest Development Centers provide the opportunity for a classroom teacher to differentiate according to students' interests and abilities. At Project SAIL, four large common areas are set up with an Interest Development Center for each time period, from ancient Egypt to Romanticism. Each center contains posters, artifacts and books about a time period. For younger children, the centers contain such things as a sand table for Egypt, plastic Roman armor, a Middle Ages castle, Baroque "finery" and tricorn hat. Students have opportunities to use the centers each day. Interest Development Centers can be set up in classrooms and used to stimulate enthusiasm in subjects that might be new to students and are also a way to create excitement about a variety of topics. The centers can be the focus of an assortment of open-ended activities.

Drama With Younger Students

Differentiation is defined by Carol Ann Tomlinson (1999) as "a teacher's response to learners' needs." Teachers want to help students learn something new each day instead of "circling the airport" waiting for the control tower to give permission to land (Burns, 1999). Good teachers of the visual and performing arts have been differentiating for years. The artist mentor adapts instruction to meet the skills and knowledge (content), processes (ways to learn), and performance levels (product) of their student(s).

One of the most common ways that drama teachers differentiate is by allowing students many opportunities for choice according to their interests. Teachers inquire who is interested in having more opportunity to create scene ideas, characters, sound effects, or costumes and props. Teachers might talent-spot students who are excellent directors. After a period of improvisational creating, some older visual-spatial students might enjoy keeping the maps or promptbook of the blocking chosen for the final production. Teaching students about multiple intelligences (Gardner, 1986) only increases students' awareness of choices and their burgeoning problem solving abilities, especially in the kinesthetic, musical, linguistic, interpersonal and visual-spatial areas. Students then choose or may be given more differentiated instruction, tasks and roles to play in the final production. In order to differentiate, the teacher must be a good observer and a good listener.

Students preparing stories for performance do not all need the same audience challenges. Some students will be challenged by speaking and acting in front of their younger schoolmates; others will be challenged only when they reach beyond the school audience into the larger community. These students might perform on local cable TV, in libraries, historical societies, or as storytellers at birthday parties for younger students. Teachers can differentiate in drama through all these means: interests, ability or readiness, complexity of tasks and instruction, and through offering different products and audiences.

Project SAIL included "at risk" K-5 students from University School at the University of Tulsa in their summer program. These children attended classes in drama, art, science, writing and research. Primary students worked on Egyptian culture in drama classes. They were fascinated with the details of Egyptian life, especially the building of the Pyramids. Students who were facile with words and movement loved exploring the inside of the Pyramids using mime as part of a creative drama activity. The verbal students talked freely about what they "saw" along their journey and in their chambers; the kinesthetic students were busy miming what they knew. All the information they had found in their Interest Development Centers began to seep out through mime and "robber" conversations. Some of the more kinesthetic students were very interested in the workers and their tasks; others were interested in the thefts of the tombs and the scientific methods of the scientists who rediscovered the burial chambers. From text and picture books, these primary students found images that turned into improvised scenes. For example, they learned that one way Egyptians created great stone blocks for the Pyramids was to pound wooden wedges into cracks, pour water over them, and then wait until the wood swelled enough to enlarge the cracks so the block of stone could be extracted. Anything of interest to the students was acted out, sometimes silently, other times with sound effects or dialogue. Some students told us what they found and then the teachers narrated it as the students acted it out.

Most of the scenes involved four major topics: the Pharaoh's leisure, the builders' hard work, the robbers' illegal thefts, and the scientists' careful extraction. Many little scenes developed that were mimed with a song describing the action of the play. A college student dance mentor helped choreograph the mime movements to fit the words to our song, which was sung to a well-known tune. Sometimes musically talented students will create their own original tunes to accompany a play.

The Ancient Greeks, Homer, and even Aesop would be envious of the third and fourth graders' version of "Achilles' Heel" (Hollingsworth, 1998). A brief version of the myth was recounted as one of several ideas to explore in drama class. An "organic storyteller" (Herman, 1986) often stops during a second story retelling to ask students what they see happening. This is one way to differentiate for visually creative and linguistically clever student contributions. In this story, three such "organic interventions" (Herman, 1999) were used. For the first organic intervention the question was asked, "What do you think mother Thetis did to keep her son, Achilles, safe before she remembered the magic of the River Styx?" Some visually aware students were brimming with images such as Thetis holding Achilles and singing lullabies, Achilles wrapped in baby armor and Achilles safe in a "playroom cage." Each of these scenes was then improvised with a different student playing Achilles and Thetis. (Students who thought up the ideas were not necessarily eager to be the actors.) In the following days, musically inclined students spontaneously brought in original lullabies they had created or remembered their mothers singing to them. All of these were sung and integrated into the scenes.

Students had to solve an artistic problem involving the story structure. They had to create ways to show that Thetis and Achilles were not satisfied with each of Thetis' ideas for keeping Achilles safe. Finally, after all the scenes were improvised, we acted out Thetis' solution in the original myth: by dipping her son in the magic River Styx, Thetis helped Achilles become strong and invincible. Musically aware students created sound effects; they chose the lyre and chimes for the River Styx scene and the flexitone for Achilles' bouncy-baby movements.

The second "organic intervention" was generated at the point when General Ulysses needed men for his army. The question was asked, "What else do you think Thetis might have done to keep Achilles hidden from Ulysses?" This time students offered two ideas for Thetis: she might board up the house and she might hide Achilles in a closet. After acting these two organic scenes in small groups, we returned to the plot of the myth. Thetis disguised Achilles as one of his sisters. However, Ulysses returned with beautiful fabrics for the sisters and weapons for Achilles to examine. Ulysses knew Achilles could not resist touching shiny new weapons. Sure enough, the sisters gravitated to the beautiful cloth while Achilles (disguised as a girl) headed straight for the weapons.

The third organic intervention came at the time of the battle. Students wanted to use swords, soldiers on horseback and soldiers with arrows. These scenes were action-packed with mime movements that needed to be staged for the safety of the students. Kinesthetic students shined in this activity. Mime movements were practiced while standing on two very visible floor lines and facing one another. Imaginary swords and arrows became very visible through the mimed actions. Pairs of students worked out choreographed sequences. The soldiers on horseback began at one end of the line and rode in pairs flailing their imaginary weapons overhead. In the final scene, actors used slow motion to focus the audience's attention on the arrow being shot into Achilles' heel. Everyone else froze in position. Sound effects on percussion instruments (temple blocks for horses, slide whistle for arrows, bells and gongs for swords) augmented the battle scenes.

The students who were studying Rome were also fascinated with everyday life. They brainstormed occupations and broke into groups to explore the roles of chariot racer, artist, sculptor, senator, Olympic runner and gladiator. To share their work each day, the "Three Ring Circus Structure" was used. Students were seated in small groups around the periphery of the room while the "ringmaster" called the audience's attention from scene to scene.

On the first day after brainstorming, the students worked in tableau (frozen pictures) by creating signature postures for their characters. The postures conveyed how each character felt about his or her occupation. Next, the students mimed sequences for the various occupations; they continued to make creative choices about the characters' attitudes. The next day each student created brief statements or conversations about what they were doing. The senators, for example, created a scene in the Roman baths and then went on to make speeches in the Senate. Drawing upon the knowledge of Roman life that students had gleaned from the Interest Development Center, they decided what each senator might want to change or increase, then created brief statements [illegible]eir causes. The sculptors, on the other hand, used other students as "clay" and created sculptures in slow motion. This scene could be set with musical sound effects using percussion instruments such as lyre, chimes and temple blocks.

On the fifth day a circle-structure play was created, modeled after the Japanese story called "The Stonecutter," in which the subject of the story becomes disenchanted with his occupation and dreams of changing his career. When he wishes to be a king just like the one he sees in the valley, he finds himself in king's clothing riding a great white horse. In our version of the story, the main character was an artist who did not want to be an artist any longer. He decided to try working as a chariot racer. Once he became integrated into his new occupation, he found reasons why this job was also unsatisfactory and changed to still a different occupation until finally he returned to being an artist, realizing that, for him, it had the most positive qualities.

Choices about what problems students will solve are the most common way to differentiate in drama class. Students choose to use their musical intelligence whenever they attempt to find the right sound(s) for a particular action, mood or scene. They use their kinesthetic intelligence when solving problems that involve communicating actions and characters with their bodies. They use interpersonal intelligence when solving problems relating to the feedback and encouragement they give to each other. They use their artistic and linguistic intelligences when they solve visual and spatial problems in the playing area, and when they create new dialogue for characters and new scenes for the drama. The drama coach can also differentiate by asking for help by providing advanced content when needed. For example, students with a demonstrated flair for creative dialogue and language expression could benefit from vocal and physical character coaching. Others advanced in mimetic representation of action and objects may need more attention in developing mime techniques. Other students who gravitate toward the sound effects may need to explore percussion instruments. When teachers make these kinds of adaptations, however briefly during a drama session, differentiation occurs and students feel recognized for their interests and abilities.

Drama With Older Students

The room darkens. The crowd hushes as several fifth graders in chicken costumes enter the stage. They are immediately in character, becoming the chickens they have invented during the weeks prior to the Winter Drama Festival. They begin to sing to the tune of "Frosty the Snowman" the lyrics they have written to narrate their Revolutionary War play entitled "Phoebe the Spy" based on the story of Phoebe Fraunces as recorded in a book by Judith Berry Griffin.

"Phoebe the spy, had a very merry heart,

She was the cleverest girl in the Revolutionary War, though she's only 13.

Phoebe the spy, had a very important job,

We're going to tell you in our play today, so we can't give it away. Bahk!"

The students tell a few chicken jokes and a plot to kill George Washington unfolds. The students have spent weeks planning, developing, and polishing to achieve this unique, creative, and historically accurate version of the Revolutionary

War story of their choice. Sixteen fifth graders each developed their own character, weaving together a lively play born from facts as well as their imaginations.

Each winter, teachers who participated in the summer Project SAIL bring their students to the Winter Drama Festival at the University of Tulsa. Before an audience of parents and peers, students perform 10-minute plays tied to historical content covered in the fall social studies curriculum. Play topics for fifth through eighth grade are student-selected and the dialogue student-generated. Producing this collaborative, student-improvised play based on social studies content areas, such as the Revolutionary War, provides an excellent vehicle for differentiation in the classroom.

Even in a classroom of gifted students, a variety of ability levels, strengths and interests are present. Through the process of creating a play, talents and strengths emerge that may not have had the opportunity to show up in a regular classroom situation. Students gifted in verbal communication, who may find writing challenging, excel in creating dialogue and believable interaction between actors. Classroom leaders promote unity and direction, while students focusing on interpersonal relationships provide encouragement. Artistic students often show up with a needed prop they have made, and students who are "experts" in various aspects of the topic take charge of details. Musically gifted students may add a song or musical rap narration. Students with a sense of humor add another important ingredient to a drama production.

Before the play process begins, students conduct research individually and in groups. Together the class brainstorms to generate varied and unusual themes for the play within the content area covered. Students elaborate on their favorite themes, examining the possibilities that could be developed from each idea. Topics are gradually narrowed down by voting until one theme is chosen.

The class works together to create a plot line which is written down, step-by-step, and displayed throughout the process. This plot line may be modified later as needed. The group discusses what characters are needed in the play and a list is drawn up. Students choose all the characters they are interested in playing and with the teacher decide on who will play which parts. When the planning is completed, improvisation and polishing begins. For each scene, the teacher clarifies what information needs to be conveyed to the audience. Students improvise dialogue based on their character and the plot. The group offers its input. Scenes are practiced and polished until the play can be completed smoothly in 10 minutes.

All levels of Bloom's taxonomy of cognitive learning are utilized as students create their play. Knowledge, comprehension and application are crucial to any dramatic performance. Students need only memorize, express and dramatize to demonstrate these levels of cognitive learning. Students utilize the more complex, higher levels of analysis and synthesis through the development of character and plot. They examine their characters and various plot twists, experimenting with different developments and making choices based on these ideas. Students must integrate their knowledge to translate information into dialogue and action based on their character's qualities. For example, in order for students to develop the character of an honest, loyal, good leader they must find ways to demonstrate these qualities through actions and words. They must plan, coordinate with others and create and organize action, props and costumes.

Students must think creatively to solve logistic problems in portraying events on stage. For example, one play called for a donkey. At this point, all action stopped and the students sat down and brainstormed ways to get around the obvious impracticality of using a live animal on stage. The students' solution was to have a class member stand behind the curtain while holding one end of a rope and hee-hawing while the on-stage actor mimed, pulling on the rope attached to the imaginary donkey.

Students have the opportunity to elaborate and dig deeper in gathering information to supply plays with realistic detail. Research questions arise such as what types of foods were eaten, who prepared it, how did people find out the news of the day, or what might an officer's wife wear. Assignments are given to individual students, along with suggestions from the group or teacher as to where this information might best be found.

The students have an excellent format for evaluation. Attending the Winter Drama Festival allows students to watch many other plays, one quickly following another. Students observe first-hand what does or does not work in a play. They soon see why they must speak loudly and clearly. They understand the importance of letting the audience in on the plot. They experience good plays that hold their interest and confusing plays that must be quietly endured. They know what happens when an actor breaks character. They store away ideas that might be applied to future plays.

Productive thinking (brainstorming) and decision making are used to select the play topics. Often, especially in the fifth or sixth grade, students select a story to dramatize. Plot lines are easily developed in these plays and extra characters can be added to accommodate the number of students in the class. All students must be on stage and speak. Many choices are available for these characters. For example, one class chose to dramatize Washington Irving's Headless Horseman. Most girls wanted to be Katrina VanTassel. After Katrina was chosen, two girls who also wanted to play the part developed characters as maids to the VanTassel family—one a ditzy, silly maid, and the other, a decrepit old one. Both characters were as memorable as Katrina Van Tassel herself.

By the time students are in the seventh or eighth grade and have both acted in and seen a number of these plays, they may be ready to try something different. They may move beyond mere dramatization to creating a more abstract representation of history by reorganizing their knowledge from an entirely new angle. For instance, this year one group chose to research wives of presidents as their play topic. Each student researched a specific president's wife, including dress, attitudes and relationships with her husband and family. Then, in a therapy format, each became their character and interacted with one another.

In order for all these beneficial cognitive results to be effective, a classroom atmosphere conducive to risk-taking must be attained. An open, student-centered environment where ideas are accepted and respected, even if they are not actually used, is essential for creativity. Ownership of the play must belong to the

students. When students "own" their play, their product is a true reflection of their ideas for a real audience. This encourages self-initiative and creativity in problem solving. The students must solve problems themselves. It is important for the teacher to not solidify in his or her own mind what the play will look like. The teacher must be flexible and act as a facilitator by prompting, not dictating or judging. Patience is required.

The teacher has quality control and ultimate veto over appropriateness in all areas. Rules are laid out beforehand. In this day of crude comedy, a good rule of thumb is to require that the humor be witty and clever, without being rude or shocking. The teacher should model the behavior expected by students and treat students and their ideas with respect. Put-downs or laughing at others is absolutely inadmissible. Nothing closes down creative flow like embarrassment and humiliation. A student whose contribution is a put-down, is required to give the "put-down" person two genuine compliments. This is a good life skill and helpful training for seeing the cup half full instead of half empty as well as keeping the class focused on the cooperation necessary to produce a play.

If a student is stumped about what to say or do in a situation, all action stops and group brainstorming begins. The students learn that what is good for one person's performance is good for the whole play. In this creatively safe environment students think and rethink their ideas, throw out the dross, and their very best product is the end result.

The benefits of differentiation through drama are manifold. In the cognitive domain, students learn about historical events, various points of view, customs, details about daily life, accepted philosophies of the time and important people who have shaped our world. In addition, they have learned to cooperate as a group, think independently and creatively, express their ideas in a positive way, speak effectively in front of an audience and strive toward a common goal. Each student learns how to use his or her strengths and abilities in a group setting to achieve a creation they can call their own and which they are proud to perform.

Conclusion

Open-ended activities are one of the easiest methods of differentiation to implement in the classroom. They can be used in almost any discipline and at any grade level. As students get older and attain more experience, they develop confidence and skill levels that allow them to work more independently and with greater self-direction. This type of differentiation benefits all students because it allows them to develop their own unique gifts and talents and helps them to reach their individual potential.

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PROBLEM-BASED PERFORMANCE TASKS: ENCOURAGING EXCELLENCE IN MIXED-ABILITY CLASSROOMS

Bertie Kingore

As students move into upper grade levels, the number and kinds of creative projects typically decrease. Often, schools are too busy covering the content to indulge in creative, hands-on activities. Yet students of all ages retain information best and demonstrate increased depths of understanding when they are more actively involved at higher levels of thinking (Dods, 1997). Furthermore, diverse learning styles and multiple intelligences demand learning experiences beyond traditional paper-and-pencil tasks. The challenge is how to incorporate appropriate content and skills into creative learning opportunities for students.

Performance tasks that integrate creative problem solving can encourage productive thinking and problem solving in language arts, math, science and social studies through an active learning format appropriate for kindergarten through high school students. The teacher presents students with a multi-level problem. Students work together in groups to collect additional information, locate resources, pose solutions, reach decisions and evaluate effectiveness. Because of the open-ended nature, these problems respond to students' diversity in readiness, learning styles, interests and talents. All students in mixed-ability classrooms can complete these performance tasks, but their solutions demonstrate very different degrees of complexity, vocabulary, depth and resourcefulness. Teachers' observations document that students enjoy these enticing experiences and are motivated to excel. The tasks require students to demonstrate their thinking and skill mastery as they implement together many of the problem-solving steps to complete the task.

Incorporate well-planned performance tasks in any unit of study, and challenge students to demonstrate mastery of multiple concepts, skills and state standards. These learning experiences are not just something to do on Friday afternoon to provide fun for students. Rather, the intent is to use this strategy often to help you teach more effectively and document achievement levels.

Modeling the Importance of Creative Problem Solving

Remind your students of the real-life application of creative problem solving by showing a brief clip from the movie "Apollo 13" (1995). Focus on the scenes after the Apollo crew's survival problems are known ("Houston, we have a problem..."). They must solve the problem of literally fitting a square peg into a round hole by adapting items in their spacecraft. Discuss how creative solutions often involve using the familiar in unfamiliar ways.

Problem-Based Performance Tasks

The following list is intended to suggest possible tasks that can incorporate language arts, math, science and social studies content appropriate at various grade levels.

Primary grades

* Use only recyclable materials to create an environmentally appropriate habitat for an endangered species or classroom pet. Write observational records of the pet's response.
* Use paper and toothpicks to build a house for each of the three little pigs. Specify sizes for each completed construction, and use a hair dryer to test the strength of each house. Graph and compare the results.

Intermediate grades

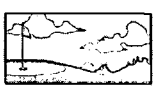
* Create a floating device that can carry a certain quantity and weight of cargo across a pan of water onto a dry surface without human contact. Analyze and discuss attributes common to successful and failed devices.
* Develop inexpensive packaging that prevents a cookie from crumbling when subjected to increasing amounts of weight. Discuss applications in daily life.

Secondary grades

* Use paper clips and paper of different sizes and weights to create airplanes that demonstrate specific physics concepts.
* Use the drawing feature of an integrated computer software package to replicate the geometric features and patterns found in an historical architectural structure.

The Golf Course problem (that follows) is included as an example. It also can serve as a model for developing problem-based performance tasks with your students. The Golf Course is an adaption from *Engaging Creative Thinking* (Kingore, 1998). More elaborate examples with increased applications, variations and complexity are found in the sources listed at the end of this article.

GOLF COURSE
BUDGET SHEET



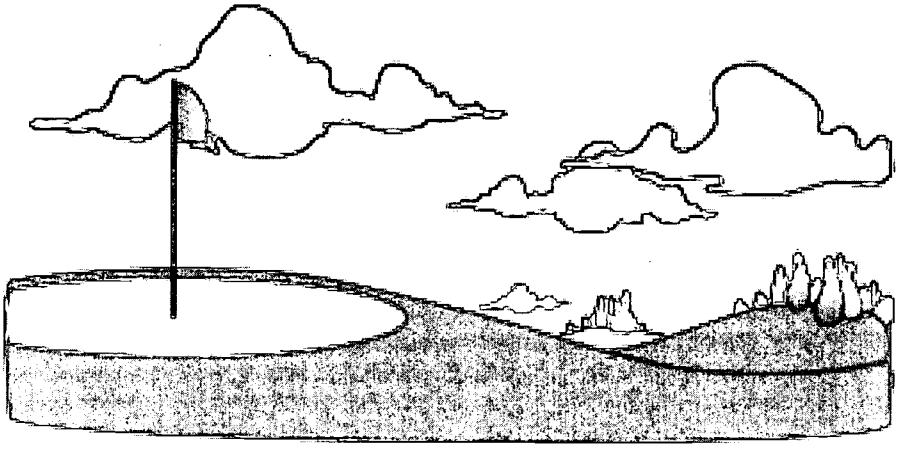
NAME _____ DATE _____

Items used in your course.	Quantity	Fair Market Value	Subtotal
		TOTAL	$
		Budget	$ 0.00
		Difference	$

☐ Budget is under: $_____
☐ Budget is over: $_____

Kingore, B. (1998). Engaging Creative Thinking: Activities to Integrate Creative Problem Solving. Austin, TX: Professional Associates.

THE GOLF COURSE



PROBLEM

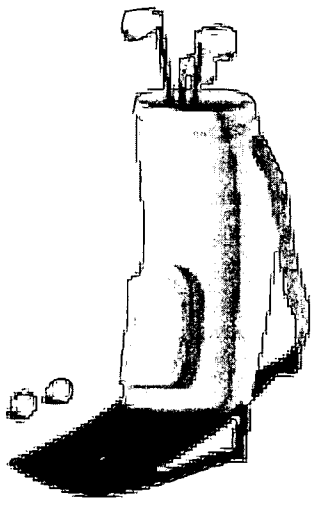
Work in teams to construct one section of a miniature golf course using trash and recyclable materials.

MATERIALS

* Masking tape—one roll for each team
* Scissors—one for each student
* Recyclable trash for construction materials, e.g., aluminum cans, boxes, cardboard, plastic containers and newspapers
* One golf ball for each student
* Students bring dowel rods or yardsticks to use with recyclable materials to construct golf clubs

CRITERIA

* Each hole, from tee to fairway, green and cup, must be designed within a space of three feet by three feet. (Variation for older students: In what shape might the team design the hole to involve an area of nine to ten square feet while creating the greatest challenge for players?)
* The hole must be constructed from recyclable or reusable items.
* Each hole must have barriers to keep the ball contained while in play.
* The ball must change elevation while in play. (Variation for older students: The ball must change direction while in play.)
* Each team devises a cup on the green that will stop and contain the ball.
* Due to the limited capital for this project, the total construction cost of each hole must not exceed 69 cents. Document your cost by completing a budget sheet listing the fair marhe fair market value of each item used in construction, e.g.,5 cents for an aluminum can.



CONCEPTS AND SKILLS

* Language Arts: Listening, oral communication, reading and following directions.
* Math: Measurement, budget or spread sheet, calculating area.
* Science: Classify objects from environment, ecology, force, friction, gravity, inertia, deflection.
* Social Studies: Accept responsibility, consensus building, group cooperation, task commitment.
* Thinking Skills: Planning, organizing, comparing and contrasting, analytical thinking, evaluation, synthesis.

GOLF COURSE
EVALUATION

NAME _____ DATE _____

1. Draw and label a diagram of your section of the course to explain how your design used the required area while creating the greatest challenge for players.
2. Explain how each of the following science concepts is demonstrated in the design, construction, or playing of your section of the golf course.

Reflection: _____

Inertia: _____

Friction: _____

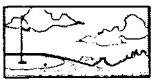
Force: _____

Gravity: _____

3. Draw a diagram of the most difficult parts of the course. Analyze what makes those sections more complex and label the scientific principles demonstrated?
4. What would you change or add to your course if your budget was larger?

Kingore, B. (1993). Engaging Creative Thinking: Activities to Integrate Creative Problem Solving. Austin, TX: Professional Associates.

GOLF COURSE
EVALUATION



NAME _____ DATE _____

AS A TEAM WE:	☹ A little	😐 OK	🙂 Good	😃 Great
Stayed on task.				
Met the required criteria.				
Helped each other problem solve.				
Negotiated differences.				
Tried creative ideas.				
Worked within our budget.				
Worked quietly together.				
Encouraged each other.				

Our team worked well together because _____

One thing we particularly liked is _____

One thing we would do differently is _____

We want others to know _____

Kingore, B. (1993). Engaging Creative Thinking: Activities to Integrate Creative Problem Solving. Austin, TX: Professional Associates.

Guidelines

Rather than only emphasizing creativity and group cooperation, select tasks that accent content, differentiation, ease of preparation and low cost. The following guidelines increase the educational value of performance tasks:

1. Problem-based performance tasks need to be content-driven and incorporate significant learning opportunities.

Avoid using or developing problems that may be fun and entertaining but do not result in significant learning. Instead, think about specific contents, concepts and skills that could be applied through a performance task and plan problems which incorporate several learning proficiencies. It is important to carefully analyze your rationale and objectives for the tasks and to communicate those learning objectives to students in advance of the project ("This is why we are going to..."). Also, consider corresponding with parents to inform them of the learning potential.

2. Problem-based performance tasks encourage many learning proficiencies:

* Motivate students to want to excel.
* Reinforce communication and collaboration skills.
* Encourage decision making.
* Encourage time management.
* Incorporate problem-solving and critical-thinking skills.
* Apply responsibility and organizational skills.
* Allow students to formulate questions and test solutions.
* Develop or incorporate content area concepts and skills.

3. Problem-based performance tasks provide successful and valid learning experiences when they incorporate the following components:

* Higher-level thinking is promoted.

  Open-ended problems take the top off of tasks so participants can operate at higher levels. Students continually analyze and synthesize as they work toward solutions.

* Multiple learning styles and multiple intelligences are incorporated.

  The sub-parts and open-ended nature of each task provides many ways for different styles and intelligences to be validated.

* Complexity and challenge are encouraged.

  The tasks involve varying levels of difficulty and incorporate appropriate levels of challenge to account for individual learning abilities.

* Students are encouraged to become producers, not just consumers.

  Since more than one correct answer is possible, students construct their own solutions rather than simply reinvent ours. Students literally produce that which did not exist before they completed the task.

* Student choice is supported.

  Students choose which roles to assume in each task and select from an array of different extensions to enhance their learning. Both process and products invite student choice.

* Content integration is promoted.

  The learning experiences allow students to connect prior knowledge and new information rather than stress isolated skills. These performance tasks are designed to encourage the application of skills across the curriculum. The Budget Sheet in the Golf Course problem, for example, integrates math computations and economics into the task.

* Active involvement is required.

  Student's minds and bodies are actively engaged in each task.

* Criteria for success are shared.

Clearly established criteria are communicated to the students in advance of the task and used for self or collaborative evaluation. The following are typical possibilities. Use this list to prompt your own decision of the most salient features of the learning tasks: complexity of solution, quality, group cooperation, evidence of understanding, appearance, originality, integration of skills, organization, time management, construction, technology and presentation.

Implementing Performance Tasks

* Emphasize student responsibility and minimize teacher preparation time. Constantly analyze what students should be doing for themselves. For example, students typically should plan, collect and prepare most of the needed materials.
* Accent tasks that minimize the cost of materials. We want students to use higher-level thinking. It takes more problem solving to adapt and manage with less than to simply buy more. Involve students in brainstorming alternatives to materials that are costly or difficult to acquire.
* Avoid a "one-way" attitude. Performance tasks should encourage many different approaches and solutions. Expect to see and hear ideas that vary substantially from what you anticipated.
* Develop some lists of concepts and skills in multiple content areas that may be incorporated as students work toward solutions. Then, organize the performance tasks to maximize those learning opportunities.
* When you have completed a list of concepts, skills and/or state standards for a specific performance task, laminate and post it for visitors to read. That list helps others understand the educational value of what may otherwise seem to be frivolous.
* Discuss the learning objectives and skills with students so they understand the intent of the task.
* After successful experiences with problem-based learning, use performance tasks as center activities. The group of students working at the center collaborates to complete the problem.
* Require students to self-evaluate at the completion of a task and assess their levels of achievement. Self-evaluations may be completed through discussions or written responses.
* As the teacher, reflect about the value of the process and products of each completed task. Metacognition is vital for teachers who intend to maximize the educational value of students' problem solving. Enhance future learning by reviewing students' performances, analyzing their process and progress, and identifying desired changes.

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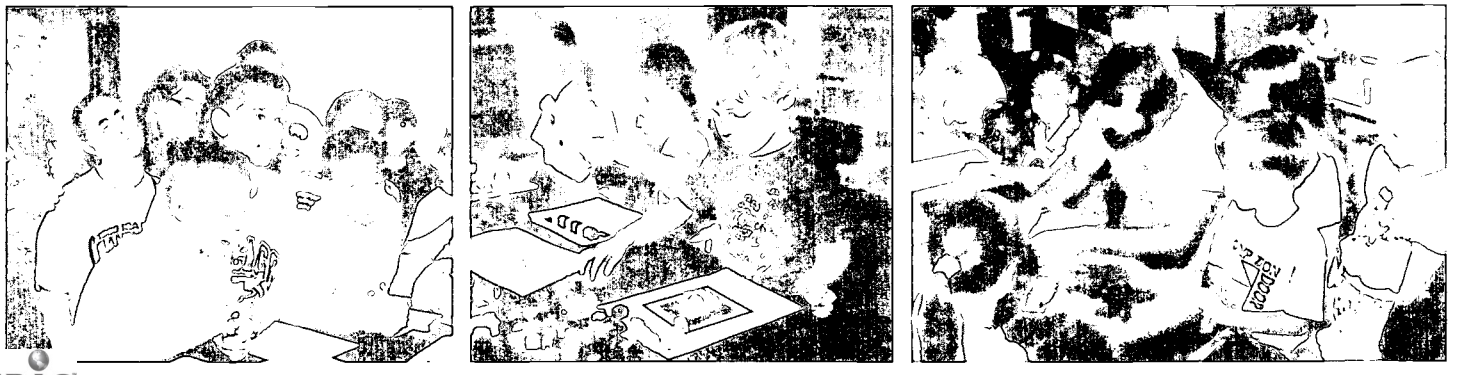

DIFFERENTIATION FOR THE GIFTED: USING THE TEAM APPROACH

Marsha Hestad

In the past twenty years, I have spent time either developing and directing gifted programming or teaching identified gifted children in Texas, Indiana and Illinois. One of my greatest challenges continues to be helping the regular classroom teacher effectively meet the needs of gifted students in his/her classroom. Just who is responsible on a staff of educators, in any school or district, for seeing that these students are challenged appropriately so they can reach their potential?

Since the first year I taught school in the early '70s, I have had a wide range of student abilities in my regular education classrooms. Student abilities ranged from the gifted to the learning disabled child. In most situations today, this gap has widened even more. Now, in any given classroom, we can expect a range of abilities from the gifted to the severe and profound student. Our attention and funding in education is presently focused on inclusion and channeled on meeting the needs of the students at the lower end of the educational spectrum. Attendance at MDCs, annual reviews, IEP updates, REI planning days and quarterly reviews are eating up the time, energy and emotions of special education support staff, regular classroom teachers and administrators in every public school district in our country. Students with IEPs, as well as all other students, deserve to have an appropriate education that will challenge them and make them feel successful. How wonderful it would be if we could give a fraction of the time and energy we spend on students with IEPs to students who are above average and gifted. Think of the benefits that all of our students, classrooms, schools, communities and society would reap! Is it not a basic right of all children, regardless of their abilities or disabilities, to receive an appropriate education at the correct level and pace?

A recent front-page story in the *Chicago Tribune* (10/1/00) shared information regarding a local nine-year-old college whiz. I commend Loyola University for coming forward to accept Sho Yano as a full-time, pre-med college freshman. (Northwestern University and the University of Chicago told him they had concerns about his age.) Sho Yano is what we might call a profoundly gifted child. Though these cases are rare, these children do exist in our society and school systems. How many of them were given the opportunities that Sho Yano now has? How many were told, "He/she is gifted . . .Those children can take care of themselves."

In a number of cases, they cannot. Gifted students are challenged and stimulated when placed together with others of the same ability. If not properly challenged, gifted children can actually regress (Kulik & Kulik, 1982).

We probably will not see funding at the federal or state levels for gifted education that can be matched to current funding for special education for many years to come. However, we can begin to give this population equal attention if we just put our heads together! We can apply some of the strategies we use with special education to help solve problems, implement interventions and differentiate our curriculum to meet the gifted and above-average student's needs.

The pullout model for gifted programming is being replaced in many districts by "cluster grouping" students in the regular classroom. Some districts offer enrichment for the gifted for part of the day or week, or have special classes for the gifted. What do we do with the gifted child the rest of the day, week, month or year? Many districts do not begin a formal gifted program until the fourth grade. What do we do with the gifted or above-average children in grades K-3, or those who were not identified but obviously need to be challenged in the fourth and fifth grades? What is the classroom teacher's responsibility? What is the gifted teacher's responsibility in helping classroom teachers meet the gifted child's needs?

Whose responsibility is it when a parent complains that his/her child is bored and not being challenged? Is it up to the principal, the classroom teacher or the teacher of the gifted? Is it fair to send the parent to the district gifted coordinator, who is often the assistant superintendent or director of Educational Services and given this additional assignment along with his/her other numerous responsibilities?

When teachers or parents come to me because they are concerned a child is not being challenged appropriately, I like to take the same approach I do for any student experiencing difficulty or challenge (academically, socially, emotionally); together with parents and staff, we brainstorm and try to work out appropriate interventions for the child.

Using a team approach can provide the opportunity for everyone to give input and suggestions. It is so much easier to help resolve problems when parents and educators work together as a team for the benefit of the child. The principal must be an advocate for all children and work to ensure that individual student needs are being met. Classroom teachers, the gifted teacher, and other teachers, past and present who have worked with the child, have important information for the team. Depending on the child's needs, I may also invite the psychologist, social worker, instructional resource teacher and other staff members who may be used as resources. The physical education, art and music teachers are also invited so the team has their input regarding student performance and behavior in other educational settings.

No two children are alike, gifted or not. Just as we handle special education students individually, so must each child or case be treated. Some of our inclusion students have curriculum, equipment, materials and services, which are very different from their classmates. Why not do the same for meeting the needs of students who need to be academically challenged? A lack of equal funding for the gifted does not mean we cannot come up with some creative options, resources or additional program and curricular possibilities within our schools.

What are some concerns regarding gifted children that an elementary school might encounter? Here are a few that have been addressed at my school in the past:

* A kindergarten student is reading at the third or fourth grade comprehension level, can do second or third grade math and has no formal instruction in either area. Socially, he is getting along with his peers, is small for his age and still cannot tie his shoelaces. He can complete his second grade sister's schoolwork with greater speed, understanding and accuracy than she can. His parents are baffled and want our help.
* A first grader "hid" her abilities and talents so her classmates and teacher did not know what she was capable of doing. She did not want to be labeled as being different. However, when she went home, she threw a temper tantrum on a daily basis complaining how "babyish" and "boring" school was. Her teacher was stunned when she heard about her behavior at home, as this child was compliant and seemed happy at school. The parent had outside testing completed for the child and discovered she was well above average.
* A set of twins is in a given grade level and only one of them qualifies for our formal pullout gifted program. (This happened with at least two families in past years.) What are potential problems that might arise? How can we be proactive to lessen the impact of any of these conflicts? How will the unidentified child react? What are the parents' concerns, both in the home and school environment?
* To help address meeting the needs of each of the above students, we worked as a team. This helped us put our thoughts together, listen, question, gather information and understand how the child is performing within the educational setting.

Before making any curricular or placement decisions as a team, it is important to explore some of the following questions:

* Parent input: What are the present concerns? What are parents observing at school and at home? What is the problem we are trying to solve? What do parents perceive their child's needs to be? What goals will we try to meet as an educational team?
* How did the child perform in past years? What are the child's strengths and interests?
* What helped to motivate and interest the child in the past? What worked? What did not work? What motivates the child at the present time?
* How is the child performing presently? Are there any behavior changes? (Some gifted children get angry and exhibit behavior problems when they are not being challenged in the classroom.)
* Is the child advanced in only one or two academic areas? If so, how can we address these needs? Sometimes a child may be advanced in math, but at or even below grade level in language arts, and vice versa. Learning disabled children also be identified as gifted.
* Is the child advanced in all academic areas? Is he or she mature for his/her age? Does he/she socialize with older children outside of home? Is promoting the child to the next grade level a possibility?
* Is the child finding success? If not, how can the child be motivated?
* What are other options as far as curriculum? Can we enhance the math/language arts by using additional materials and resources available in our own school or public library? How about using Math Super Stars or Math Olympiads to help enhance problem solving? Reading biographies about famous mathematicians might be a unit to correlate with the math concepts being taught. What genres of literature can be included to expand the themes or units being studied each quarter?
* What resources in our school and/or district do we have to help meet the child's needs? (OM Destination-Imagination; pullout or push-in enrichment in the regular classroom; mentors, both student and adult; future problem-solving, math or chess club, etc.)
* How can staff schedules be coordinated so students can meet with peers in their age group, or older students, in order to be challenged in their area(s) of interest and need?
* What resources are available in the community or in the area outside of the community? (College and university programs for gifted children outside of the school day or on Saturdays.)
* Where can parents go to network with organizations or others to obtain more information regarding the gifted child?
* What interventions will be implemented, and when will we reconvene to discuss the child's progress?
* What are other possibilities and/or programs, within the school and district, in which the child might engage during the school day and/or outside of the school day?
* Who is going to do what task or take on what responsibility, make decisions regarding the roles or tasks for which team members will be responsible?

Whose responsibility is it to help children reach their potential by being appropriately challenged at the correct level and pace? It's everyone's responsibility! By working together as a team of parents, administrators and teachers, we can help to create a challenging, inviting and motivating environment in our classrooms and schools, which will help promote risk-taking and enjoyment of learning for all our students, regardless of their abilities!

For further information regarding the education of the gifted, you can consult the following web sites:

National Association for Gifted Children
www.nagc.org

National Research Center on the Gifted and Talented
www.gifted.uconn.edu

Parent Affiliates, Illinois Association for Gifted Children
pa_iagc@yahoo.com

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LET'S GET REAL™: AN INNOVATIVE PROBLEM-BASED LEARNING PROGRAM

Dan G. Holt and Colleen Willard-Holt

Problem-based learning arises from the constructivist perspective of education, which in turn has its roots in the thinking of John Dewey and Jean Piaget. Dewey advocated immersion of students in hands-on, real-life problem solving as a way of making meaning (1916). Piaget posited that learning occurs when one is puzzled by a situation. Working through that puzzle leads to cognitive change (1985). More recently, Brooks and Brooks stated that "posing problems of emerging relevance is a guiding principle of constructivist pedagogy" (1993, p. 35). Savery and Duffy (1995) stated that problem-based learning might be one of the best exemplars of a constructivist learning environment. The strategy has gained nationwide popularity, as evidenced by the promulgation of several PBL networks (Torp & Sage, 1998), and credibility through a number of studies demonstrating its positive effects on student achievement and motivation (Gallagher, Stepien & Rosenthal, 1992; Stepien & Gallagher, 1993; Stepien, Gallagher & Workman,1993; Torp & Sage, 1998).

Let's Get Real™, a competitive problem-solving program now in its sixth year, exemplifies problem-based learning and authentic outcomes in the context of a business-school partnership. Let's Get Real™ (LGR) challenges teams of students, grades 6-12, to solve actual business problems posed by corporate co-sponsors. In this way it seeks to prepare students for employment and furnish corporate co-sponsors with an untapped resource. Teams of two to six students submit written solutions to be judged by corporate executives, scientists and engineers. Solutions are judged based on practicality or implementation potential, effectiveness of the solution, the cost and benefit of the solution, creativity/originality, development of the idea and documentation of the development of the solution. Teams advancing to the finals present their solutions orally at each sponsor's corporate headquarters.

Topics for problems may include, but are not limited to, the following: environmental issues, manufacturing, distribution, product formulation, chemistry, software creation, facilities design, engineering, marketing, personnel issues, etc. An example of a successful problem from Hershey Foods Corporation follows: "Hershey receives cocoa beans in burlap bags, yielding over one million pounds of empty bags ear. The most efficient way to empty the bags is to split them down the front, making the burlap unusable as bags. Previously, the used burlap had been sold to a carpet company to be used as backing. The carpet company has discovered a cheaper, cleaner material to use for backing. Taking the burlap to a landfill will cost the company $40,000 annually, in addition to being harmful to the environment. What are other cheaper, environmentally friendly ways for Hershey to dispose of the burlap?" The winning team for this problem consisted of four seventh graders (who beat teams of high school seniors). This team appeared at the oral presentation wearing burlap vests and ties, toting burlap toys, with a Power Point presentation. They had investigated a number of possibilities, with the most fruitful appearing to be a landscaping company who would shred the burlap and use it for mulch. Although Hershey did not use the solution precisely as presented, the team's research led Hershey to another alternative that resulted in a significant cost avoidance.

Teams may consist of students from different grades and/or different schools. Sixth through twelfth grade students from all school settings (public, private, parochial, charter, vocational, alternative or home schooling) are eligible. Even students in mentoring programs or scouting programs are eligible to enter. Each team must have an adult coordinator, and coordinators may facilitate multiple teams. **No entry fees** are charged and students from anywhere in the U.S. are eligible to enter.

There are a number of benefits for students and corporate sponsors. Let's Get Real™ is an opportunity for students to apply their problem-solving skills to authentic business situations, to work together in teams, to become better acquainted with and prepared for the business world, to make individual impressions on a major corporation, and to have fun! Regarding benefits for corporate sponsors, Let's Get Real™ provides an opportunity for businesses to become directly involved with young people, to encourage them to study in fields of interest to the corporation, to gain appreciation for the accomplishments of young people, and to derive benefits from the solutions generated by minds not constrained by "the box." Corporations also benefit by publicly supporting education in their own communities.

The following quotes are representative of participants' reactions to the program:

"Let's Get Real™ is an exciting program that can provide several benefits to the sponsoring company at a very low cost. The company contributes to a better educated student who is more aware of the types of opportunities in Corporate America. The company also receives valuable PR and good will. If the problems for the competition are well chosen and presented, the competition also represents a chance of immediate payback of magnitudes higher than the cost of the program. But, perhaps most importantly, meeting bright enthusiastic students and listening to their outstanding presentations is inspiring and provides motivation for the employees who are lucky enough to attend the competition" (Corporate Sponsor).

"The Let's Get Real™ program has become an academic competition that brings authenticity to the performance-based activities that I do in my classroom.... [It] allows businesses to bring realities to the life of my students. Grade is still important to my students, but when they tackle the actual corporate problems, they also know that the problem is real and their proposed solution could be implemented. They know that corporate and business executives will be looking over their problems. This becomes a driving force to my students...[They] understand that what they did meant something beyond a grade; professionals looked at what they did and gave it value" (Teacher).

Although not limited to gifted students, LGR is particularly appropriate for them. The program embodies a number of the NS/LTI Principles for Differentiated Curriculum. LGR involves interdisciplinary content; analyses reveal that teams have integrated language arts, technology, mathematics, economics, science, social studies and the visual arts in their solutions. Problem solving and higher order thinking form the entire basis of the program. The problems by nature are complex; otherwise, corporate specialists would have already solved them. Inquiry and in-depth research are involved as the students investigate their solutions and verify them through experimentation. The students are expected to work independently in creating their solutions, with the coordinator playing a strictly facilitative role. The written solutions and oral presentations are high level products which are evaluated by multiple audiences, including the teams themselves, the coordinator and possibly peers. Ultimately these products are judged by corporate employees embodying authentic audiences. These factors interplay synergistically to create rich and challenging learning experiences for gifted students.

Information on entering the competition or becoming a corporate sponsor may be found at www.LGReal.org or by emailing Dr. Dan Holt at LGReal@usa.com

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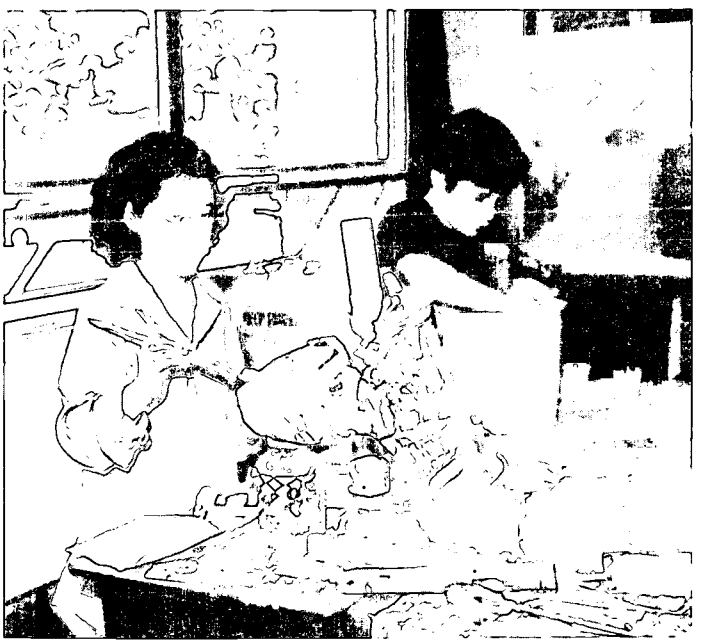

HEY DIDDLE, DIDDLE—THIS CLASS IS A RIDDLE!

Phyllis Salerno

Once upon a time, in a land far, far away, the heat of August was still warming the earth, and the doldrums of summer were ending. This signaled the beginning of another school year and the renewal of a closed environment—the classroom. Some of the students passed the threshold with exuberant joy, while others padded quietly into the gaily decorated room. This was a typical classroom, filled with students of different abilities, different talents and different needs. With summer over, some students dreaded the return to a structured atmosphere. A few students were filled with nervous anticipation—this teacher was supposed to thrive on intellectual activity, to have great insight into cause- and-effect relationships and to have a large knowledge base (House, 1987). The strange new pedagogue also followed the three principles of teaching: 1) Active learning, 2) Best motivation, 3) Consecutive phrases (Curcio, 1987). This educator encouraged all students to understand the issues or problems for themselves, to seek their own individual answers and to explore alternative solutions. This teacher knew how to reach the needs of the gifted and talented students within the regular classroom. Some of the students heard that this schoolmaster had a great sense of humor, so this school year might be truly interesting and stimulating. How were they to know that this new instructor was really Mother Goose?

Quietly, the students enter the classroom and choose their seats. They have taken classes together for a long time and, consequently, their faces are familiar to each other. Goldilocks, Little Boy Blue and Mary, Mary Quite Contrary are busy surveying the room while The Boy Going To St. Ives, Jack Be Nimble and Seashore Sally study the new teacher. They are classmates who have not yet forged friendships based on common interests or goals; they enter as individual nursery rhymes.

Goldilocks is inquisitive as ever. She wonders, "What will I learn? What if I am bored?"

After all, Goldilocks is curious, a dreamer with a spontaneous side. She finds a seat near the door, right next to the window—a possible escape route. Goldilocks hasn't found her focus in life, but her strong desire to look beyond conventional activities, mundane thoughts and traditional events propels her pensiveness to the world beyond these four walls.

Little Boy Blue would rather practice his horn than sit at a desk. Music is his life. He hears the wonderful melodies in his head, those delightful tunes always lulling him to sleep. Little Boy Blue gazes wistfully out the window and sighs, "When can I return to my music?"

Mary, Mary Quite Contrary is contrary. She worries about her future. Has she made all the right plans? What information has she left out? Has she thought through all aspects of her problem? Perhaps she is contrary because she hasn't been able to discuss her situation openly with others in a warm, safe environment. Mary, Mary Quite Contrary anguishes to herself, "Information. I need more information. Can add information to help me?" She quietly doubts her own abilities. She has high political ambitions. Can she achieve them? Mary, Mary Quite Contrary chooses a seat far from Goldilocks, but in the back of the room. She wants her own space to ponder her predicament.

Ah, here enters The Boy Going To St. Ives. On his way to school that morning, he met an interesting man with seven wives. These seven wives each had seven sacks; each sack had seven cats; each cat had seven kits. The Boy Going To St. Ives ponders the riddle. How many are going to St. Ives? Now this is an interesting math problem. Is the answer found by computing the number of wives, sacks, cats and kits? As The Boy Going To St. Ives finds his seat at the front of the room, he continues to analyze his math problem. "Is it seven to the power of.... Or is the answer just one?" His former teachers were not able to address his love of math.

Jack Be Nimble, so very quick, really, truly wishes to learn chemistry. He has discovered how far away the body must be from a flame. He has other theories to develop and prove. "I hope this teacher knows science," Jack mumbles quietly under his breath.

Seashore Sally studies the students scrupulously and says succinctly, "I shall shine if this seer scrutinizes speech." Seashore Sally surveys the seats and selects the stool next to the sage's desk. Her own recitation reflects her love of literature, the English language and etymology, the origin of words.

And so each of the students enters the classroom. Each child is very different from his/her nearest neighbor, but they don't yet understand their individual uniqueness. Mother Goose perceives that some of the nursery rhyme characters feel their strengths, while others obviously need additional encouragement and direction. This teacher thoroughly reviewed all the nursery rhymes and understands each child's talents and needs. Most teachers do not have the luxury of truly knowing their students before they enter their classrooms.

Now the adventure begins. These six students will be Mother Goose's greatest challenge. She will supply information, give direction, listen and help these gifted pupils. Mother Goose already knows their needs, their special attributes, their goals. She knows what issues must be raised to extend their knowledge, their connections to their environment and their community. None of the students recognize her true character. To them she is a new teacher.

How can we help our students in the regular classroom—a classroom filled with wondrous diversity of talents, both obvious and covert? We teachers should embrace the challenge and learn from those who have traveled before us.

Goldilocks sits in the classroom as she reminiscences about her delightful summer. She remembers how she discovered the residence of the Three Little Bears and then unlawfully entered their home. Mother Goose perceives Goldilock's pensiveness and will teach her about the United States Constitution. Then she will encourage Goldilocks and

the other nursery rhyme pupils to create a constitution for the classroom. While they are creating this new document, Mother Goose will teach them about different forms of government. She will call herself a benevolent dictator during structured moments. At other times, she will allow a democratic republic to exist and will have the class refer to the U.S. Constitution. Sometimes she will call together Congress to create and pass bills. Of course, Mother Goose knows that she will have the position of president, and she will either pass or veto the bills. When she vetoes a bill, she will give good, logical reasons for the veto. The students may then rewrite the bill to create a law that will best serve the class. She will divide the class into two unequal groups. The larger group will emulate the House of Representatives, and the smaller entity will be the Senate. Mother Goose slyly remembers that the encyclopedia contains a copy of the U.S. Constitution.

Mother Goose tilts her feathered head towards the fair-haired young lady. "You, Goldilocks, will be in charge of Remembrance Days. Those are the days when the class will have a party in remembrance of a historical event or date. The first party will be September 17, Constitution Day. Would you like to plan the event? I hope that we will have some special music that day." Mother Goose thinks to herself, "Goldilocks may not perceive Little Boy Blue's love of music. His music is delightful and would add interest to the special day. I must speak to Little Boy Blue later."

Little Boy Blue seems to be lost in a world of music. In reality, Little Boy Blue practices his music mentally. Sometimes he composes the tunes and scribbles out the notes on scratch paper. Mother Goose notices the subtle pencil tapping and listens to the humming. "His love of music may be incorporated into the curriculum. If the class is studying a particular time period, I will ask Little Boy Blue if he could research the musical movements of the era. He could recommend pieces for our class's listening time. I must be careful for I know that Little Boy Blue may not follow through with this project. He is known for falling fast asleep in the haystack." Mother Goose knows that music is important to the curriculum because it reflects a given society, culture, and makes each era come alive. The pedagogue looks forward into the year. Her class will study the Revolutionary War, Civil War, Great War, World War II and perhaps the Vietnam Conflict. Exciting music accompanies each of these engagements. Why not expose pupils to the energy or sadness of the music as well as the facts? Why was Swing so important to the 1930's? What were our nation and the rest of the world recovering from and heading into? Mother Goose remembers back to the first time she heard the song "War" by Edwin Starr and felt the unrest of the 1960's. She still listens to current television commercials that use known music for their themes. She knows that students can usually name the commercial, but they are often surprised to learn that the music is not original to that commercial. She will play the music during passing periods and washroom breaks to stimulate learning. Some students may enjoy playing a favorite composition to the classmates.

Mary, Mary Quite Contrary is still quite contrary. Mother Goose feels the inner turmoil of the girl in the back. Mary, Mary Quite Contrary tries to be a carefree young lady who enjoys learning facts, but she also needs to incorporate those facts into an understanding of her life. How can Mother Goose address this need? She will read aloud. This teacher has an inner desire to entertain. Her classroom is a receptive audience, but also a tough room. Each book transports students to another time, another place. Mother Goose prefers to read books that contain difficult language or unusual phraseology. She loves to discuss stories with her students as she reads aloud. She encourages her captive listeners to raise their hands if they don't understand a section, or if they have made a connection to global history, or reached some deeper understanding of themselves. Mother Goose lets the students know that questions and comments may also be written down and left on the teacher's desk.

She ponders, "Which book shall I read first?" Mary, Mary Quite Contrary should hear about fictional and historical figures that have been in dire situations and have overcome their problems. The historical Mary of "Mary, Mary, quite contrary..." was purported to be Mary, Queen of Scots, who in the 1500's was beheaded by her cousin, Queen Elizabeth of England. Mother Goose waddles to her bookcase and peruses her collection. "A simple biography might be nice," she thinks to herself. "It must have a clear direction, a strong heroine who overcomes difficult situations. Perhaps Catherine the Great would inspire my dear Mary, Mary Quite Contrary. I'm so thrilled that many biographies are now written on all reading levels. I'll make sure to choose the right level for my students. If it is too easy, my class will lose interest. If it is too hard, the students will need a great amount of explanation. This book must be just right."

As Mother Goose selects a biography, she glances at a classic tale, Robert Louis Stevenson's *Dr. Jekyll and Mr. Hyde*. "Now that is an incredible book. I must remember to read it aloud sometime later in the year. My curriculum must cover the dangers of drugs, and this narrative certainly deals with that problem. The book for Mary, hmm. Perhaps a fictional book such as *The Lion, the Witch, and the Wardrobe* by C. S. Lewis would be better than this biography. After all, Lewis' book has an interesting connection to world history, and there are sequels. If Mary, Mary Quite Contrary enjoys this book, she may read the other books in the collection." Mother Goose knows how to take these little goslings under wing.

Students who learn about literary figures such as the White Witch from *The Lion, the Witch, and the Wardrobe*, or Long John Silver from Robert Louis Stevenson's *Treasure Island* early in their academic years make stronger connections as their schooling days continue. Gifted students enjoy knowing these connections to Hamlet, Captain Ahab, Phileas Fogg or other literary figures.

The Boy Going To St. Ives thoroughly enjoys math and logic. Mother Goose shuffles through her papers to find those fabulous math contests. "We are so fortunate that the Illinois Math League and the Illinois Council of Mathematics offers these incredible contests. I will use the former contests as practice exercises. We'll even try explaining our answers in written form so that the students will do better on state exams. I'm so lucky that these contests are designed for students from

the third grade all the way through high school. We may even play Dr. Layman E. Allen's game "Equations." I'll have to form teams." Mother Goose continued to analyze The Boy Going To St. Ives. "He may be interested in Equations's forerunner, that game of logic, "WFF'N PROOF." He may enjoy logic, another branch of mathematics, as much as he likes figuring out math problems." Mother Goose fondly remembers her college days as a young spring goose and is glad that she has not parted with her beloved Introduction to Mathematical Logic. This different branch of math was so exciting. Math logic is not the usual calculating of values to find a solution.

Mother Goose recounts the compound sentence her professor wrote on the board: The dog is brown, and the cat is black. For this sentence to be considered true in logic, both simple sentences must be true. Therefore, the dog is indeed brown, and the cat is certainly black. The first part of the simple sentence is designated as "p," and the second part of the simple sentence is called "q." This compound English sentence is then altered to mathematical language, or logic, to become p^q. Truth tables are formed by stating if "p" is true and "q" is true, then p^q is true. If "p" is false and "q" is true, then p^q is false. The Boy Going To St. Ives can then simplify his math thoughts into mathematical language. Mother Goose flaps her wings as she ponders, "Perhaps The Boy Going To St. Ives and Seashore Sally might find a common interest in mathematical logic. She might create sentences for him to translate into mathematical language. This may lead them into codes. I must stock up on some code books." Mother Goose jots down "Buy a book about codes" on her list of things to do. She is grateful that she does not need to buy another copy of that wonderful book, *Flatland*, by Edwin A. Abbott.

Mother Goose examines her typical classroom full of desks, chairs, maps, globes, chalkboards and educational materials. All these wares are part of the wonderful three-dimensional world. "I remember when I belonged to the two-dimensional world, I existed only on paper. Edwin A. Abbott had it all wrong for us, but his thoughts were certainly creative. He wrote about a two-dimensional world in which women were straight lines, and only men could raise themselves from the lowly figures of triangles to the ultimate circle. I remember reading this book in the late 1800's." Mother Goose shifts her position in her heavily padded chair to glimpse at the quiet, brooding Jack Be Nimble.

Jack Be Nimble is constantly thinking, "Why?" Science intrigues him. This pedagogue knows that Jack Be Nimble loves science. She has already learned about his dangerous experiments with fire and candlesticks. "Perhaps I can catch his interest in another area of science. We will study simple machines, and then the students will bring in broken toys and gadgets. By taking apart these worn down items in class, Jack Be Nimble will recognize that complex machines are really just simple machines that work together to create a different invention. We will not forget to wear the approved protective clothing and necessary goggles. We may need to review the Industrial Revolution of the late 1700's to understand the tremendous impact these inventions have on our society. Jack Be Nimble and his classmates would enjoy an "Inventathon." They could analyze a problem and then invent a device to solve it. I'll ask the class if they would like participating in an Inventathon. Then we could vote on it. Mary, Mary Quite Contrary might enjoy working under a democracy."

Mother Goose instructs her class, "Silently sit side by side as I select some sonnets."

Seashore Sally sits anxiously, stretching herself forward. Mother Goose knows that she has Seashore Sally's attention. As Mother Goose continues her quest for sonnets, she reconsiders. Instead of beginning with Shakespeare, she chooses Geoffrey Chaucer (1343?-1400). She states, "Throughout the year I will explain the history of our English words. Many words, such as circle, come to us from Latin. Have you noticed the similarities among circus, circle, circumvent and circumspect? Are you aware that our English language has changed throughout the years? As a matter of fact, most of you will have difficulty grasping the English of Chaucer's day with our modern English." Mother Goose pulls out the tape player and inserts the first tape as she instructs another student to hand out written copies of Chaucer's original work as well as modern translations. Seashore Sally listens in amazement. The words are so different. Mother Goose jumps from her padded chair and waddles to the chalkboard. She begins diagramming a sentence. Then she makes the dissection into a game, a puzzle and a challenge. Seashore Sally jumps to the task.

Mother Goose smiles deceptively; she knows this will be a good year. She will fill her students' minds with facts, fill their ears with music, fill their bodies with enthusiasm, fill their hearts with a love of learning, and she will breathe wisdom, strength, character and love into their very souls. These gifted students will learn and grow.

And so they learned happily ever after.

To those who wish to influence their students in the regular classroom, take the following advice from Mother Goose. I found it worked for me.

1. Teach and appreciate the United States Constitution. Use terms such as democracy, dictatorship, Congress, Supreme Court and president freely in the classroom.
2. Celebrate historical events such as Constitution Day (September 17), the bombing of Pearl Harbor (December 7, 1941), the beginning of the Civil War (April 13, 1861), as well as the end of the war (April 9,1865), and the assassination of President Abraham Lincoln (April 14, 1865).
3. Encourage students to dress up in character, to research and deliver authentic speeches of historical figures or to write fictional letters to each other that represent a time period. Use diluted tea to give the letters an aged appearance.
4. Incorporate music into the classroom. Find a budding musician or singer and encourage his/her talents. Play CDs or tapes of music from particular time periods.
5. Read aloud. Read biographies as well as the classics. Act out difficult passages.

6. Take broken toys or machinery apart. Students must wear protective clothing and safety glasses. Look for similarities in machines.
7. Extend the students' knowledge of math by entering math contests, by playing Equations or by learning more advanced areas of mathematics, such as logic.
8. Read *Flatland* by Edwin A. Abbott.
9. Teach the historical background of our English language. Rent the audio taped Old English version of Chaucer's *Canterbury Tales* from the library.
10. Demonstrate the diagramming of sentences.

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DIFFERENTIATION, NOT A QUICK FIX OR EASY ANSWER

Sally Walker

Have you ever noticed how we in education grab on the latest "buzz" word, the latest idea, and hope that it will cure all our ills? We have had whole language, phonics, cooperative learning, block scheduling, individualized instruction, inclusion, middle school movement, back to basics, standards, pullout programs, push-in programs—and now differentiation. Differentiation is not new. It may have a title with strategies, but it is what good teachers have already been doing. At its core is knowing the student—her interests, learning style and readiness levels. It means taking time—time to know the student and time to know the content of each lesson.

Differentiation is not easy or a quick fix. While there are some strategies that can be easily implemented, the teacher must be clear about content and outcomes. What must students know and be able to do as a result of the lesson? Are there students who already understand the material? Are there students who need more background practice or information before they can be successful learning the content? Are there others who are ready and can learn the information as it is presented in the text? What activities would support the content and insure optimal learning for the students?

Differentiation is the opposite of the bowling ball approach: rolling the one ball (curriculum) down the middle and hoping to hit as many pins (students) as possible. It is like learning to juggle. It is keeping as many balls in the air as you are capable of handling. It may differ day to day, lesson to lesson and student to student. It means grouping and regrouping. It may even imply that the child with very special needs will require individualization.

Activity alone is not differentiation. The activity needs to be purposeful, solidly related to the content and appropriate to the student(s). "Fun and games" is not the purpose or the intent. Learning is the goal.

Standards have become the guide to content. Indeed, they have their place. Having set criteria that speaks to what students must know and do is worthwhile as long as it allows for the tailoring of curriculum and instruction so that students may learn to the greatest extent possible. Gifted education seems to be caught in a conflict between the need to teach standards and the research base that attests the need for specialized curricula for gifted and talented students. The research emphasizes curriculum which is tailored to each student to the greatest extent possible. It needs to be delivered through meaningful instruction, which may mean individualizing differentiation. A problem exists when differentiation is interpreted to be only group oriented, rather than individualized based on student needs. The highly gifted and talented student may need curriculum differentiation above and beyond that differentiated for the rest of the class, or even within a class of other gifted students. In order to meet the needs of some gifted students, the curriculum may

have to be individualized.

Let's look at Gerik. He entered the kindergarten classroom shy and hesitant. His speech impediment made it difficult for others to understand him. When his teacher asked him what interests he had, he replied: "Unicorn mythology".

When she asked Gerik if he was reading he responded: "Of course, isn't everyone in here?"

The teacher explained that everyone was not yet reading on their own, that this was kindergarten. He shrugged and said: "What a pity, that's how you learn the best stuff."

When tested on a simple, quick and easy test of comprehension, it was discovered that Gerik was reading and comprehending at the sixth grade level. His teacher was amazed. It was clear that it would have been a waste of his time to have him go through letter recognition and simple pre-reading exercises. It would not have been fair. What he needed were books of advanced content, resources and support. To continue to develop Gerik's reading ability, he needed higher levels of reading materials, different from the basic kindergarten instruction and even the gifted class. Fair is giving students what they need, not the same for all.

When doctors prescribe medication, they do not treat everyone with the same illness in exactly the same way. The pharmacist does not see the medicine on the prescription and give everyone the same dosage. In the same way, educators must look at their "patients" to diagnose the areas of strengths and needs and prescribe curriculum accordingly. It is not a matter of giving some students more attention and better resources, only of meeting all students' unique learning needs.

Differentiation has been seen as the latest band-aid for our ailing educational system. Hopefully it will survive the test of time and become a permanent device in curriculum construction. Differentiation is a way of viewing students as individuals. It is a way of accommodating learning differences. It asks teachers to look for students' strengths, preferences and learning styles. Some of the time classes are engaged in whole group activities, while at other times there are small groups or individual students engaged in learning. The curriculum and instruction are geared to meet the needs of the learners, whether they are struggling, age-appropriate or advanced in their learning. Different learning opportunities are made available, so that the curriculum becomes meaningful.

Gifted and talented education has been a leader in the differentiation movement. It has been an alternative to the "one size fits all", but should not be accepted blindly as the curriculum "cure" for gifted and talented students. Gifted and talented students are not a homogeneous group. They differ as much within the grouping of gifted and talented as they do from the general population. There is no one curriculum, no one strategy that can meet the needs of this specialized group. Their uniqueness demands that educators go beyond differentiation which groups students for convenience rather than for greatest productivity.

There is differentiation and there is DIFFERENTIATION. When real differentiation occurs, the learner's needs are met. Activity is with purpose and direction. Curriculum, instruction and learner are connected. The groundwork is well established, the foundation is laid and the ceiling is removed.

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DIFFERENTIATION: WHY IS IT SO HARD?

Carol J. Morreale

Many districts are spending money and energy helping teachers develop strategies to provide all children an opportunity to experience appropriate academic challenge. However, teachers have typically found incentive to differentiate only for those who are struggling with the standard curriculum. When a teacher works hard to present nd concepts and then finds that some children are not experiencing success, the teacher feels motivated to make adjustments. They know that if they don't differentiate for the struggling students, those students are likely to give up.

On the other hand, very few teachers view it as a problem when students do exceedingly well in class with little or no effort. There is little incentive to make modifications to the

instructional plan to be sure that high-ability children have an appropriate level of challenge. Often, the teacher is not truly aware of how little effort is needed for these children to succeed, and relieved that at least some children understood the lesson.

In only rare cases are the children even asking for challenge. How many children do you know who ask their teachers to "please make it harder"? Even their parents send a mixed message: "Please challenge my child. Oh, by the way, we still expect straight A's at our house."

Another source of motivation to differentiate might come from observing the results. Certainly, when we differentiate for the struggling student, we see greater success and often improved confidence. What do we observe when we differentiate for the brighter children: Fewer perfect papers? More effort to be successful? It would be great if the children and their parents would celebrate these symptoms of learning.

Our society has somehow learned to measure the quality of education either by the grades, the number of perfect papers or how high the test scores are. So, rather than supporting the teacher's efforts to differentiate for high-ability children, parents of these children get caught up in the "grade game" instead of the learning game. Since Harvard doesn't request transcripts from elementary schools, we should assume that the "grade game" doesn't begin until high school.

As school districts seek to provide differentiation in all classrooms to better meet the needs of a wide range of learners, all of us need to be aware of the obstacles that interfere with our progress. We also need to overcome these obstacles, or differentiation for high-ability children will never become a reality.

Obstacle 1: Differentiating is more work for teachers. Assisting teachers to design units with clear and measurable objectives can be a first step. Providing a wide range of materials to use in the unit would also be refreshing. Usually we give teachers a mixed message—"Differentiate for this wide range of students, and here is your textbook. Don't depart from it."

Overcoming the Obstacle: Districts need to provide ongoing staff development to engage teachers in units that will work for a wide range of students. The assessments must be revised and more fairly measure definable objectives. This takes time and expertise. Budgets need to address the fact that we can no longer provide one grade level of materials for each teacher. A teacher needs approximately ten books or resources at levels below and above the grade level of the students. Differentiating content and/or tiered assignments mean that we all may be studying the same topic, but the level of difficulty of the materials and assignments are better matched to the child.

Obstacle 2: Many high-ability students resist the challenge. When offered the choice between a more challenging enrichment task or the regular assignment, many children will choose to do what everyone else is doing. Students do not want to appear different, nor do they want to work harder. Most of them are quite happy getting easy "A's". (It is important that the enrichment assignment be offered instead of the regular assignment and not as something to do after regular class work is completed. That way, these children won't be punished with double work.)

Overcoming the Obstacle: Staff development on differentiation should include teacher training on how to converse with the whole class effectively. Kids need to know why some children have different assignments. They need to understand the teacher's efforts to make it fair. One way to refer to differentiation is an equal opportunity to struggle. This means

Parent Script To Support Challenge

When students bring home papers, how we respond gives one of two messages: that perfect is good and we should avoid any risk of less than perfect, or that challenge is good and that's how we learn. Therefore, when viewing your child's work, if you have been using an outdated script that sounds like this:

> *"Oh...perfect smiley face, 100%, 'A' again, no errors...Ooops, what happened here? You knew that last week. You must have been careless."*

Then you might want to consider an alternative. First ask your child to sort the papers into two stacks:

> *"Make the first stack represent the papers that you are proud of and that we should put on the refrigerator (or whatever you do with those). The second stack should represent new learning, something you didn't know before; or papers where you struggled a little—papers that aren't so perfect so I can see you are learning, because that's what learning looks like—struggle."*

Then as you go through the second stack, you might say:

> *"Oh, you were learning about butterflies. Tell me about that." Or.... "I can see this was hard. That's great! I'm so glad you have **that** teacher. I can see you are stretching and having to work hard. That's great!"*

If in the first time you try this, the second stack is empty, don't blame the school. Maybe those papers don't come home anymore. Children need time to make the adjustment to what is now rewarded by their parents.

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THE NEED FOR STRUGGLE

Jerry Schecter

The saying, "What doesn't kill us will make us stronger," is particularly important for those we consider gifted. Parents and teachers must be vigilant in providing challenge for their cognitively advanced youngsters. While many very gifted children grow up to be productive members of society, others do not. Some will struggle as adults because they never learned to struggle as children. Others with less intellectual skills will succeed at very high levels. What contributes to these differences? Which characteristics are necessary to help children grow, and how can these traits be encouraged? What are those factors, which impede growth, and how can they be avoided? This article will identify several of these ingredients and offer ways for parents and educators to help gifted children reach their adult potential.

Those who have achieved a high level of success as adults have several common traits. They weren't necessarily the brightest members of their class or school, but were those who learned how to stay on task and to persist in frustrating situations. A review of high school yearbooks found a strong majority of successful adults participated in extracurricular activities. They were involved in clubs, the school yearbook committee, sports and school government. They struggled to balance an active social life with a busy schedule of activities and academics. They were also risk-takers who may have failed several times before achieving success, like Abraham Lincoln who lost numerous elections before becoming president. Macy's department store failed seven times before becoming a success. Thomas Edison, who was believed to be too stupid to learn, tried thousands of possibilities for his electric light bulb before finding the correct solution. Walt Disney was fired from his newspaper job because he doodled. These individuals had many failing experiences before finally getting it right. They were, however, able to struggle through their frustrations, allowing them to learn from their mistakes. Sosniak's study (1997) of successful adults recognized the support received from parents, teachers and peers who encouraged them to deal with frustrating situations while preventing them from "bailing out."

It is rare that gifted children are sufficiently challenged educationally. They are often in classes designed for the average child. This is especially true in the early grades where most children are just starting to learn the sounds of letters and simple number concepts. During a lecture, Linda Silverman, a specialist in gifted education, outlined the stress that a gifted six year old (working on the level of a nine year old) would be facing in a regular classroom. Not only would he have to learn to explain ideas in simpler terms so that he would be understood by age peers, he would also have to wait patiently while others struggle with concepts he had learned some time ago.

Although others are challenged at levels at or just beyond their teachable level, the gifted child rarely has that opportunity. How can these children learn to emotionally deal with challenge if they are led to believe that school requires little or no effort? Because they are not challenged, learning seems effortless. Therefore, if it's not easy for them, they may begin to question their abilities. If one's self-concept is based on being gifted, then why exert oneself and risk discovering what is most feared? Many schools, moreover, would rather not do anything different for the gifted child as this may be politically unwise. If Johnny can receive this service, why not Billy? If a child is eligible for special education, an appropriate education is mandated. However, services for gifted children are not. Schools and classroom teachers have considerable challenges in providing for students of varying abilities and disabilities. Some administrators are under the mistaken belief that providing difficult material for children will be too stressful, or that children will eventually all fall back to the average in a few years anyway. Of course, if children are not appropriately exposed to material at or just beyond their level of competence they surely will stagnate. Others argue that the research supports homogenous grouping of children. These findings are misinterpreted by attributing the results to gifted children despite the fact that bright, but not necessarily gifted, children were included in the study.

Families greatly influence their child's development of important skills, such as persistence and dedication. Children very quickly learn from the model presented by their parents. Parents who deal poorly with their own frustrations rob children of positive role models. Parents who are able to persevere in difficult situations without regression to immature or harmful behaviors present far different role models. Parents who are workaholics and rarely enjoy themselves may teach children that the rewards for working hard are limited or non-existent. Children need to see parents reaping the benefits of hard work balanced with private time. When a child experiences success on a difficult task, the parent should ask the child to explain how he made this achievement. Hopefully he will then be able to see the connection between effort and success.

Additionally, parents need to monitor the messages they give their children about the kind of school or program they have chosen. If, for example, one parent would rather have his or her child attend a regular program and the other disagrees, that child will choose the message he or she wants to hear and will lack commitment to the more challenging program. Another concern is when one or both parents attempt to rescue their children from all unpleasant situations. This often occurs when a parent had a very difficult struggle himself and is determined to prevent any and all unpleasant situations for his children. Other parents put too much emphasis on the product or grade and the child comes to believe that his or her worth is tied to the result. This is especially the case for perfectionists. Children may then "test" their parents' love by purposefully failing or not turning in assignments. Parents may also become too emotionally involved in their child's work and, in effect, own the problem instead of allowing their child to find the solution. This happens frequently when parents cheer and praise much too loudly for their child's successes and become far too emotional and reactive when

their child is not successful. Parents need to encourage effort and perseverance and use each experience as a learning tool.

Some parents of gifted children become too invested in their children's successes and live vicariously through them. This is especially likely when parents find similarities to their own school experiences. For example, a father who was socially rejected as a youngster may anticipate social or emotional difficulties for his child and overreact in trying to prevent a similar scenario. While some preventative measures may be helpful, an overprotective response can be harmful by not allowing children to find their own solutions. These interventions also rob children of an opportunity for individual growth and ego enhancement. As a result, a child may exhibit rebellious behavior as a means of determining whether a parent's love for them is unconditional.

Parents and educators must work together to insure an appropriate educational challenge. It is sometimes flattering to hear that your child is advanced enough to be a classroom helper. He or she may assist others in understanding their work, be sent on errands, spend time marking papers or do bulletin boards. These activities are at the expense of your child's education. Children can't grow and develop the inner toughness to succeed later in life if they aren't exposed to appropriate challenges in their formative years. Conversely, if children feel too much pressure because they are fulfilling a dream their parents had for themselves, they may withdraw or rebel from these activities as a means of testing their parents' real love. The challenge of parenting is striking the right balance. One must be sensitive enough to know the difference between stress and challenge. It is knowing when to provide support and encouragement, and not rescuing children when just a little more effort will bring success.

Children who experience failure and then feel the resulting frustration have the opportunity for growth if they receive the appropriate emotional response from a significant adult. They can learn that while initial failure feels bad, it's not the end of the world. This will be an important lesson later in life. They will grow with the help of encouraging adults when they are not supplied with the adult answer but helped to find their own solutions. They can also learn how to turn a negative experience into a positive one while persisting in difficult times. Succeeding on a difficult task and the process of learning how to struggle will have lasting effects on children's ego development. This will be far more important than continued success on relatively easy tasks. In the tradition of Albert Ellis and his theory on Rational Emotive Therapy (Ellis & Harper, 1961), it is never the event that causes us to feel good or bad but the interpretation we put on it. Moreover, what is learned from our experiences will be far more important for our children when we help them interpret their experiences in a positive and supportive manner.

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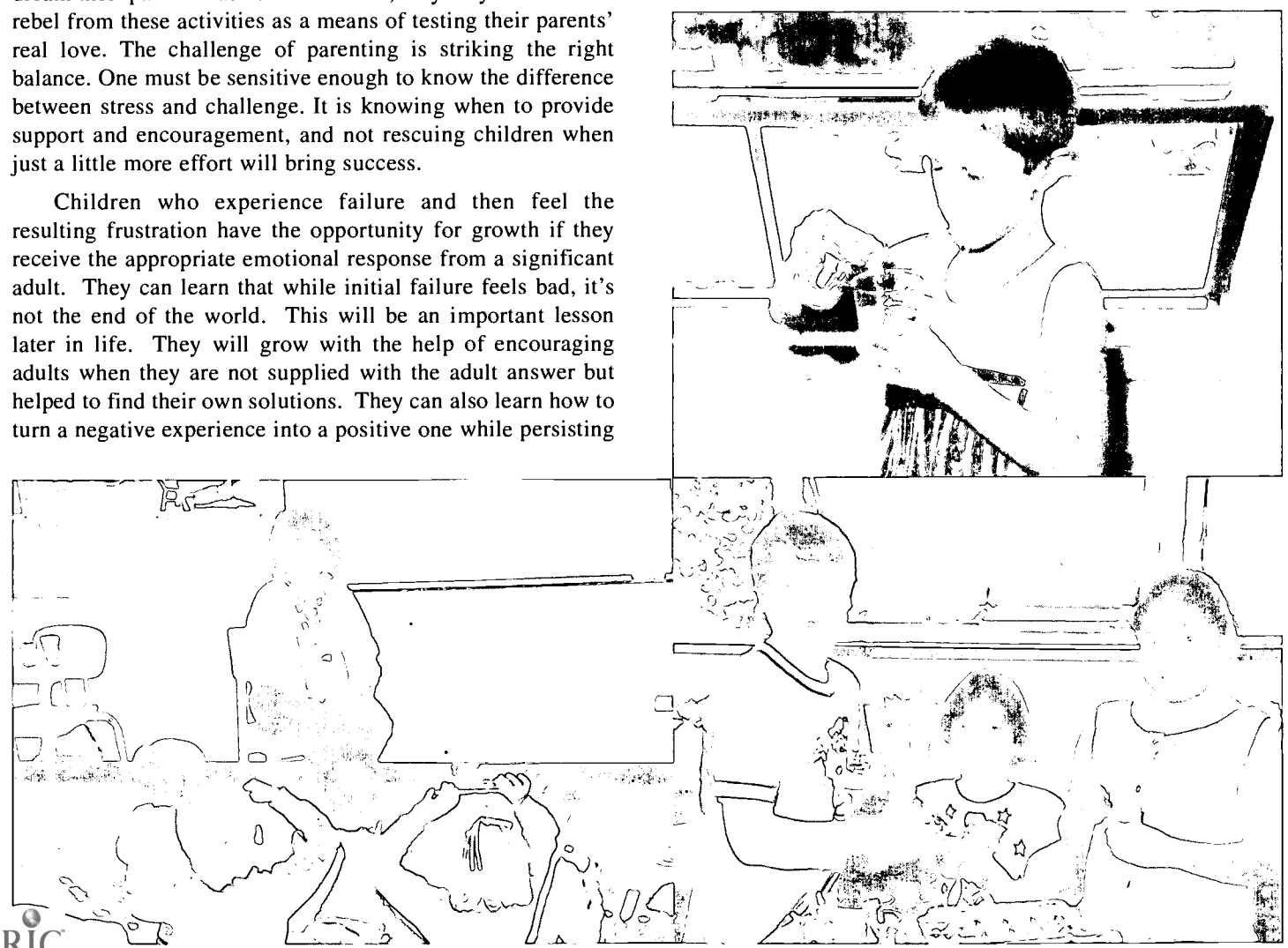

CURRICULUM DIFFERENTIATION FOR GIFTED CHILDREN IN REGULAR CLASSROOMS: A PARENT'S PERSPECTIVE

Judith Harway

In the best of all possible worlds, every child would be placed in a classroom tailored to his or her needs and learning style; every teacher would know how to work most effectively with each individual learner in his or her class; and every gifted child would find school a challenging, nurturing and validating environment. But, as many parents of gifted children enrolled in ordinary classrooms can tell you, we do not necessarily live in the best of all possible worlds.

As the parents of two gifted children enrolled in regular classrooms, my husband and I have had many opportunities to compare notes with other families facing similar challenges and problems. My relationship to this material is somewhat unique, however, in that I am also an educational consultant to a program for gifted children in another school district. This means that I also have opportunities to hear from teachers struggling with issues of enrichment and curriculum differentiation for gifted learners. I have learned to accept that what may seem simple or obvious to an educator trained to meet the learning needs of gifted children, may not seem obvious at all to a teacher accustomed to teaching to the norm. Consider the following stories I have gathered from families of gifted elementary and middle school students in the Chicago suburbs:

Family A requests differentiation of the Language Arts curriculum to challenge their gifted child's abilities. The teacher's reply focuses exclusively on spelling: she says that all children must take the same spelling test because it is part of the required grade-level curriculum. Furthermore, if the child wishes to be tested on more spelling words than his classmates, it is important that no other children be aware of any difference in order to avoid jealousy in the classroom.

Family B requests enrichment across the curriculum for their gifted learner. The fifth grade teacher replies that there are some enrichment materials in a cupboard in the classroom, and that the child may, if she chooses, ask permission to open the cupboard and do more work after she has completed all her other class work for the day. She may not, however, substitute the enrichment work for any regular class assignments.

Family C speaks to their child's first grade teacher about her frustration that the school day is broken up into brief periods for each subject. Their gifted child has an unusually long attention span, and resents the interruptions, especially when the material interests her. The teacher explains that this is how school operates, and that the child is not adjusting appropriately.

Family D is dismayed when their child advances from an elementary school that provides enrichment programming for gifted learners to a middle school that is debating whether or not such programming is necessary. Within a couple of months their gifted child becomes sullen, complains that he hates school, and begins to bring home tests on which he has scored 50 to 70 percent.

There are many possible life scenarios that make rhood schools the most workable option for families of gifted children, whether or not appropriate programming exists to meet their learning needs. It is important to note that not all the stories I hear from families in the same situation as mine sound this grim. As we commiserate and discuss our efforts to advocate for the learning needs of our children, we find ourselves sharing success stories as well (albeit less frequently). I have come to believe, through my experiences as both a parent and an educator, that it is possible for the regular classroom to be a hospitable and healthy environment for a gifted child, provided that appropriate training and support are available for teachers. My purpose here is to demonstrate that, in the absence of adequate programming for gifted children, making an effort to meet their needs in the regular classroom is advantageous to the school community as a whole.

In many school districts, the very term "gifted" is endowed with an aura of political incorrectness. Specific programming for gifted learners is frequently supplanted by the notion that teachers can and should be able to meet the needs of every child within the regular classroom. The clear benefits of "cluster grouping" (Winebrenner, 1992) notwithstanding, class placements of gifted children continue, in many areas, to appear arbitrary. In theory, there is nothing wrong with the idea of curriculum differentiation in the regular classroom, provided that teachers receive the training and support that make genuine differentiation possible. As Sandra Warren writes, "Teacher training (for curriculum differentiation) is essential. Although some intuitively understand what needs to be done, most educators need retraining in developing appropriate curriculum strategies" (1997).

Why can't gifted children in the regular classroom simply fit in with the regular curriculum? There are many answers to this, and they vary from learner to learner. Gifted children need opportunities to extend their learning. Many have long attention spans and crave the opportunity to explore one subject area in depth without distraction. Many gifted children work and process their learning at paces incompatible with their peers. But, whereas one gifted child will work very quickly, constantly pushing for more information, another may be an introspective learner who processes information slowly, considering all the possible implications of what she's learning before moving on.

Most teachers, in my experience, are open to talking about the idea of curriculum differentiation, but often the training needed to enact it is in short supply. Even teachers who are extremely sensitive to the needs of gifted learners may find that their districts offer little or no genuine support for their efforts to enact the curriculum appropriately. For some, teaching to the norm is simply a way of keeping the classroom running smoothly and the work load manageable. Because my own kids spent five years in a suburban Chicago school district where, in every grade but three and four, differentiation is the responsibility of the individual classroom teacher, I have witnessed both the possibilities and the limitations of the lack of specific programming for gifted children. Believe me, having a

teacher who has received training in curriculum differentiation instead of one who has not can make a dramatic difference in a gifted child's experience at school.

My children attended an elementary school in which a number of faculty had the training, experience and maturity to develop meaningful curriculum differentiation strategies for gifted learners. My children also had the good fortune, at least through fourth grade, to be consistently assigned to those teachers' classes and frequently clustered with other children of comparable ability. Their experience convinced me that when teachers receive the training and support necessary to meet the needs of gifted learners, the whole classroom community benefits immensely.

Consider the following stories as a counterpoint to those at the article's opening:

A first-grade teacher finds she has four extremely advanced readers in her class. To challenge them, she selects more complex readings, helps them to structure discussions of their reading and designs a series of assignments for them that encourage higher-level thinking. Drawing on the support of an aide and a parent volunteer, she divides the class into reading groups and periodically encourages each group to present its work to the class as a whole. The advanced reading group writes and performs a play, inspiring the other groups to extend themselves further with creative responses to their reading.

A second grade teacher introduces the idea of research in a unit on Native American life. She takes the time to select research materials for each student that target the level at which he or she can comfortably work independently. In addition, she helps each student design an appropriate project representing the results of his or her research. Each student appears to be doing the same assignment, but the range of activities within that assignment vary greatly based on the abilities of the students. Thus, the three gifted children in the class are challenged to take the research assignment as far as they possibly can, while all the children experience a highly individualized introduction to independent research.

Another second grade teacher finds that a gifted child in his class is passionately interested in one particular science unit. This child's enthusiasm has sparked greater interest in some of her classmates. The teacher offers his class the option of extending the unit for an extra week or two. This means more research and preparation on the teacher's part, but the class is able to explore a subject in more depth than the regular curriculum allows. The gifted child who inadvertently initiated this change is encouraged to research the subject further on her own, and present her findings to the class.

A third grade teacher notices that two gifted children in her class are bored by spelling assignments and tests. She designs assignments that challenge the students to regard their spelling words in different ways—to categorize them, to learn their etymologies or to write a story using all twenty spelling words in five sentences. The assignments are clearly intriguing to other students as well, so she distributes them to everyone. Some students struggle with these assignments at first, but spelling grows in popularity with the whole class.

A fourth grade teacher has a cluster of gifted children in her class. Using flexible groupings and the support of her school's curriculum differentiation specialist, she steers the gifted children into work that develops higher level thinking skills. In addition, she provides these kids with "expert journals", in which they brainstorm areas of interest and specific questions that preoccupy them, pursue independent research and eventually present their findings to the class. The expert journals are so popular with the gifted children that some of their classmates begin asking to participate as well. The teacher provides a journal, guidance and encouragement to any student who asks. Without engendering jealousy, then, independent learning catches on as the cool thing to do in that classroom.

What distinguishes these stories from those at the article's opening is the degree to which the teachers grasp the possibility of using curriculum differentiation strategies to enrich the life of the classroom. Unlike the teachers in the opening stories, these teachers had all received training in curriculum differentiation and had strong support systems available for guidance and mentoring in their schools. The moral of these stories is self-evident: oftentimes, the specialized strategies teachers employ to teach gifted children differently are simply the most creative and intuitive pedagogy. Writing about gifted girls, Joan Franklin Smutny says, "Teachers need to use strategies that allow talent to occur. In fact, the creative teaching strategies that illuminate the hidden talents of gifted girls also enhance the learning of all students." (1998)

While every child benefits from good teaching, it is also true that every child deserves the opportunity to develop to his or her fullest potential at his or her own pace. If the classroom environment engenders boredom and frustration, or inadvertently thwarts a gifted child's natural love of learning, the result may be self-defeating or self-destructive behavior. If, on the other hand, awareness of curriculum differentiation techniques enables a teacher to make a sufficient effort to meet the needs of the gifted child in the regular classroom, every member of the classroom community reaps the rewards. The gifted child experiences challenge and validation, and is more likely to fill a positive leadership role in the class; all the children experience enrichment, peer teaching, greater integration of the curriculum and an invitation to attain more independent levels of learning.

With gifted children, as with any children, there is no one formula that works for all. To make the best educational decisions, parents must know their own children well, and know the particular constraints and needs of their own situations.

Have my children received the best of all possible educations? Have they always experienced the kind of learning and growth that we would hope for in their school experience? The answer to both questions is no. My children could, in many ways, have done better educationally. They were very lucky to have a number of teachers trained in curriculum differentiation in elementary school, and the lack of that training and support for teachers made for a limited and disappointing middle school experience. Do I wish they had been enrolled in a district with a strong program for gifted children? Definitely. But personal, financial and geographical constraints made neighborhood schools the most viable compromise for my family. Because this is the case for many families, it is essential that all school

districts develop an increased awareness of the needs of gifted children and how to teach them most effectively in the regular classroom. For a modest investment in specialized teacher training in curriculum differentiation, and support to enable increased flexibility and enrichment, the school community as a whole will realize a rich return.

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HIGHLY GIFTED CHILDREN AT HOME

Karen Morse

"Quick, what's 7x9?" Ben's mom queried. Seven-year-old Ben knew it immediately. He said he had "figured it out" by making a more complicated algebraic pattern mentally.

His mother then asked about 5x5. Here he took longer, saying that he " just knew that one" —had it memorized. Ben explained, "It's as if 5x5 isn't enough to wrap my brain around, and figuring it out gives my brain cells more to do." Ben continued, "I think there is a boredom factor involved. If it's inside an algebra problem, I seem to know it faster. My subconscious knows it but won't tell my conscious for efficiency reasons. If I knew I was doing arithmetic, I probably wouldn't be able to do it as fast."

Ben's second grade teacher wasn't ready to let him explore algebra because he hadn't yet mastered the basics. Ben kept his father's algebra book in his desk at school for free reading time. However, Ben, like many highly gifted children, finds simplicity in complex ideas, and was actually more able to solve the difficult problems than the simpler problems generally suited for second graders. In fact, it was the simple problems that confused him. As he so eloquently expressed it, it was as if there wasn't enough to wrap his brain around. Ben is now a home schooler. He is profoundly gifted.

While driving with his mother from school, seven-year-old Chris explained his theory for solving multiples of five. His mother, who knew he'd been working on the times tables, asked: "Have you been taught the fives yet?"

"No, but I know some," Chris answered.

"What's 9x5?" asked Chris's mom.

"40," Chris answered.

His mother thought she'd offer some strategies for Chris to consider. "One way I do it is to keep in mind that any even number times 5 ends in 0, and any odd number times 5 ends in 5." With this advice she asked, "So what do you think you would do to solve 9x5?"

Chris thought quietly for some time. "Actually, I have a better way. "Half of 9 is 4.5, so 9x5 is 45. You just divide any number by .5 and put the numbers together." Chris couldn't articulate his procedure. He couldn't even explain that .5 meant half. He intuitively knew it. Memorizing the times tables was odious without the complication needed to make it stimulating. Chris found it more efficient, complicated and thus interesting to approach the solution from another angle. Now eight, Chris still hasn't memorized all of the tables, but he has developed his own strategies to shoot them out just about as fast as the child who has learned them in traditional rote fashion. Chris is now a home schooler. He is exceptionally gifted.

Five-year-old Emily was seated toward the back of the church during a friend's wedding. When the minister asked, "Who gives this woman to be a wife?" Emily didn't see or hear any response, and so from her pew she raised her hand, enabling the ceremony to continue. When asked about it, she responded sadly that "no one in the whole church wanted the bride to get married." Emily is home schooled. She is highly gifted.

Individuals who score above IQ 145 are considered highly gifted. The range of 90 or more IQ points beyond 145 includes the exceptionally gifted IQ 160+, and the profoundly gifted 180+. Silverman (1994) found that the highly gifted are as different from their moderately gifted peers as the gifted are from average learners, and encompass a range larger than their mentally handicapped counterparts. They have value structures so different from their chronological peers that they are able to make greater sense of the world and the disparity between their perception of it and that of the average learner. They seldom seek popularity or acclaim and often prefer isolation as a catalyst for much needed quiet reflection. In fact, because of their modesty, researchers think that there are more than 25 percent of the highly gifted population who remain unidentified.

There is no single profile of a highly gifted learner. "They seem to be characterized by their uniqueness," and are "almost impossible to know" (Meckstroth, 1994). Most of our nation's schools, in the way that they now function, can't begin to address the breadth of needs of the highly gifted. For these children, who are three to five standard deviations above the norm, a traditional school setting is almost always an uncomfortable and inappropriate place. Not only do highly gifted children see differently, but they also see the detail of the world that others don't see at all. "We all see the world through some kind of lens. Gifted people see the world through a microscope. Highly gifted individuals see the world through an electron microscope" (Tolan, 1990).

When parents discover that their child is highly gifted, it

stirs up a myriad of emotions including pride, joy, clarity, frustration and fear. The guidance from experts is limited and local support is almost unheard of. Parents most often feel desperately alone in finding an understanding ear and sympathetic shoulder. The parent then, must become the expert.

A few common characteristics among the highly gifted have been noted in research: a fascination with words and ideas; being argumentative, not for the sake of arguing, but rather because of intense conviction of their idea; the ability to perceive many sides to an issue; metamorphic thinking; and the ability to learn in great intuitive leaps. Many highly gifted individuals express concern for early moral and existential issues (Silverman, 1994). A three year old who walked into a convenience store with her mother noticed a teenager on her way out. Seeing that she was expecting a baby, the three year old said to her mother, "Mommy, that's like a baby having a baby" (Kearney, 1994).

Jonathan's grandmother was sharing tales of a particularly rambunctious and troublesome boy in her third-grade classroom. As she wondered aloud what to do about this student, five-year-old Jonathan responded, "Just love him." While watching a Lassie movie, this same five year old noted that the antagonist was greedy for gold because he was sure that would make him rich. He leaned over to his family and said, "No way! Love makes you rich."

Even within the highly gifted range, there is tremendous variance of ability. Lovecky (1994) found that while some individuals in the IQ 158+ range may have overlap of characteristics of profoundly gifted children, it is not to the extreme of profoundly gifted individuals. Individuals with IQ 170+ have an insatiable need for precision, so much so that it can hinder their progress and they may be labeled as "slow, easily distracted or inattentive." This need to be so analytical can almost retard functioning at times.

Like Ben, Chris, Emily and Jonathan, these gifted of the gifted are the individuals who find simplicity in complex ideas and can make simple ideas complicated. They are the empathetic philosophers who cry themselves to sleep in mother's arms while lamenting over historical issues and the impact of slavery on society, appalled with the inhumanity of it all. These are the children with exceptionally early memory, recalling experiences that occurred even before they had language. However, Leta Hollingworth (1942) helped us understand that prodigious children learn basic skills at a pace similar to their moderately gifted and average chronological peers, but that the complex ideas presented are what leave others behind.

In a classroom of 25 to 30 children, it is hard for even the best teachers to meet the individual needs of every child. Children with learning disabilities have daily mentors and abbreviated course work. Highly gifted children in our country are the only group of children who receive no federal mandate for a free and appropriate education. Full inclusion classes are the norm rather than the exception in this country, but the diversity and variance of abilities in a regular inclusion classroom is gaping for the child who needs rapid acceleration and engaging material. Many schools are unyielding when it comes to accelerating work within the classroom and use the "What would we do next with your child next year?" excuse. ...er, even if agreeable, curriculum acceleration, early entry, or grade skipping isn't always enough for the child who may be working as much as five to eight years beyond his classmates (Gross, 1993). "To become intellectually accessible to all students, public schools must provide access to the full range of curriculum, preschool through college" (Kearney, 1996).

Effective teaching must involve a sensitive assessment in the learning process and a presentation of problems that slightly exceed the level already mastered. If the work is too easy, it produces boredom and lack of task commitment, which leads to underachievement. In fact, in the last 40 years, the textbook level has dropped three grade levels (Gross, 1999).

About grouping, Gross says that inclusion is an administrative convenience, not an effective educational practice. Students of high ability placed with other high ability students increase in their self-confidence, achievement, attitude toward school and attitude toward the subject matter (1999).

Reasons some administrators and even teachers and parents give for not grouping by ability are: 1.) It is undemocratic, and adversely affects others, like the sun covering the stars, 2.) Students must learn to work together, 3.) Students must be left in the classroom as mentors and models, 4.) It segregates students, 5.) It causes students to be more conceited, 6.) It damages the self-esteem of others (Gross, 1999).

Gross gave this scenario: There is in this country one very significant example of high ability grouping where the members get the highest level instruction, are continually challenged, have the finest, most talented mentors with them consistently throughout the learning process, travel internationally because of their ability, and are accelerated and advanced beyond others. Can you guess? The Olympics. If it is intellectual ability grouping that is needed, we call it elitist and exclusive (1999).

The process of learning is what makes all the difference in taking giftedness to talent, says Gross. The process can instill motivation, initiative, interest and perseverance. Self-esteem comes from doing something you never thought you could do. When self-esteem goes up, motivation and achievement go up too. So, as teachers, we must give these students something to reach for. We must stop looking for the weaknesses we want to fix, and look for the strengths to enlarge. Doing work the student already knows doesn't enhance self-esteem.

Gross makes an interesting observation, explaining that in America, giftedness benefits the person who is gifted and the people he/she chooses to associate with. In a socialist or communist country, it benefits everyone. So China, Israel and Russia have very strong programs. She asks, "If we don't serve the high abilities of children today, who's going to look after their low ability children?"

In Silverman's (1994) research on personality types, she noted that while personality types found within the general population of the U.S. are 75 percent extrovert and 25 percent introvert, among the highly gifted those percentages are almost exactly the reverse. For the highly gifted child who works quickly, efficiently and brilliantly in the quietude of his own thought, mixed ability grouping can be stiflingly unproductive and frustrating—curses to cooperative learning and whole group instruction! Mixed ability groups are usually carefully balanced with a lower student, two average students and a high student.

There is usually a student who is in way over his head and just doesn't get it, and perhaps another one who doesn't feel like putting out the effort. There may be a child or two in the group who is fully engaged and excited about the possibilities of the activity, but it's often the highly gifted child who pulls the weight and learns little more than how much they don't "fit." It can be exhausting rehearsing over and over for others how to carry out the plan efficiently and effectively.

If the average group grade for cooperative groups is a B, while individually it's a C, guess who brings up the grade, but has to take the B? Sweller (1994) found that if information is given too quickly or too slowly, it doesn't go into memory. This means that the highly gifted child is receiving information too slowly and the low students are receiving the information too quickly, so it's really not optimal for anyone but the average student.

To some, the gifted individual may seem conceited and rude, when actually they just need to have time for themselves and reflect on ideas in their own space. In a group of highly gifted, the dynamics are completely different than in mixed ability groups. There might even be some head butting because of many strong personalities and good ideas being expressed. But research shows that these groups are more productive and motivated (Kulik, 1992). There is evidence of improved productivity even among the moderately gifted. "Programs of enrichment and acceleration, which usually involve the greatest amounts of curricular adjustment, have the largest effects on student learning. In typical evaluation studies, talented students from accelerated classes outperform non-accelerates of the same age and IQ by almost one full year on achievement tests" (Kulik, 1992).

Early accelerated placement, access to mentors and counselors, flexible pacing and valuable enrichment experiences are only possible solutions that are few and far between in finding a good fit for these deserving bright lights. The intellect of highly gifted children develops anywhere from one-and-a-half to two times the rate of their chronological peers (Hollingworth, 1942). With this knowledge, how can we expect them to not suffocate in a chronologically matched group?

The highly gifted child is more likely to choose solitary play over chronological peer interaction because of the nature of their peers' play. They may be labeled as loners, immature or unsociable, but it is actually their social maturity that causes them to remove themselves from an activity that offers no intellectual fuel.

"These young children of extremely high intellectual acumen fail to be interested in 'child's play' for the same reason that in adulthood they will fail to patronize custard-pie movies or chute-the-chutes at amusement parks. It is futile and probably wholly unsound psychologically to strive to interest children above 170 IQ in 'ring-around-the-rosy' or 'blind man's bluff.' Many well-meaning persons speak of such efforts as 'socializing the child,' but it is probably not in this way that the very gifted can be socialized. The problem of how the play interests of these children can be realized is one that will depend largely on individual circumstances for solution. Often it can be solved only by the development of solitary play" (Hollingworth, 1942).

Our political and social system is based on democratic principles. The school as an extension of those principles must provide an equal educational opportunity for all children to develop to their fullest potential. But equal opportunity doesn't mean that everyone gets the same instruction. It means allowing gifted children the opportunity to learn at their level of development. For truly equal opportunity, a variety of learning experiences must be available at many levels, even within a gifted program, so that all students can develop the skills and abilities they choose and for which they are ready. Each person has the right to learn and to be provided challenges for learning at the most appropriate level where growth proceeds most effectively.

Hollingworth (1942) notes five special problems of general conduct which the most intelligent children face: 1.) To find enough hard and interesting work, 2.) To suffer fools gladly—not sneeringly, not despairingly, not weepingly—but gladly; in other words, learn how to tolerate the foolishness of others; failure leads to disillusionment, misanthropy and the ruin of potential leaders, 3.) To keep from being negativistic toward authority, 4.) To keep from becoming hermits, and 5.) To avoid the formation of benign chicanery.

Highly gifted children of IQ 140+ enter kindergarten knowing about half of what will be taught that year, while children of IQ 170+ will have previously learned all that will be taught in kindergarten (Hollingworth, 1942). Burks, Jensen, and Terman (1930) noted that "The child of 180 IQ has one of the most difficult problems of social adjustment that any human being is ever called upon to meet." Because of the limited resources and experts available to assist highly gifted children in schools, many families are turning to home schooling as a means of better meeting the diverse needs of their highly gifted children.

Meadows, Abel and Karnes (1992), in their study of 40 home schoolers in rural Mississippi, found that 20 percent of the families were home schooling "to meet the needs of a highly intelligent child." Similarly, Kearney (1991) found that in her work with a group of 46 highly gifted children, that 22 percent were currently home schooled and that 43 percent had been home schooled for a portion of their K-12 school experience.

Home schooling a highly gifted child won't be easy. Greason (1994) notes what parents say about their highly gifted kids: there is always an element of exhaustion, they ask endless questions, and they give credence to reincarnation because they couldn't possibly have learned so much in one lifetime; they never sleep and they exhibit tremendous asynchronicity, acting like a three year old at breakfast but twelve while reading the newspaper—not knowing what age they will act at any given moment; their giftedness permeates everything they do; parents feel isolated because they lack commonalties with other parents and it may stir up unpleasant memories from unhandled issues of their own childhood giftedness.

Of parenting, Miraca Gross shows a bell curve explaining that if giftedness comes from excellent parenting, then slow learning comes from excellent parenting (1999). But "giftedness is no respecter of society, culture or parenting. We certainly can and should enhance and nurture our children's ability, but we did not create it by reading Moby Dick to our three year olds." In a summer archaeology class for gifted children, seven-year-old

Christine was digging for buried treasure when suddenly she jumped up and declared it was the "Purloined Letter." Obviously she had been exposed to Edgar Allan Poe and transferred that experience to her own.

Finding the right match of schools for highly gifted children may require membership in the "School of the Month Club." Trying to balance an appropriate school experience with affordable tuition and in a practical location can prove to be a harrowing experience and sometimes entails investigating an exhausting number of programs. The first day of a new school experience brings hope; maybe this school will be the one. But after months or even years of having their children leave for school in tears and return home in anger, day in and day out, from a myriad of programs—even gifted magnet programs—often leaves parents feeling exasperated. Those who are fortunate enough to be more decisive from the beginning feel that home schooling is the best option and never join "the Club."

The ultimate goal of a differentiated curriculum is that it recognizes the characteristics of the highly gifted, provides reinforcements or practice for the development of these characteristics, and extends the recognized characteristics to further development. After solutions fail—such as approaching teachers, sharing articles and curriculum materials, using rapid acceleration and, when appropriate, early high school or college entry—home schooling may be the last option.

At six months, Jonathan could sit on the floor bouncing in rhythmic time to music played on the radio. By two years, Jonathan knew all of the instruments of the orchestra and could easily identify their sounds. He was particularly fond of the oboe, as a friend of the family played that instrument. On his way home from a one-hour symphony, he heard an oboe concerto on the car radio. "That's Larry Timm," remarked Jonathan. It was indeed the same principle oboist he had just heard at the concert.

As a preschooler, Jonathan spent hours "conducting" orchestras with his fingers and leading marching bands of stuffed animals. He began piano lessons at five and was quite adept at his own "composing." He easily recognized works of particular composers. At eight, Jonathan read all that he could find on trumpet players and famous jazz and ragtime era musicians. He learned the components of a trumpet and knew all the notes before ever holding a trumpet. His parents agreed to rent a trumpet for a time, and although the sounds were not completely melodic, he could create many of the notes simply from reading about the hand and mouth positions. A school assignment asked the children in Jonathan's third grade class to prepare a "How To" report. Jonathan was excited and knew just what he wanted to do. He spent hours and hours of time devoting himself to a report on the history and use of the trumpet for his classmates. On the day he was to present his report, Jonathan's teacher was absent and the substitute had him share the information. Other students shared the results of their "How To" reports in two or three minutes on such topics as "How to Make Chocolate Pudding" or "How to Make a Paper Airplane." He was given the same five minutes to share both his seven-page report and demonstrate the instrument, "because it wouldn't be fair to give him more time than the others." Jonathan hasn't touched the since.

Home schooling is an option that can provide the highly gifted child with an accelerated curriculum, flexible pacing, meaningful enrichment, substance and depth in areas of strength and interest. Without an engaging and stimulating learning experience, problems abound. Precocity, complexity and intensity are identifying characteristics of highly gifted children. Depression, illness, anger, loneliness, frustration, stress and anxiety are all too common results of a system not prepared to deal with this population. The result is a "bad fit." Sadly, there are far too many highly gifted children who leave school because they feel unwelcome, not valued and grossly undereducated. In the classroom, boys may become the class clowns to seek attention; girls may hide their talent in order to fit in socially. There is no place for them in an inclusive system that was designed to integrate children with disabilities into the regular classroom. Until schools choose to include appropriate accommodations for the very gifted in their "full inclusion" system, they will continue to leave the system (Kearney, 1996). For gifted children who are twice exceptional—gifted and learning disabled—school holds even more disappointment. Most often their disability is masked as they may still achieve above grade level and thus do not qualify for individualized educational plans.

All parents want their children to be happy and meet well with society. So if they don't "fit," how do we help them become socially acceptable? The question parents of home schoolers are most often confronted with is, What about socialization? The use of the word "socialization" vs. "social development" is noteworthy. What we're really after is for our children to be able to effectively interact with a variety of individuals. As Americans we want our individuality, yet we're constantly trying to make everyone a round peg. Stephanie Tolan says it beautifully, "If we can't all be round pegs, then at least shave off the corners enough to fit the square pegs into the round holes. Really, isn't it just that we want children to be happy and productive contributors to society and to look beyond themselves to the largess of the world?

One of the most valuable benefits of home schooling a highly gifted child is the opportunity to find intellectual peers who are also chronological peers. There is little more empowering than finding that you are not the only eight year old who daydreams about quantum physics or molecular biology, and that you no longer have to pretend to like GI Joe in order to have a companion. Too, multi-age home-schooling groups, even when not geared toward gifted, are much more tolerant of children with differences, and activities tend to focus more on interests and ability rather than on ages.

School plays a very important role in our society, and there will always be a need and benefit to some degree of group instruction. But it can't be all things to all people. America was founded to celebrate the individual, to encourage independent thinking and expression of talent and ability. We all know the stories of Edison, Einstein and Lincoln, bound for failure within the school system, labeled as inept and deficient of meaningful intelligence. Yet hundreds upon thousands of our world's leaders, contributors, thinkers and inventors were unsuccessful playing the school game, yet in the comfort of a nurturing home-school environment were able to reach for the stars and become tremendous contributors to society.

Webster defines education as "the act or process of imparting or acquiring general knowledge, developing the powers of reasoning and judgement, and generally of preparing oneself or others intellectually for mature life." Comparing education and culture, Webster continues, "Education and culture are often used interchangeably to mean the result of schooling. Education, however, suggests chiefly information acquired. Culture is a mode of thought and feeling encouraged by education. It suggests an aspiration toward, and appreciation of, high aesthetic ideals. The level of culture in a country depends on the education of its people." Isn't what we're after then, a culture of well-informed citizens who have developed power of reasoning and judgement? If children don't fit well into the system that has been arbitrarily constructed to educate the masses, then school can actually mitigate against their learning. We can assault our students with so much schooling that the result is a society with much less of a culture.

Certainly there are many nurturing teachers who are masters of their topic and respect talent development. In fact most teachers are probably effective with most children. However, we can also probably agree that all teachers are not good for all children. So, we can teach our children to have a personal self-competition for standards of excellence-that they define. We would be remiss if we did not teach the value of hard work with the idea that it is not ability that matters most, but the distinction of how much effort is put into the ability. And most definitely we can help them plan leisure time that is constructive and engaging. We must talk to our kids about their giftedness and help them to understand our complicated world. Teach the value of reading. Reading constantly to children will help them do better on school-related learning, strengthen family ties, enhance social and emotional development and improve vocabulary. And you can ask your children to share their three wishes for the world. Record these wishes and discuss what can be done individually to begin accomplishing their goals. Then, commence work to make these wishes come true, even if in a very small way. Giftedness does not make one admirable or contemptible, just different. It's what is done with that difference that either blesses or burdens the world. What are we teaching our children?

Calvin, an eleven-year-old home schooler, makes the following observations: "In what I refer to as the 'Popular Theory' I hold that every person feels a need to 'fit' somewhere. While some people are comfortable marching to their own drummer, others are trying to fit by following what those around them are doing. However, in these situations, it often seems that no one in particular is leading. They follow a virtually invisible stereotype; someone that doesn't really exist. They follow an idea of fear that they won't fit in if they don't do what everyone around them is doing. In home schooling, there are fewer people to impress. In our home schooling groups, the kids seem to be more confident to express who they are. They've had a chance to figure out who they are without the pressure of outsiders defining them or criticizing them until they're so beaten down that they lose their own identity. Rather, they act the way they want to and appreciate differences in each other. The Popular Theory is almost eliminated in groups of highly gifted kids, because we're all used to not fitting into the norm. There is no invisible person to follow. We understand that a fish out of water cannot easily get back in. Be it slow or fast everyone has their own pace. A good friend is one who walks at relatively the same pace." Calvin is highly gifted.

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LALUCE: FAMILY PERSPECTIVE OF THE DEVELOPMENT OF A GIFTED CHILD

David J. Mitchell

I am the father of a highly gifted young man, LaLuce Mitchell. At the time of his birth fourteen years ago, LaLuce's prospects were not so favorable. He was born one month premature, with liver function problems and a prematurely fused skull suture (joint) in his forehead, which was deforming his head toward a triangular shape. Although the liver function problem, related to his premature birth, soon cleared up, the suture problem was much harder to fix. At age five months, LaLuce had skull reconstructive surgery. He came through it well, however. After a short recovery period, he has had no further problem except for a slight vision impairment that sometimes decreases his depth perception.

Family History

In addition to myself, LaLuce's immediate family consists of his mother, Angelika, and his younger sister Celia. Other living relatives include his paternal grandmother, seven aunts, uncles and great aunts, plus many cousins. As a father, I am unusual in some ways. I am fifty-three years old and have used a wheelchair since I had polio at age five. I have a bachelor's degree in general engineering (1972), a bachelor's degree in geology (1999), and I am a graduate student working on my master's degree in geology. Angelika and I married in 1985. I have always made a living by using my mental skills because my physical strength is limited. I have one arm that has near-normal strength. My physical limitations prevent me from doing most of the athletic training skills that most fathers do with their children. My wife tries to make up for my shortcomings, but her athletic experience is limited.

Angelika, forty-three, is originally from Austria and came to the U.S. in 1980. She was trained as a music teacher in Austria and has a bachelor's degree in nutrition. She teaches music privately, has her own business as a storyteller and clown, and works as a substitute teacher. Celia is ten years old and in fifth grade. Although she has not been tested yet or documented as such, I believe that Celia is also gifted. Her strong areas, however, are different than those of LaLuce. Although she is also fairly strong academically, Celia's greatest strengths seem to be in handling animals, as well as in music and the creative and performing arts. She is very interested in science and wants to be a veterinarian.

Testing and Scores

LaLuce was tested by the Las Cruces, N.M., school system near the end of fifth grade. He was found to be exceptionally gifted at that time. His scores were: Wechsler IQ, V. III: Verbal IQ 131, Performance IQ 107, Full Scale IQ 122, Index Scores VC 127, PO 109; Woodcock-Johnson Achievement - Revised (WJ-R): Broad Reading Grade Eq 11.7 (99 percentile), Broad Math Grade Eq 8.1 (98 percentile), Broad Writ. Lang. Grade Eq. 14.5 (99 percentile; WJ-R Subtests: Letter-Word Ident. Grade Eq. 10.7 (98 percentile), Passage Comprehn. Grade Eq. 14.2 (99 percentile), Calculation Grade Eq. 6.4 (82 percentile), Applied Problems Grade Eq. 11.6 (99 percentile), Dictation Grade Eq. 12.0 (99 percentile), Writing Samples Grade Eq. 16.9 (99 percentile); Structure of Intellect (DFU DMU): DFU 94 percentile, DMU 94 percentile (both highest possible scores); Structure of Intellect (CMR NSI): CMR 84 percentile, NSI 94 percentile (highest possible score).

These high scores were no surprise to us. We believe that LaLuce would have been tested and documented much earlier if we had not moved every few years. Whenever he has taken any standardized test he has scored in the top percentile category (usually 98th or 99th percentile). He has recently started ninth grade but is also taking a college course in computer programming (Java 2) under the "Early Entry Program" at the University of Tulsa.

Early Indicators

Our earliest indicator of LaLuce's high intelligence was when he was a baby. Angelika was twirling some rings on a table and LaLuce, who was sitting nearby, began observing very closely and was fascinated. Another early indicator that LaLuce was unusual was when he was about four and very interested in "big trucks" and trains. We bought him a wide variety of small trucks and vehicles, generally "Matchbox"- size. He made long parades of them throughout the house and moved them along in these parades for several hours without stopping. This play totally amazed me because of the long attention span it demonstrated, which in most children of this age is no longer than several minutes. This long attention span has continued ever since then and, if anything, has lengthened considerably. I believe, in fact, that this quality is more than just attention span; I see it as more like an unusual focus which, when used in conjunction with his drive, lets him do the amazing things which we see him do.

Another interesting activity for LaLuce at age four was converting chairs into vehicles and constructions. To do this, he turned dining room chairs upside down, sat on the rear of the cross-braces and used them as a vehicle. He also tried to assemble several turned-over chairs into vehicles and constructions of various kinds. We were not totally certain what he was trying to do, but it was fascinating to watch him. We did not interfere or try to help or direct this play. After several weeks he seemed to have done what he wanted with this activity (or completed it) and stopped. As far as I know, he has done nothing like it since then..

Preschool

LaLuce began attending a Waldorf Preschool in Charlottesville, Va., when he was four. We picked Waldorf because we liked their explorative way of teaching children. LaLuce thrived there and became sort of a leader among his classmates. On one occasion, his teacher told us, he assembled all of the unused chairs into a structure of some sort and then tried to get the rest of the children to get off the remaining chairs so that he could use their chairs in some further aspect of his structure.

Early ABCs?

We did not teach LaLuce his ABCs early, and we did not have him watch "Sesame Street" or other such programs. This was a conscious choice we made as parents. In our opinion, TV in

general is not a great influence on children. Furthermore, many of the programs like "Sesame Street" that repeatedly drill the alphabet and the smaller numbers are boring after a bit, so that when the child is introduced to these same things at school, it is just the same boring thing, and school is therefore boring. If you teach too much too early, you ensure your child will be bored in school. One TV program we all liked and often watched was "Mr. Roger's Neighborhood."

Art and Drawing

We first noted LaLuce's considerable drawing and painting talent when he was about five. Both Angelika and I have some artistic talent, and we have done some art training with him as we could. However, LaLuce has developed most of his artistic talent on his own. His preferred drawing tool is the ballpoint pen. With pen, he has progressed from flat depictions of buildings, animals and spaceships to three-dimensional drawings with perspective showing a wide variety of subjects but most often building designs in his own architectural style. Another artistic area in which LaLuce has great talent is computerized color combination and color design of materials such as brochures, advertising flyers and posters.

"Elly"

One day when LaLuce was about four, he saw a small stuffed toy, a yellow elephant, in a yard sale and insisted on taking him home. LaLuce took his cute, but somewhat scruffy new friend, who he named Elly, everywhere (except to school) for some time after that. I worried that Elly would get lost on one of these many expeditions, but he survived trips into caves, cross-country car trips and everything else. It was not until he had been with us for more than a year that Elly (speaking through LaLuce) revealed that he was "not an elephant, but a 'yellowphant'" which was a very different sort of being entirely. We learned quite a long history of how he had gotten here, how and where yellowphants live and what they can and cannot eat. Most importantly, yellowphants can eat only yellow food, because if they eat very much of any other color, they become the color they have eaten (becoming a brownaphant, blueaphant, etc.). The only exceptions to Elly's yellow-only diet were black olives (to keep his eyes black) and horseradish (to keep his feet and the inside of his ears white). Over the long years since then, we have learned much more about Elly. He can be very appealing, naive, naughty, loving, uneducated and expressive. Elly has become interwoven into the family. We all love him, and we have torn the house apart to find him on several occasions when he has gotten lost. Even now, Elly continues to be a communications and relational link that has often helped us to express difficult emotional matters. Elly, who started out as a companion to LaLuce, became a creative and expressive device for him and eventually all in the family.

Travels

Our family has always enjoyed traveling. Wherever we are, we go on excursions into the surrounding countryside. I think we have all learned a lot from these explorations, and these trips have helped both our children gain a clearer perception of the world around them.

Moves

For a variety of reasons, we have moved many times since LaLuce was small. We were living in Charlottesville, Va., at the time of his birth and moved into a different home when LaLuce was one year old. The summer before LaLuce was to begin second grade, we moved to Belle Fourche, S.D. During third grade, we moved to Las Cruces, N.M., and in the summer of 1999, prior to eighth grade, we moved to our present home in Glenpool, Okla. These moves have always disrupted LaLuce's schooling to some extent, but he is academically strong enough that he has always taken it in stride. Fortunately, each new school has soon recognized his abilities.

Public School

We have never had the degree of financial prosperity needed for private schools. LaLuce has always attended the public schools wherever we were, with the single exception of sixth grade, when he was home schooled with Angelika as his primary teacher. We home schooled because he did not seem emotionally ready for many of the difficult issues present in the Las Cruces middle schools. As a public school student, LaLuce has always had all A's and has been a model student as far as his behavior is concerned. He has been officially recognized as a role model for his school on several occasions. Public schools have rarely challenged him much, however, so Angelika and I have done all we could to supplement his school experience with stimulating and interesting projects, activities and challenges. We have also tried to use school resources whenever possible to get LaLuce into more advanced classes and activities. Generally, he has excelled. For example, he took ninth grade science as an eighth grader and had the highest grades (104 percent) of all his teacher's high school science students. As an eighth grader, he had a 4.0 grade-point average.

The problem of finding proper reading material for LaLuce has been very difficult for us. From the time he was in second or third grade, he could read anything up to an adult reading level. His social and emotional development level, however, was much younger than his reading level. Most books for older children include mating and dating type materials, which he was not interested in, and which were not appropriate for his age. LaLuce likes to read but there is so little which fits his needs. The *Harry Potter* books and some science fiction are most of the good ones we've found for him.

LaLuce's Initiatives

My wife and I have always provided activities for LaLuce, but he has always made up his own, and on his own terms. Our role as parents has been to supply raw materials (paper, information, maps, hotel directories, notebooks, etc.), feedback to him and an audience for the products of his efforts, whatever they were. Once he gets going on one of his projects, he often will do it instead of eating or sleeping, if we let him.

When we moved to South Dakota, we used several AAA regional travel guides for the areas through which we would be traveling. After we had moved into our new home, LaLuce, then age seven and beginning second grade, started reading these travel guides. In fact, he studied them for weeks and soon had memorized nearly everything about South Dakota. He could draw the state from memory and put in all the major towns and the road system. He then started doing the same for all the neighboring states. Soon, he was using the road atlas to do similar studies all over the country. Within a few months, working entirely after school and not neglecting his homework, he had memorized the

entire interstate highway system and could draw most states from memory, including their interstates and perhaps thirty major cities and towns per state. He also could characterize most of these towns by population, general size rank in their state and a variety of other data. I was very surprised that he could do such a task, with seemingly little effort, which involved memorizing and classifying maybe 2,000 towns and their spatial and demographic data. In the process, he wore out the first of many road atlases. He later used this data in some of his other projects.

In the fall of third grade, LaLuce told us he was going to write his own "Star Trek" TV series and was going to write an episode a day. He proceeded to do just that, writing at least one (sometimes as many as three) episodes per day until, at about episode 90 or so, he finally started to run out of plot ideas. To write this series, which he called "Star Trek: Explorer," he created his own cast of characters, his own ship, a series of new alien races with all their characteristics, and a continuing plot line which tracked the developing lives of his characters, the state of their ship and the current relationships between the various races. Episodes ranged from 4-55 handwritten pages (multi-part episodes sometimes were longer), and some had illustrations. He even made up his own theme music. He continued to write new episodes whenever he could think up a new plot (even when "this one is pretty bad"). It was just six months ago that he announced he was finished writing "Star Trek: Explorer" at episode 160 or so. We have ten or fifteen spiral notebooks full of these episodes.

In typical LaLuce fashion, it was not enough to write a TV series. A TV series needed a TV network to run on, so he created an imaginary network he called "Fanchane." Using the road atlas and his memorized U.S. demographic data, he designed and located the stations of his TV network to cover the country. He used TV Guides and his knowledge of television shows to produce program schedules for twenty-four hours a day, seven days a week. He scheduled "Star Trek: Explorer" episodes to run over time, with many new episodes each year, complete with new episodes and reruns scheduled by date. He has only recently stopped updating this programming schedule.

Shortly after he memorized the interstate system, he also began designing his own imaginary motel chain. LaLuce loves motels. He started out by studying several of the national hotel chains' directories. To this day, he periodically asks us to get updated motel chain directories. He knows all the big chains' names, distributions, varied names of motels, price ranges, target customers, specialties, general characteristics and much more. Although he no longer wants to be a hotel manager, his interest in hotels and his enthusiasm for staying in them remains. When LaLuce created his own imaginary motel chain, "Sunrise Inn" (complete with sign design, of course), he carefully decided their sizes and where they should be (by town, within towns, in relation to highways, etc). He also drew pictures of the exterior and floor plans for many of them. This was not a small chain; before he got tired of it, he had some 1,000 motels, a list of others planned and when each would be opening for business. He put together a 120-page directory of motels, complete with street maps showing how to get to them.

All of LaLuce's projects in this time period were done on paper, generating great piles which we could not possibly keep for long. For this reason we no longer have any of these projects, no matter how amazing they were at the time. I think it was in sixth grade that LaLuce went through a period in which his focus was in drawing mazes. Day after day he drew the most interesting mazes on paper, maybe twenty per day. He went to the farmers' market with Angelika (who was selling her crafts) and sold some of his mazes for twenty-five cents each. After several weeks, he was suddenly done with mazes and, as far as we know, has not drawn any since.

Spelling Bees

LaLuce has always been a great speller. In fourth grade he won his school spelling bee and was among the finalists in the Las Cruces District Bee. In fifth grade, he was third in his school bee. In sixth grade he was home schooled and did not compete. In seventh grade he was second in his school bee and came very close to winning the district bee again. In eighth grade he won his combined school district bee and came very close to advancing through the Tulsa County bee to the regional bee. He hoped to go to the nationals, but he is now beyond the age limit for them.

Sports

LaLuce has never had a great interest in team sports. This may have been influenced by my inability to play sports with my children, and Angelika's lack of experience and interest in this area. Possibly because we have never taught him, LaLuce has not shown much aptitude for sports when we have signed him up for them. He says that he enjoyed and was fairly good at a sport called "ultimate dodge-ball" which he played in P.E. while in South Dakota. Lately he has shown an interest in fencing, but we do not yet know how much talent he may have for it.

Kumon Math

During the time LaLuce was home schooled in sixth grade, Angelika did not feel competent to teach him math, and I was too deeply engaged in my university studies, so we enrolled him in Kumon Math hoping that it would fill the gap. Although LaLuce did well, we think that it was not a very good solution for him because it taught him to rush his work even more than he already was doing. It is our opinion that this increased tendency to rush was not helpful to his long-term development.

Music

Angelika has taught LaLuce music. Specifically, she taught him to play the soprano recorder. While not the best student she has had, he became a decent recorder player, but did not like playing it very much. He decided to learn the French horn but eventually became very frustrated and quit. He participated in his middle school choir and seems to have found a comfortable niche in choral music and has some talent. He is continuing to participate in school choirs, an activity which seems to be satisfying to him and which is helping him to relate better to the people around him.

Social Relationships

LaLuce is fairly isolated socially, although he is slowly becoming more interested in socializing. At times, he feels lonely. To a certain extent, this isolation arises from his high intelligence and his focus. He thinks so fast and can be very impatient with people who cannot keep up with him mentally. His areas of high interest are not the same as most of the students around him. He is very moralistic and, in conjunction with this, he is often very

judgmental. These traits can often be hard on friendships. The person he most relates to is his sister Celia, who is nearly three years younger than he is. We encourage him to socialize whenever he is comfortable in doing so, but we do not try to force him to do so. We are trying to be supportive, but we see that he needs to feel safe in order to come out of his rather formidable shell. Surprisingly, he can be a good and sometimes very patient teacher of subjects he has mastered, such as web sites.

LaLuce and Computers

LaLuce has a great love of computers and a very great talent for them as well. His interest started in about third grade when he got involved with playing "Railroad Tycoon" and the original version of "Sim City." These two games were the first big hits for him. "Sim City" was eventually replaced by "Sim City 2000," but "Railroad Tycoon" proved to be of enduring interest to him, lasting more than two years of frequent play, longer by far than any game since. Most computer games he seems to "use up" rather quickly—a week, several weeks or a month and they no longer interest him. A few have endured pretty well. His hits include "Railroad Tycoon," "Sim City," "Sim City 2000," "Sim City 3000," "Dark Ages," "Rollercoaster Tycoon" (and its add-on "Corkscrew Follies"), "Civilization II," "Marble Drop" (a little known but excellently done logical puzzle maze game), "Pharaoh" and "Star Trek: Birth of the Federation" (which has also been very durable and which can be played multi-player by modem). Additional computer games, which were short-term hits and are still occasionally played, include "Lemmings," "Railroad Tycoon II" (not as interesting as the original version), "Sim Tower," "Sim Farm," "Outpost," "Hollywood High" (which allows you to write your own plays, but is rather limited in its versatility), "Caesar," "Sim Copter" and "The Sims."

He has gradually moved beyond just playing games to website design and programming. His interest in learning programming arose from his desire to make his own computer games. We had many problems trying to get anyone to teach him programming because they considered him to be too young. Finally, when he was twelve, we found a community college which would teach him to do a simple website as part of a "kids' college" summer course. The class was twelve hours of Saturday hands-on instruction. LaLuce built a working website, got his mom to buy him a book on Java programming and has since done more comprehensive websites. From late 1998 until August 1999, LaLuce and two other boys (from California and Singapore) teamed up to build a site in the "ThinkQuest" international website building competition. In the period before and during the "ThinkQuest" competition, LaLuce developed considerable skill in graphical design to make his websites look good. Although his team's "ThinkQuest" entry did not win in his first try, LaLuce may try again this year or next year. He is now taking a college course on Java 2 programming to help him create better websites.

In May 1999, LaLuce took a single, one-hour tutored lesson in C++ programming from a college friend of mine. After the tutor left, LaLuce wrote a 500-line C++ program, his first ever in that language, and ran it without debugging, producing a correct output. In this incident, LaLuce really impressed me with his programming skill because my C++ programs (after taking a full ...ster college course) took longer to write, were never that long ...ad never run on the first try. Computers and programming continue to be a consuming interest for LaLuce. In addition to games and programming, LaLuce has become a frequent and expert user of the Internet.

Recent LaLuce Initiatives

In the last two or three years, LaLuce has shown much interest in roller coasters. This interest has been directed more toward the design of roller coasters than in the riding of them (he is a bit too scared to ride the biggest coasters, although he is slowly getting bolder). We have tried to help him satisfy his interest in three ways: by getting him available computer software, by buying him a roller coaster construction set made by K-NEX and by visiting amusement parks when we can. All of these have been successful. The computer software, "Rollercoaster Tycoon" and its add-on, "Corkscrew Follies," allow him to design and run his own amusement parks, including designing his own rides. He has learned a lot from it. The construction set has occupied him and his sister for days at a time as they have put together several different designs of roller coasters and run them. Both children have enjoyed the amusement parks but have been somewhat frustrated by the software limitations when they have tried to duplicate real-life parks on the computer.

Although it is often masked by his many other interests, one of LaLuce's greatest talents (and, as tested, his greatest strength) is in working with words. He is a fluid and creative fiction writer and seems to enjoy writing in general. His preferred themes tend to be science fictional. I look forward to seeing what he will someday write.

The school shootings at Columbine High School affected LaLuce deeply. He took several weeks to come to terms with them. Since then he has been doing a lot of his own work on "fixing the schools," which involves studying them, writing about them, drawing schools, studying school districts, looking at their designs and studying their relationship with their communities. Soon after Columbine, he wrote several long essays on respect, mutual respect and the status (and lack of status) of young people. He looked at curriculums and generally was not satisfied by what he saw. He began doing three-dimensional drawings (as if they were being viewed from a helicopter) of school buildings, colleges, college buildings and similar things of his own design (most have large areas of glass). He has linked these to city plans of hypothetical cities in which he has used his studies of population vs. school populations to calculate what schools he needs for his fictional towns. He often expands his fictional towns, recalculates the schools needed and determines where he should place the new schools he needs. For each school he draws both exterior views and floor plans of its buildings.

LaLuce has studied U.S. schools extensively on the Internet. Much of this study has concerned school sizes, ages, locations and architectural styles (as judged by pictures on the school websites). He believes that each school's architecture has a major influence on the students within that school. He is working on a book on this subject. He has classified, using pictures from school websites, hundreds of U.S. schools into thirty to fifty architectural styles and has been collecting and correlating style data with construction dates. He is trying to find clear patterns in his correlations between the schools, their styles and their problems.

Conclusion: LaLuce and the Future

What will LaLuce be doing in the future? I really don't know specifically, and I'm not even sure about all the general trends. He is smart enough and focused enough to do almost anything he wants. LaLuce tells us he intends to be an architect and I am sure if he wants to do that, he probably will. It combines his interests and talents in construction and art, so it seems like a reasonably good fit for him. However, given his past behavior, I very much doubt that is all he will do. Much of his work on maps, hotel chains, school districts, city expansions and road and street systems is really much more like the work of a city or urban planner. He has a strong interest and great talent in computer programming and web sites, so he will continue to work in these areas. He would also love to create computer games if he can figure out how. He has a strong urge to write books and stories, so he will probably do that as well. He is so academically strong that he most likely can go to any college he wants to, study whatever he wants and be supported by scholarships. Angelika and I will support him in his efforts in whatever way we can. I am watching and will be very interested to see what LaLuce will do. I expect great things from him, but I know it will all be on his terms.

LaLuce's response to this article is: "I think that since I have found that I have some of these certain traits, I now see that I could change the world with them. The way I see it, there are not very many people (around me) that believe they could change things or would even want to. This means I am now self-aware that I can see what's wrong with the world, what needs to be changed, and—to a certain extent—how to do it. I believe if I don't try, nobody else will, so if I have the ability and drive to do it, why not? This doesn't mean that's all I'll do, but..."

For **DAVID J. MITCHELL's** biographical information, see page 37 (Family History).

REVITALIZING THE CORE CURRICULUM THROUGH THE ARTS

Dan G. Holt

Part of the purpose of education is to add meaning to our lives by sensitizing us to those qualities that make us most human and to transmit to the next generation the ideas of cultures past and present. If only for these reasons, the arts are essential aspects of education. In a recent report titled "Champions of Change: The Impact of the Arts on Learning" (available at www.pcah.gov and published jointly by the President's Committee on the Arts and Humanities and the Arts Education Partnership), it was noted that several researchers independently reached the conclusion that an engagement in the arts nurtures the development of cognitive, as well as social and personal, competencies. It was also found that the arts:

- Contribute significantly to improved critical thinking, problem posing, problem-solving and decision making
- Involve the communication, manipulation, interpretation and understanding of complex symbols, much as do language and mathematics
- Foster higher-order thinking skills of analysis, synthesis and evaluation
- Regularly engage multiple skills and abilities
- Develop a person's imagination and judgment (Otterbourg, 2000)

In addition, cultivating the ability to understand the visual and auditory images of our world enhances our culture. For all these reasons, but particularly because we need to understand the special importance of creative expression in the growth and development of the child, study of the arts is basic. The arts are not and should not be limited to one isolated activity, but are instead a part of the world around us and can be integrated into many subject areas to add a richness that enhances the learning experience.

How can we as educators promote the excitement of life when we constantly reduce living for our students to the use of one appendage, which laboriously writes on the restrictive space of one piece of paper? The brain hungers for novelty (Katz & Rubin, 1999). An eon of evolution has taught the brain to seek out the unusual, to search for the unexpected. Synaptic connections are strengthened by new patterns, and this in turn increases the production of neurotrophins...the brain is literally turned on when it finds the unexpected.

In response to novelty, cortical activity is increased in more and varied brain areas. This strengthens synaptic connections, links different areas together in new patterns, and pumps up production of neurotrophins. But if it is simply more activity in the brain that leads to increased neurotrophin production, then listening to more music (even noise), or watching more TV, or getting a massage-all of which stimulate the sense organs-would lead to better brain health. Such passive stimulation of the senses, however, doesn't work as a brain exercise and neither does repeatedly doing the same routine activities (Katz & Rubin, 1999, pp. 22-23).

Creativity and expressiveness, besides having value in their own rights, are avenues to stimulating the production of neurotrophins in the brain and in the development of skills in listening, problem solving, critical thinking, flexibility/adaptability and self-discipline. Integrating creativity and the arts into many subject areas adds a richness that enhances the learning experience. Another advantage to combining the arts with lessons (and activities at home) that are traditionally lacking in excitement is that certain problems arising from boredom can be eliminated, making school more exhilarating and fun. Boredom is a real threat to the well being of humans. An article in *Psychology Today* (April 1961) quotes research showing that dolphins die of boredom. Bored chimps will sit in a corner and pull out their hair. The brain is a vital organ that needs constant stimulation in order to stay healthy. The "art" of mathematics is what creates the new theorem. The "out of the box" thinking that brings two or more disparate ideas together and takes us from step 1 to step 27 in one leap cannot come from the rigidity of thinking only as the textbook dictates. By combining the fun of the arts with the other disciplines, we can promote the fantastic that leads to the accomplishment of the heretofore unknown. We have for too long tried to separate emotions from intellectual endeavors. Yes, hard work is necessary, but encouraging the brain to make new connections can lead and does lead to those leaps that have brought us from the first wheel to the laptop computer.

This article will provide hands-on activities and strategies to enliven all areas of a curriculum or in-home learning activities and stimulate students' minds. Below are some ideas to start you on the journey to expanding your thoughts, and possibly lesson plans, into the world of the arts.

PROJECTS

I have listed 30 possibilities. These can be individual or, if more elaborate, can be used as group projects. All projects should integrate other subjects when possible, even if not specified below. Please view the list below as starting points. Some of these ideas may sound too difficult or vague to you, but I hope that you will present the idea(s) you want to try to the students and let them assist in working out the difficulties you envision. Whenever possible, please address the area of adaptation of your project to the needs of students with exceptionalities (don't forget the gifted students when thinking about exceptionalities).

1) Have the students make masks (with whatever material you are comfortable) that involve a number or symbol. Next, create/make musical instruments. Now line up the students according to an equation (2 + 5 = 7), have each number and symbol play their instrument the number of times on their mask, change the equation, listen to the different rhythms and sounds.

2) Look around the room and select about 10 items at random. List the items and have students write a story incorporating each of the items. Give a time limit. About half way through the time introduce another totally "off the wall" item (Armadillo...) for the students to include in the story. Then have them read the stories aloud. Maybe work some of them into short plays. Have them illustrate their stories on butcher paper taped to the walls or in short book form.

3) Have the students draw an item they are attracted to in the classroom. Then, combining this with math, help them find various geometric shapes in the drawing.

4) Have students keep a journal/sketch book in which they not only write ideas and notes, but they also do sketches. The sketches may be of ideas for papers, stories, projects, math problems, cartoons, etc. Combine language and art. Since it is personal, the artwork does not have to be museum quality.

5) Find/draw cartoons that describe feelings about an issue (social studies, politics, history, whatever you are working on in class) about which the student is very concerned (e.g., environmental issues, animal rights, etc.). Create a poster, which is a visual position statement on the issue. For those afraid to draw or who need a starting point, create collages from cartoons cut out of magazines or newspapers that deal with these topics. Write a song or a poem about the issue.

6) Have the class, as a whole, come up with an idea they want to work on, such as a way to keep the dinosaurs from becoming extinct. Then break them into small groups and have them study various aspects of the theories that describe what might have happened. Next have each group design parts of a "machine" that will contribute to the process of saving the dinosaurs. Bring them back together to combine the parts they have made and produce a Dinosaur Extinction Prevention Machine (some machines may require the students to be parts in the machine...so they could make costumes that would help them look the part).

7) Make a list of situations that are pertinent to your current topic in science, social studies, math, etc. Then in small groups of 3 to 5 have students brainstorm how these situations can be presented in a mini-play. Remember that divergent thinking is only the first part of brainstorming...you will need to get them to converge on a realistic solution to the problem...how to present the mini-play.

8) Collect cartoons and cut them up in order to recombine to create stories about topics of study (such as the election process, government structure, world events, history, etc.) with them.

9) Either through drawing cartoons, writing mini-plays or composing songs, create a story about the subject with which you are working (science: what happens to the leaves to cause them to fall? Why is the sky blue? Why are some trees tall and some not tall? What causes the thermometer to go up and down? etc.). These can be fantasy stories, cartoons, songs, etc. to start the section, and then use them to lead into a scientific discussion/lesson on the real reason these things happen. This can be done with various subjects.

10) In small groups of four to five, have the students start a drawing and pass it around. There should be one drawing for each member of the group going around...like a "round robin". So there will be four or five drawings being worked on by the group. There should not be any conversation during the drawing phase. When completed, have interpretations of the drawing offered by members of the group. These could be free of topic and fantasy, or you could use a theme such as the topic of the next lesson (Thanksgiving, slavery, WWII, the electoral process in the U.S., etc.).

11) Have students work in small groups to rewrite the words to a well-known song so that it deals with the topic of the lesson and then have them sing it for the class.

12) Have a visual arts, musical or drama field trip and tie the subject of the paintings, music or play to the subject being studied.

13) Divide the students into small groups that write and perform (for the class) a puppet play that involves another subject(s). For example, you could do a puppet play on how some numbers found the answer to the equation with which they were confronted on a dark and stormy day...or how the leaves of a plant struggled to find the sunlight...or how a virus is sneaky and finds a way to infect a living body. There are on-hand puppets, stick puppets, sock puppets, etc.

14) Various community resources could be brought into the classroom such as clowns, children's theater performers, artists, musicians, etc., to perform in a way that promotes the subject being studied.

15) Draw a "thesaurus" (Holt, 1993) of parts of the body that can be used to create various cartoon characters including at least 20 of each part. To be included are: nose, eyes, mouth, ears, feet and hands. Put these together in a booklet form that can be saved for future reference to create characters to use in future lessons.

16) Create a set of cartoon characters and do a 12-page comic book about the subject areas being studied (The Adventures of Kris Krickett in the Dump [or house, or garden, or Senate or the launch center at NASA]).

17) Create a calendar using original cartoons dealing with the lessons to come for that week, month, semester or the year.

18) Do a Punny World Map. Create a full color map that depicts the world of puns in other subjects. Map size should be a minimum of 20" x 24" and could even cover a wall if the whole class or several classes contribute to it. Examples: Pep Sea, "s" cape, I Sa Cuba, Juven Isles, etc.

19) Cartoon a photo out of a magazine as described in *Cartoon Thinking* (Holt, 1993) that will relate to a subject being studied.

20) Do a videotaped documentary on the topic of study...a trip through the garden through the eyes of a ladybug. The videotape could be of a real garden or could be an animated bug through a garden drawn by the students, etc.

21) Make masks of fantasy creatures from the land of _____ (math, science, history, social studies, health, environment, etc.).

22) Create a pop-up book with an original story and artwork that has at least eight moving parts and brings in another subject area. It might be fun to cooperate with another teacher and have the younger students write the story, and older students make the books from the stories. Then have a share day and let the students talk about what went into their phase of the process.

23) Design and make an original toy or game with a game board. Have the student group describe the way the toy involves various aspects of the subject you are studying in the presentation of the toy/game to the class.

24) Develop a project that relates to the subject and involves all five of the participant's senses.

25) Create, manufacture and play for the class a recognizable tune on a musical instrument that has never before existed in this form. Bring to play various principles being studied such as different cultures, science of vibrations/sound, the social impact of music on world events (such as war, depression-economic or emotional, election campaigns, advertising, celebrations-weddings/funeral and other rites of passage, why there is a difference between what a 13 year old and a 63 year old likes in music). Maybe do interviews with older people to find out what musical instruments they like and why.

26) Create a Rube Goldberg-type project (taking a simple task and making it more complex). For example, use at least fifteen steps to place a paper clip in a coffee mug. If not the paper clip, then choose whatever desired end might be appropriate to the topic of the class. Discuss the physics,

aesthetics, math, etc., involved in each step. You could videotape the various contraptions and how they work to show to other classes and add to the variety of senses the exercise taps.

27) Produce a skit of a "fractured fairy tale" combining movement and music, using nature as inspiration, such as frogs, birds, cats, trees, body joints, the ocean, blowing leaves, etc., and perform for the class or to the residents of a retirement village (live or on video).

28) Have small groups write an original piece of music that is created by using various mathematical formulas, which students play on any instrument for the class.

29) The exploration of parallels between school and society at large through analysis of personal interactions may be accomplished by the creation of a book produced by the class as a whole. The book could consist of cartoons, poems and short stories, which specifically address personal interactions in society matched with student commentaries explaining how these same interactions occur in the school setting.

30) Using toothpicks, wooden matches (with end cut off), and/or ice cream sticks have small groups of students create villages of the past or future, on this or another planet, of this or another culture, in the air, under the water, which would include dwellings, buildings for retail businesses, offices, the "seat" of government of the community, etc. Use various common articles to enhance the scenery, such as twigs with small pieces of sponge on them for trees and bushes; make traffic signs, and let the students use their imaginations! Don't give them all the details.

Evaluation

The process of evaluation does not always have to rest solely in the hands of the teacher. This kind of student work involves a great deal of ego, and if others are involved in the evaluation process, that will generate a high degree of motivation to do a terrific job on the lesson. Some suggestions include: create a panel of three or four teachers to help evaluate various projects; use self-evaluations and of course peer evaluations by students in other classes; student/class-designed rubrics; invite a panel of community experts in to judge.

Conclusion

If not appropriately challenged, the brain will create situations in order to be challenged. If students are not having fun learning, they will have fun throwing paper airplanes or spit wads. School should not degenerate into either mundane drudgery or silliness. As Rea states, "The predominance of seriousness over fun can lead to stressful talent burnout. The predominance of fun over seriousness can lead to wasteful talent dropout. With the balance of serious fun, students are able to sustain very high levels of exciting challenge and seeking mastery of talent interests without burnout or dropout" (2000, pp.210). The integration of the arts into the curriculum is one way to infuse fun into learning. Education is exciting and fun. Let's strive to keep that magic alive in the classroom.

Recommended Reading/Resource Materials

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Willard-Holt, C. & D.G. Holt *(1998). Applying Multiple Intelligences to Gifted Education: I'm Not Just an IQ Score!!. Manassas, VA: Gifted Education Press.*

Winslow & Dallin *(1992). Music Skills for Classroom Teachers (8th ed). Madison, Wisconsin: Brown and Benchmark.*

DAN HOLT is the founder and president of Let's Get Real, Inc., a not-for-profit academic competition that combines real problems of business and industry, such as Hershey Foods Corporation, with the brain power of students in grades 6 through 12. Formerly a professor of education at Penn State University-Harrisburg, he is the author of *CartoonThinking*, and co-author of the book *Applying Multiple Intelligences to Gifted Education: I'm Not Just an IQ Score!* He is also an educational consultant and does workshops on cartooning and on how to teach students to use positive humor to cope with stress.

THOMAS LOCKER: A GIFTED ARTIST FOR GIFTED CHILDREN

Jerry Flack

Thomas Locker is the most gifted painter of nature in the world of children's literature. Regardless of whether he is painting his beloved Hudson River Valley and Catskill Mountains in New York State or the New England Coast of the Pilgrims, Yosemite Falls or the vast Native American country of the Four Corners, Locker is a brilliant landscape painter who portrays the earth magnificently.

Thomas Locker was born in New York City in 1937, but he has managed to paint his way into the wilderness and now lives beside the Hudson River in Stuyvesant, N.Y., not far from his beloved blue Catskill Mountains. Locker received a Bachelor of Arts degree from the University of Chicago and a Master of Arts degree from American University. After two years in the U.S. Army, Locker taught at Franklin College in Indiana and at Shimer College in Illinois. Since 1973, he has been a full-time landscape artist and children's book author and artist. He is the father of five sons and has an extended family of nine children.

Locker discovered the art form of children's book illustration while reading to his five sons. He decided to give the medium a try. His very first book, *Where the River Begins*, was based on a camping trip he took with his sons, and it was named as one of the *New York Times* Ten Best Illustrated Books of the Year.

As a landscape painter, Locker makes no apologies for the beauty of his artistic vistas. While other artists use nature as a background, Locker uses the organic lines of undulating hills, the bold, masculine shapes of rocks, the pure reds of fall leaves and the resplendent spray of waterfalls and cataclysmic lightening storms to capture the eternal beauty that God has created.

But Locker's landscapes are not necessarily devoid of people. Indeed, he often portrays children exploring the natural world, especially as it may have appeared in a simpler and quieter time. Everything in nature is noble and ennobling in Locker's books for children such as *Where the River Begins* and *Cloud Dance*.

Locker's books are to be savored, not hurried. They are a balm in hectic times, loud noises and the frenzy of fast-paced living. There are no steel mills, traffic congestion, polluted rivers or smog-choked skies in the art of Thomas Locker. Nor are his characters adorned with cell phones or other electronic accouterments as they walk through pristine woods.

ker's stories and texts express simple yet deep emotions. A profound respect for nature and dignity for all living things are always in the subtext of his work. Still, not all of Locker's characters are completely pure and innocent, nor are they completely immune to life's problems. Humans have maltreated the mare in *The Mare on the Hill*, and the family in *Family Farm* is on the brink of losing the farmland they have held for generations due to the vicissitudes of present-day economics.

One of the beauties of Locker's books is that they are meant to be cherished and loved. The pastoral beauty found in this master artist's works beg the reader to visit his books time and time again. The pastoral images of *To Climb a Waterfall* and *The Mare on the Hill* are so lovely and so possessed of their own kind of natural reverence that readers are compelled to return to them over and over.

Critics of Locker claim that he makes no concessions to children. One presumes such charges refer to the fact that his illustrations appear more like fine art than cartoons. This reasoning presumably goes on to suggest that his oil paintings should hang on gallery walls rather than be seen between the covers of books for children. But where is it written that young children should not be introduced to the beauty of fine art? What about the child who lives near a library with lots of Thomas Locker's books but with no art museum within 100 miles? Does that child not deserve an introduction to beautiful landscape painting? Through his books Thomas Locker brings fine art to children. A study of Locker's illustrated books can serve as a "bridge" between picture books and a study of fine art for gifted students.

Locker feels it is critical to portray nature as beautifully as possible to children. He believes that children who see mountains, rivers and prairies as beautiful will want to protect and preserve that beauty. He writes *In Blue Mountain*, "The beauty of nature everywhere helps children love the world. And love of the world, I believe, is fundamental to its preservation."

The following books represent some of the most available and accessible books by this remarkably gifted man:

Thomas Locker (1984). ***Where the River Begins***. New York: Dial. Two boys, Josh and Aaron, live on the banks of a great river that flows to the sea. One summer evening they begin to wonder about the source of a great river. Their contemplation leads to a voyage of discovery for the boys and their grandfather. They follow roads, and then the river, into

dark forests and finally to the clearing and the small, serene place that is the source of the mighty river. The book is based on a camping trip Locker took with his sons.

Research Questions: Where is the Hudson River? Mr. Locker's work is often compared to the Hudson River School of Art. What was this "school"?

Creative Prompt: Imagine a journey you would like to make to see some natural phenomenon. Use any media to create pictures from your journey.

Thomas Locker (1985). ***The Mare on the Hill***. New York: Dial. In *The Mare on the Hill*, readers once again meet Josh and Aaron. Their grandpa has brought a mare to the farm, but she has been mistreated and immediately runs away from the boys. Nothing the boys try to do to lure the mare back works. Meanwhile, Locker is revealing the white mare against the backdrop of almost unimaginably beautiful scenery. Days drop off into blood-red sunsets, and autumn comes in a riot of fiery colors. Even snow and cold weather does not bring the mare to the comfort of the barn. Finally, more than a season after the mare comes to the farm, she not only learns to trust humans, but she shares with them her beautiful new foal. Locker's mastery of presenting the four seasons is abundantly evident in this exquisite book. So, too, is the kindness and respect humans must show all living things. "We must earn the trust" of God's other creatures, he seems to tell readers.

Research Questions: What is the gestation period for horses? How long does a foal remain with its mother?

Creative Prompt: Write a story about a pet kitten or another animal that has been maltreated, but finally comes to trust human beings once more.

Thomas Locker (1988). ***Family Farm***. New York: Dial. If there is one word that captures the spirit of all of Thomas Locker's brilliant picture books it is dignity. Just as images of nature portray its magnificence (and never its vengeful or capricious elements—if there are such things), Locker imbues his characters with such hallmarks as nobility of purpose, fortitude, courage, respect for nature and ingenuity. Locker's respect for the dignity of nature, the dignity of work, the dignity of family, is apparent in every book he has ever created. It is perhaps best on display in *Family Farm*. Again, the book is seasonal, a favorite motif of Locker's. The subject of the story is the plight of the American farm family. Pressed to the brink of economic disaster, this courageous third-generation family has to engage in both creative problem solving and mutual support when the price of the corn crop they produce is less than the cost for seed and tractor fuel. The solution they find is ingenious; moreover it provides Locker with added opportunities to paint what must be his favorite season of the year—autumn. And autumn has never been more ravishing than it is in *Family Farm*. Locker received the Christopher Award for *Family Farm*.

Research Questions: How many American farms fail each year? What are the causes? How do city dwellers suffer when American farmers fail?

Creative Prompt: Can you think of a creative way you could contribute if you had to help your family earn money to live and pay its bills?

Keith Strand (1999). ***Grandfather's Christmas Tree***. Illus. by Thomas Locker. San Diego, CA: Silver Whistle. Locker's first Christmas story is a beautifully illustrated one about young pioneers in Colorado in 1886. A young couple travel to the foothills of the Rocky Mountains to make their home. They toil throughout the summer and into the fall to complete a snug cabin for themselves and a new baby that is on the way. The couple's happiness, however, is placed in jeopardy when tremendous blizzards lock them in the cabin, separating them from the source of firewood they so desperately need. The majestic Blue Spruce trees surrounding the cabin are chopped down one by one until a single tree is left. The remaining spruce, it turns out, is the only safe haven for another couple—two Canada geese—one of which is wounded. Christmas morning arrives with a miracle. The storm is finally over and everyone-the young couple, their baby and the birds—are saved. Again, Locker creates magic with paintings of snowy mountains, the warm inner glow of a log cabin in winter, its family and the majestic geese. Here is a special story about love, faith and dignity.

Research Questions: Learn about Canada geese. Do they mate for life? Where in North America are they found?

Creative Prompt: Paint a picture that commemorates a special holiday memory you have.

Thomas Locker (1998). ***Home: A Journey Through America***. San Diego, CA: Silver Whistle. Locker is foremost a landscape painter. The landscape is not the backdrop for his work; it is the essence of his art. In *Home: A Journey Through America*, Locker carries this concept even further. He uses the poetry and commentary of American greats Robert Frost, Willa Cather, Carl Sandburg, Jane Yolen, Joseph Bruchac, Henry David Thoreau and even Abraham Lincoln. But it is not architecture of which these poets speak. It is the landscape of home and its special memories that matters for each. It is the mighty Pacific Ocean for Robert Frost and the Chicago harbor for Sandburg. For Washington Irving, it is the dramatic Kaatskill Mountain, while for John Muir, it is Yosemite Falls. End pages provide a map of the United States noting the home places referred to by the poets and captured in Locker's beautiful paintings.

Research Question: Use the Internet or other resources to find photographs of the places Locker paints in *Home: A Journey Through America*. Example: Chicago's harbor. Compare Locker's paintings to photo-realism. Which style do you prefer?

Creative Prompt: Write about your home place and paint a picture that evokes the essence of it.

Thomas Locker (1989). ***The Young Artist***. New York: Dial Books. *The Young Artist* speaks particularly to gifted students. Set in a time long ago, a gifted artist is apprenticed to a successful portrait painter. While the apprentice Adrian develops his prodigious talent through the encouragement of his mentor, he has no desire to create the portrait painters that are coinage of the art world at the time of the story. Moreover, the powerful nobles who want Adrian to paint their portraits want him only to glorify their looks. Adrian's courage as an artist is a story worth reading and, as always, Locker's paintings are haunting.

Research Question: Read the Newbery Medal novel by Elizabeth Borton de Trevino, *I, Juan de Pareja* (New York: Farrar, 1965). Compare and contrast the lives of the young heroes Juan and Adrian.

Creative Prompt: How important is it to be true to one's gifts? Can one make compromises about how he or she uses talents?

Thomas Locker with Candace Christiansen (1995). ***Sky Tree: Seeing Science Through Art***. New York: HarperCollins. In the past five years, Thomas Locker has created a trilogy of picture books that are as welcome in the science room as they are in the art room. *Sky Tree* is a remarkable book, just made for interdisciplinary studies with gifted students. Once again, Locker uses the four seasons to tell a story. In this case the subject of the story is a tree. The opening landscape reveals a solitary tree on a hillside with its leaves fluttering in the soft summer breeze. The focus never changes throughout the rest of *Sky Tree*. The tree, the lighting, the sky, the seasons all change, and the wonderful combinations and complexities of nature during the course of a year are displayed by Locker in simple yet majestic paintings. Christiansen, a science teacher, provides the science lessons at the book's end that accompany this wonderful fusing of science and art.

Research Questions: How do the squirrels and old snapping turtle survive the calendar year? What natural actions do they take, especially to prepare for the harsh winter months?

Creative Prompt: Write haiku poems for each of the tree scenes found in Sky Tree.

Thomas Locker (1997). ***Water Dance***. San Diego: Harcourt Brace & Company. In a second science-oriented book, Locker pays homage to the most common substance on the planet: water. *Water Dance* is a series of poems with beautifully matched landscape paintings that pay tribute to aspects of the water as its dances its way through our world. Sometimes water is rain. Sometimes it is a mountain stream. Other times water takes the form of a river or a lake. It is the sea, mists, clouds and a thunderhead cloud. Whatever form it takes, water is a dance that never ends. At the close of this gorgeous paean to water, Locker once again provides scientific information about the water cycle to complement the free verse poetry that he illustrates so boldly in the body of the book.

Research Questions: How much of the earth's surface is covered by water? What percent of your body is water?

Creative Prompt: Create a painting about your favorite form of water (e.g., a rainbow).

Thomas Locker (2000). ***Cloud Dance***. San Diego, CA: Silver Whistle. In books such as *Sky Tree* and *The Mare on the Hill*, Locker has always made the most of dramatic clouds in his landscapes. Here clouds are front and center as the central point of the book. Building on the pattern established in *Water Dance*, Locker provides his own rich poetic description for all kinds of clouds. Each poetic passage is illustrated with a dazzling full-page oil painting of the type of cloud in question. There are "High, wispy clouds" that race in autumn winds, and [illegible]sy-spring clouds" that come with dawn's light. As with *Water Dance*, Locker provides lots of valuable scientific information about clouds at the end of the book.

Research Question: Why are clouds different colors?

Creative Prompt: Write a poem about a particular kind of cloud found in *Cloud Dance* from the perspective of a bird, a deer or other animal found in the wild. Illustrate the poem.

Joseph Bruchac & Jonathan London (1992). ***Thirteen Moons on Turtle's Back: A Native American Year of Moons***. Illustrated by Thomas Locker. New York: Philomel. *Thirteen Moons* represents the first of three collaborations on Native American literature between Joseph Bruchac as storyteller and Thomas Locker as artistic interpreter. Many Native American cultures ascribe stories to each of the 13 moons of the year, which they believe are found on the shell of the turtle's back. The stories range from the Northern Cheyenne's coyote story to the Micmac's Moose-Calling Moon story. Locker's portrayal of the natural world, from bears to moose to owls, is especially haunting.

Research Questions: Learn more about the Native American people whose stories are revealed in *Thirteen Moons*. Where do they live? Can you find any further stories about their interactions with the wilderness?

Creative Prompt: Read one of the explanations provided for a new moon. Create your own painting to illustrate the Native American story about it.

Joseph Bruchac (1995). ***The Earth Under Sky Bear's Feet: Native American Poems of the Land***. Illustrated by Thomas Locker. New York: Philomel. This breath-taking book is a direct follow- up to *Thirteen Moons*. Bruchac tells 12 beautiful stories of the earth, especially as seen from the sky through the eyes of Sky Bear. The splendidly told stories range from the Mohawk, Anishinabe, Pima, Navajo, Winnebago, Cochiti Pueblo and Inuit. Regardless of the part of the world that is at the heart of the story, Locker's paintings are mystical. Sometimes he is portraying the gift of fireflies; on another occasion he is revealing the scattering of the stars in the heavens.

Research Question: Make a map that reveals the location of the home areas of all the Native American peoples portrayed in *The Earth Under Sky Bear's Feet*.

Creative Prompt: Read the Lakota piece, "The Old Wolf's Song." Take on the role of another of nature's creatures such as a deer or an owl. What might your song to the earth be?

Joseph Bruchac (1996). ***Between Earth and Sky: Legends of Native American Sacred Places***. Illustrated by Thomas Locker. San Diego, CA: Harcourt Brace & Company (1996). In this third collaboration between Bruchac and Locker, the subject matter is 10 sacred places vital to the beliefs of Native Americans. Sacred places that hold lessons about honor, respect and justice play a role in stories about Niagara Falls, the Great Smokies, the Hudson River, giant serpent mounds in Ohio, the Rocky Mountains, the land of saguaro cactuses and the ancient ruins of the Southwest. These legends are from the Navajo, Cherokee, Papago, Hopewell, Cheyenne and Walapai, among others. Locker's paintings not only provide an indelible sense of place, they are also teaming

with reverence for the subject matter. As always, the rich colors of his palette are dazzling.

Research Questions: How are places sacred to Native Americans being protected today, if at all? What can you do to make sure such shrines remain protected in the future?

Creative Prompts: Can you think of at least one place in your community that is sacred? How would you explain to someone from a culture other than your own why it is sacred and why it should be protected? Draw a picture of this shrine.

Creative Prompt: After reading Joseph Bruchac's text and viewing Thomas Locker's luminous paintings, go back and re-read Bruchac's introduction. Now, think about your "Seventh Direction." Draw your own inspired illustration of what you think your Seventh Direction looks like.

Jean Craighead George (1995). ***To Climb a Waterfall***. Illustrated by Thomas Locker. New York: Philomel Books. Two of Thomas Locker's loveliest creations have been collaborations with Newbery Medal winner and fellow naturalist Jean Craighead George. *To Climb a Waterfall* takes the reader on an exhilarating adventure. All along the journey, nature reveals itself via spirited trout, tumbling cascades, dark forests, and wilder and wilder water. Part way through this incredible journey, the climbers just might notice a landscape artist creating a waterfall painting. Could it be Thomas Locker? The reader can use his/her imagination. This is a lovely book that is a sublime tribute to the perfect combination of words and pictures.

Research Questions: Where is the closest waterfall to your home? Can you climb this waterfall easily? If you live in an urban area, are there human-created waterfalls? How are they alike and different from the kind of waterfall described and painted in *To Climb a Waterfall*?

Creative Prompts: Put yourself into one of Thomas Locker's magnificent paintings. What senses do you use to make the most of the experience? Write a poem about being within a painting from *To Climb a Waterfall*.

Jean Craighead George (1993). ***The First Thanksgiving***. Illustrated by Thomas Locker. New York: Philomel Books. George and Locker also collaborated on *The First Thanksgiving*. This work is the closest thing to a historical documentary that Locker has done. George gives a fascinating, but by no means brief, account of the Puritans who left England and came to Plymouth Rock to establish a new colony for themselves. The enormous hardships and personal tragedies that faced the Pilgrims are detailed in George's well-written account. Locker uses color and atmosphere to provide images that allow today's youth to see what the New World looked like before the arrival of Europeans. He also provides startling images portraying life at the time of the very first Thanksgiving in 1621.

Research Questions: Learn more about the custom of Thanksgiving. What is the history of Thanksgiving celebrations in the United States? When and how is Thanksgiving celebrated in Canada?

Creative Prompt: Write a poem, prayer or song of nksgiving. What, for example, do Americans today have to honor with thanks?

Thomas Locker (1999). ***The Man Who Paints Nature***. Photographs Tim Holmstrom. Katonah, N.Y.: Richard C. Owens. Two of Thomas Locker's most recent books are autobiographical. *The Man Who Paints Nature* is by Locker and is one of the Meet the Author Series books from Richard C. Owens Publishers (P.O. Box 585 - Katonah, N.Y. 10536). In this easy-reading autobiography, Locker shares examples of some of his childhood art and also tells how camping trips with his own sons led to the creation of his first picture book for children, *Where the River Begins*. He introduces his large family and relates how he and Candace Christiansen worked together on *Sky Tree*. One of the best lessons for young creators to learn from this memoir is Locker's honest admission that he is never quite satisfied with his work. Young perfectionists will realize that a bit of self-doubt dwells within the mind of even a great master artist such as Thomas Locker. Then, guess what? A new creative idea comes along and pushes the doubt away, and the creative spirit is once more alive and thriving and yearning to get going on a new project.

Thomas Locker (2000). ***In Blue Mountains: An Artist's Return to America's First Wilderness***. Hudson, NY: Bell Pond Books. *In Blue Mountains* is Locker's most personal work to date. He talks about his own visits, first as a boy and now as a man who has painted for 50 years, to Kaaterskill Clove, that was made famous by the Hudson River School of painters whom Locker so closely resembles in his own work. This is no story of a boy or girl climbing a waterfall. Instead, you have a mature story of an artist who takes each new step, wondering if he has it within himself to capture on canvas the awesome beauty of nature. With every new painting he learns a new lesson about perspective or light or shadows or his own imagination. *In Blue Mountains* ends with vital notes about how each of the paintings was achieved, how these particular mountains were formed, notes on the kinds of people who have lived in the Catskills, and why artists paint distant mountains blue. For older students, especially gifted young artists, this is an autobiography filled with beautiful images but also with an understanding of the very special bond between humans and the land.

Research Questions: What do you find most fascinating about the life and work of Thomas Locker? Make a list of five questions you would like to personally ask him.

Creative Prompt: Write a page that may appear in your autobiography 25 years from now if you are successful and your life dreams come true. Create an illustration to accompany your written entry.

The books mentioned in this article are by no means the complete Thomas Locker canon. Additional books written and/or illustrated by Thomas Locker are included in the references below.

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PROMOTING CRITICAL THINKING: EDITORIAL CARTOON INTERPRETATION

Wm. Ray Heitzmann

In the hands of a skilled educator of the gifted, editorial (a.k.a. political) cartoon interpretation constitutes one of the most powerful devices in stimulating critical thinking. This technique has significant appeal because of its flexibility in achieving a wide range of instructional objectives. It lends itself nicely to initiating discussion, illustrating lectures, promoting high-level questions and providing a basis for assessment, while adding humor to the situation.

A dramatic increase in the utilization of this art form to enhance instruction has occurred in recent years. This trend may be attributed to the cartoon's ability to:

* Develop the multiple talents and stimulate the various learning styles of students. This technique contributes to differentiating instruction through permitting students to operate at various levels of competence. Provided with sufficient background, intellectually gifted students will quickly interpret the cartoon; those with art talent will generate their own quality visuals, and the less able student will have the opportunity to gain insights to events and situations of an historical or contemporary nature.
* Empower teachers to demonstrate excellence during [illegible]ns when observed by peers or supervisors.
* Permit parents to encourage their children to examine the editorial section of the newspaper and to challenge them to interpret the cartoon.
* Prepare students for standardized tests containing cartoon questions. Unfortunately, students have historically done poorly on cartoon-based assessments (see research).

The Research

The political cartoon, defined as interpretive artistry, makes use of caricature, symbolism and other techniques to present a message or point of view concerning people, events or situations (Heitzmann, 1974). The cartoon conveys its message quickly—sometimes subtly, sometimes brashly—but generally gets its point across to more people than do editorials.

Despite the potential of the cartoon for promoting critical thinking in the classroom, many instructors have experienced frustration. "Often my students don't get it," lament many educators. Unfortunately, the research to date corroborates such observations. As early as 1930, an investigator found that students had difficulty understanding cartoons (Schafer, 1930). A number of other studies questioned the ability of school students or even adults to comprehend the medium. Two 1968 studies found dismal results (Brinkman, 1968; Carl,

1968). In the latter study, only 15 percent of adults understood the cartoonists' message!

Compounding this bleak situation, two additional researchers concluded that "numerous interpretations were incorrect and many cartoons were not interpreted" (Bedient & Moore, 1985). An earlier doctoral dissertation found that participants could not effectively understand the cartoonist's message (Bedient, 1971). Additional researchers reached the same conclusion, finding the viewer could not "decode the graphic messages in line with the cartoonist's intent" (DeSousa and Medhurst, 1982). Adding to the chorus, the examination of a representative cartoon on a most recent National Assessment of Educational Progress found that among eighth graders, only 16 percent indicated an appropriate answer, while only 35 percent of twelfth graders answered the task correctly (Williams, 1995)!

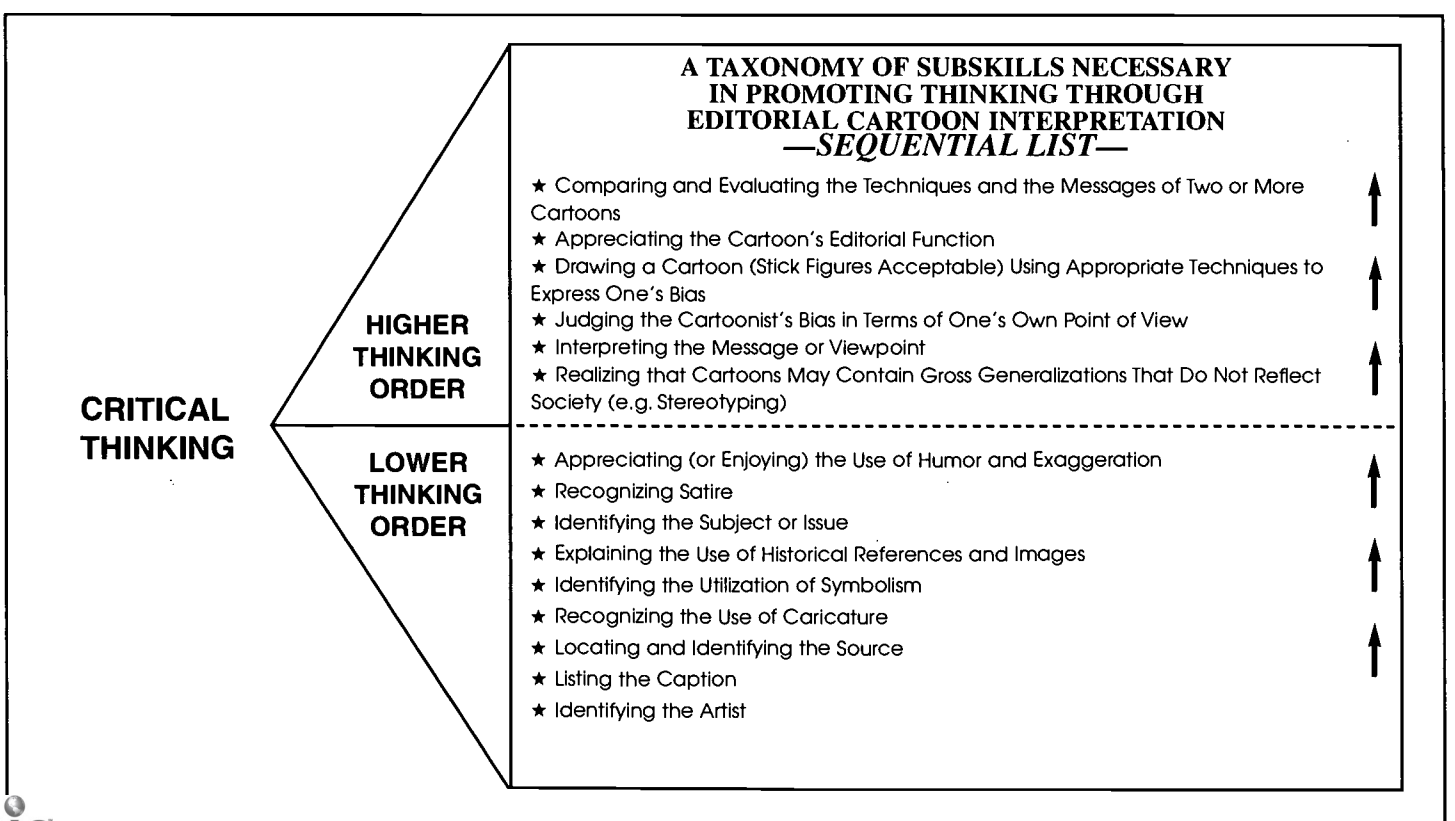
On a brighter note, an article entitled "Attitudes of Gifted Students Towards Methods of Teaching" reported that "political cartoons are an appropriate medium for the instruction of gifted students." It further noted, "When political cartoons were used, this method ranked higher than other methods." The article offered two suggestions for classroom teachers, namely that "political cartoons be used in combination with small group instruction" (an important observation for coopera-tive/collaborative learning), and secondly that "political cartoons should be used toward the end of the unit, not at the beginning . . . even gifted students need a certain degree of background knowledge in the topic for this method to be effective" (Johnstone & Nakhleh, 1987). In an earlier, somewhat related study, Greenblatt (1979) noted: "Political cartoons should be considered a useful classroom strategy to develop skills of comprehension and most especially critical thinking among above-average male students."

An important study, "The Effects of Teaching Strategy and Cognitive Style on Student Interpretations of Editorial Cartoons" (Hunter, Moore & Sewell, 1991), mirrored the conclusion of others. The authors found that "the individual readers of editorial cartoons must bring a great deal of information to the interpretation process to be effective...the individual must have the knowledge base (both visually and otherwise) to be able to interpret the cartoon."

A Strategy for Student Success

In several articles (Heitzmann, 1974, 1981, 1988, 1995, 1998) and a book (Heitzmann, 1980), along with numerous conference, workshop and in-service presentations, this author has proposed and seen implemented with success a subskills approach to political cartoon interpretation and consequent critical thinking (see chart below). That is, classroom teachers of all levels and subjects must provide students with knowledge of the basics prior to beginning an analysis of editorial cartoons. Following this initial instruction, the classroom teacher would integrate cartoon lessons appropriately throughout the course of study but always making provisions for students' knowledge of the cartoon's content background so critical for proper interpretation.

The following examination of subskills vital to editorial cartoon interpretation demonstrates how classroom teachers and parents can proceed with children to maximize their success. The examples: caricature and symbolism.



Recognizing the Use of Caricature

For many, the most enjoyable aspect of cartooning is caricature. By definition, it is the use of exaggeration in a cartoon to aid the viewer's recognition of the person or object. Think of LBJ's nose, Ronald Reagan's pompadour, Michael Dukakis' eyebrows and Ross Perot's ears! Caricature often expresses an opinion in and of itself.

Suggested Procedure

The teacher should show (by projection and/or distribution) a caricature of a popular figure and ask students to identify the individual. When the correct answer is given, a realistic sketch or photograph of the person should be shown and the following questions asked: "After comparing the caricature and the realistic image, which features have been exaggerated? Is the caricature positive or negative and why?" It is advisable to do this process initially with several stand-alone caricatures and some within editorial cartoons. Then ask the class to draw a caricature of a famous personality. This task will assist in providing an assessment of the students' mastery of the concept.

Mike Peters, cartoonist for the *Dayton Daily News*, provides some guidance. He states, "There are very few rules to learn about caricature and here they are: 1. Have fun with it, 2. Draw from experience, 3. Keep it simple, 4. Use your own intuition on what you want to say, 5. Practice, practice, practice" (Peters, 1985).

If students struggle with their sketches, it might prove useful to share with them observations of British cartoonist Michael Cummings in his introduction to *The Cartoon History of the American Revolution*:

> "The first major daily problem that far transcends the relatively simple task of drawing is finding the right idea. The cartoonist wakes in the morning and hopes a cartoon-worthy event has happened. If it has, he must digest the happening and form an opinion about it. He must then visualize it into an amusing picture which shows the paradoxical or sardonic aspect—with or without cartoon, he allows himself much artistic license, which is another way of describing caricature . . . To go further, the cartoonist must so dominate his politicians that he can make them recognizable, without showing their eyes, nose or mouth. Of course, not all politicians require such flights of creative imagination as I have just been describing. Some are ready-made caricatures . . ." (Jones, 1971).

The next step would require students to identify a caricature in a series of cartoons as they begin to realize its importance as a key to understanding the cartoon.

Identifying Symbolism

While students may quickly identify the "Golden Arches" as a symbol for the well-known fast-food restaurant and the Nike "Swoosh," only a few will recognize the donkey as symbolizing the Democratic Party. For the cartoonist, the symbol constitutes a type of visual shorthand. The teacher, beginning with those symbols familiar to students and then [illegible]ew ones, can build their students' knowledge in this area. One activity may involve students in creating their own personal symbol. If the class needs suggestions, teachers may wish to mention animals (pig, shark, vulture) and ask what they symbolize. Time spent on this subskill will result in significant improvement in critical thinking and cartoon interpretation (Steinbrink & Bliss, 1988). Following an exercise in symbolism, students should be exposed to cartoons containing this technique to gain practice in transferring skills as well as an opportunity for the instructor to assess their performance. Teachers should then proceed with specific lessons in which students build skills relevant to cartoon interpretation while proceeding up the "taxonomy."

Often the examination of a cartoon can develop more than one subskill, e.g. teaching about "satire" while "appreciating the humor." Flexibility exists as one of the great values of the editorial cartoon lessons. It can be utilized with a variety of instructional situations to motivate and educate a wide range of student abilities while promoting lesson objectives and unit goals. Perhaps, however, the finest use of the editorial cartoon lies in its potential: to stimulate and encourage critical thinking on the part of the student, and this can relate to "the Standards."

The Standards

A truly wonderful situation exists! That is, the opportunity for teachers to engage students in critical thinking episodes while concurrently satisfying national, state and local Standards of Excellence. The strategy for this endeavor: careful and precise use of the editorial cartoon.

The latter serves as a powerful tool for the teacher with the potential to motivate and educate through high-level discussions, lecturettes, cooperative/collaborative learning activities and assessments. Additionally, learning experiences such as homework can be enhanced. More importantly, it can contribute to aiding students to achieve course goals and lesson objectives, such as high-order thinking.

The following are examples of student intellectual behaviors that fall into this category:

INTERNATIONAL READING ASSOCIATION/NATIONAL COUNCIL FOR THE TEACHERS OF ENGLISH

STANDARDS FOR THE ENGLISH LANGUAGE ARTS

Standard 12. Students use spoken, written and visual language to accomplish their own purposes (e.g. for learning, enjoyment, persuasion, and the exchange of information) (NCTE/IRA 1996).

The editorial cartoon exists as a natural relative to this Standard; cartoons done for homework or class projects by students may even be entered in "Editorial Cartoons By Kids" contest (see annotated bibliography).

ILLINOIS LEARNING STANDARDS FOR SOCIAL SCIENCE COMMUNICATING EXPRESS AND INTERPRET INFORMATION AND IDEAS

. . . students need to read and interpret textual and visual information, be able to listen carefully to others, and be able to organize and explain their own ideas using various media.

Again, lessons relative to editorial cartoons can magnificently satisfy this standard.

CHICAGO ACADEMIC STANDARDS AND FRAMEWORKS K-12 SOCIAL SCIENCE

State Goal 18: Understand, Analyze and Compare Social Systems, with an emphasis on the United States.

CAS D Analyze the role of institutions (e.g. educational, military, charitable, governmental, mass media), their purposes, and how they develop and change our time in society (1997).

An historical analysis of the changes in editorial cartoons from pre-Revolutionary days to the present nicely meshes with this Standard.

We are fortunate that although a young country, we have a rich and colorful editorial cartoon heritage. This tradition has criticized political abuses, economic injustices and social problems—it exists as a wonderful treasure available to the student, parent and teacher.

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Brooks, C. "Best Editions Cartoons." (Annual) Gretna, LA: Felican Publishing. An excellent compilation of cartoons from over 100 cartoonists in the United States and Canada. The collection focuses on the major issues of the year and provides the instructor and students varying cartoonists' viewpoints depending upon their political and geographical biases. The excellent quality of the yearly volumes has remained constant.

Cartoon News. P.O. 698 Greenwich, CT 06836. A periodical that contains approximately ninety contemporary worldwide cartoons in each issue; each drawing has a series of accompanying questions. A teacher's supplement provides answers.

Documentary Photo Aids. P.O. Box 956, Mt. Dora, FL 32757. This small company provides many fine collections of editorial cartoons useful for posting on bulletin boards (11x14in.). Among the sets available are "Classic American Political Cartoons"; "A Cartoon View of Domestic Issues: Anti-War and Pro-War Cartoon History of U.S. Involvement in World War I"; "A Cartoon History of the U.S. Foreign Policy"; "Theodore Roosevelt in Cartoons"; and "Cartoon History of Presidential Elections." Additional collections contain cartoons similar to those mentioned. The selection and quality of the cartoons are excellent.

Heitzmann, W.R. (1975). "50 Political Cartoons for Teaching U.S. History." The Social Studies School Service, P.O. Box 802, Culver City, CA 90232-0802. www.socialstudies.com . A series of 8 1/2" x 11" posters containing cartoons from Ben Franklin's "Unite or Die" to Edmund Valtman's "Later—My Brother is Watching" (a commentary on dÈtente). The series, designed to be used from elementary through graduate school, contains on the reverse side of each poster background to the cartoon and suggestions for use, student learning experiences and questions for discussion.

Keller, M. (1968). *The Art and Politics of Thomas Nast.* New York: Oxford University Press. An outstanding collection of Nast's cartoons that can be reproduced or easily copied (with permission). Most cover a large page (81/2" x 11") and several are two pages. The range of the subjects treated, the quality of the cartoons, and Nast's influence make this an excellent addition to the library of teachers and edited cartoon enthusiasts.

Miller, E. (1992). "Gender and Politics and the Editorial Cartoons" (video). New York: First Run/Icarus Films. This video focuses largely on the vice-presidential candidacy of Geraldine Ferraro via the "magic" of the editorial cartoon.

Szabo, J. (1994). *The Finest International Political Cartoons of Our Time.* North Wales, PA: Witty World Publications. An extremely well done work featuring cartoonists nationally and globally. The section on the Clinton presidency and international affairs will be especially valuable to educators.

Understanding and Creating Editorial Cartoons. (1989). Madison, WI: Knowledge Unlimited. A resource notebook that provides information on the steps necessary for students to interpret and draw cartoons. A number of cartoons are included that demonstrate each concept. This organization conducts an annual contest for students publishing Editorial Cartoons by Kids.

The Way Editorial Cartoons Work. (1995). Fort Atkinson, WI: Highsmith, Inc. This book, which includes cartoons and transparencies, examines many of the tools the cartoon artist utilizes (symbolism, stereotyping, etc.). This company publishes a number of cartoons and related teaching materials.

Wilson. C. (1991). *Drawn To The Issues.* Los Angeles: Privately l. Drawn To The Issues, 857 E. 115th St., Los Angeles, CA 90059. A selection from one of the nation's premier African American political cartoonists. The drawings focus on topics from race relations and discrimination to California politics and foreign policy.

EDITORIAL CARTOONS ON THE WEB

The Internet can provide information on editorial cartoons, including animated editorial cartoons. Some sites follow:

Association of American Editorial Cartoonists
http://www.detnews.com/AAEC/AAEC.html
An organization serving full-time editorial cartoonists, student cartoonists and others with a professional interest in cartooning. Includes links to cartoonists and other organizations.

Block, H.
www.washingtonpost.com/wpsrv/politics/herblock/herblock.htm
The site for the current dean of American editorial cartoonists.

Chris Hiers Cartoonery
www.cartoonery.com
A site featuring animated cartoons; Hiers is the on-line editorial cartoonist for Fox News. Another similar site is Animated Editorial

Cartoons by Amit Kataria
www.best_cartoons.com

Daryl Cagle's Professional Cartoonist Index
http://www.cagle.slate.msn.com
A site with links to hundreds of cartoonists (worldwide) and thousands of cartoons. Most important, it links to "Teacher Guide," managed by his wife, Peg Cagle, a middle school educator. Although the site is oriented to current events, teachers can apply some lessons (the Editorial Cartoon Analysis Chart, for example) to historical cartoons.

Franklin Delano Roosevelt Cartoon Archives Home Page
http://www.nisk.k12.ny.us/fdr/
This site was created in an interdisciplinary project by the Advanced Placement History and Computer Mathematics classes at Niskayuna High School in N.Y. Topics of cartoons include: Waiting for the New Deal, The First 100 Days, Alphabet Soup, and the War Years '42 and '43.

Jeff MacNelly Editorial Cartoons
http://macnelly.com/editorial.html
A must for Midwesterners, this site provides his current work and includes an archives. The cartoons of the late Dick Locher may be found at www.comicspage.com/locher/main.html.

Monet's Political Cartoon List
http://www.magi.com/%7Edmonet/toons.html
There are over 30 international editorial cartoon sites organized here. Countries represented include: The United Kingdom, Canada, the United States, Ireland, Russia and Mexico.

National Cartoon Society
http://www.reuben.org
An organization of professional cartoonists made up of over 600 of the world's professionals. It Includes links to other related societies and associations.

WAMS: Political Cartoon Links
http://www.paupack.ptd.net/wams/polcarto.htm
Numerous links characterize this site from a wide variety of

sources including art from several cartoonists, a history of editorial cartoons, historical cartoons and others.

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THE PLAY'S THE THING. . .

Ray Sheers

Prince Hamlet used the play "The Mouse-trap" in order to catch the villainous conscience of the King. Perhaps it's time for educators to consider building a better mousetrap to catch, not the conscience, but the rich and varied talents of gifted students in the same manner—through the medium of theater. If we're looking for a stage to showcase the talents of gifted students, nothing could be more fitting and obvious than the stage of a theater (backstage included). The theater can and should become a classroom, for the theater is in a very real sense a microcosm of the broader brave new world of infinite possibilities that lies waiting to be shaped and reshaped by the able hands of our most gifted and our most talented.

Too often in education, theater arts, especially in middle school, is considered an extra, a "fluff" exploratory, or an extracurricular activity. Seldom is it integrated into the real curriculum until high school, if then. Consider which subjects are typically cut whenever a school district suffers a budget crisis—art, music, home economics, industrial arts, foreign language and theater. Unfortunately, our society and—as an extension of that society's mentality—schools do not value the arts. They simply are not considered integral components of a well-rounded education. Arts are merely served as leftovers to students because these subjects don't neatly fall into one of the five basic food groups (English, mathematics, science, social studies, P.E.). Our educational system values these highly and heaps them daily on students' plates so that schools can later assess their growth through standardized testing (what some might consider the educational equivalent of a stomach pump).

What a loss to gifted students particularly, and society as a whole, when schools fail to realize the power of the theater as a tool to educate. There is no other educational tool I know which can so efficiently and effectively enhance the growth of talented and gifted students. Nor is there any comparable tool I'm aware of that is capable of developing so many of the characteristics of giftedness—many of which are overlooked in traditional educational settings and approaches. Moreover, if we want to tap those areas of giftedness that so often go unrecognized because they aren't as easily measured as academic giftedness, the theater experience offers a perfect medium.

I started a theater program for eighth grade students several years ago because I sensed a void in our school that troubled me. The primary extracurricular activity was the sports program and, of course, cheerleading. We had a district band and orchestra that went pretty much unnoticed because they seldom performed for the schools. Students were given a sampling of art, music and foreign language throughout the year. That was considered enough enrichment for the masses. There was, of course, a gifted pullout program as well to meet the needs of those who qualified. I couldn't help but view this as utterly inadequate and wanted to provide a different kind of "enrichment" experience for creative students whose talents were largely being ignored. I saw a theater program as a means of providing an opportunity for creativity and self-expression, for developing a spirit of community and cooperation, and as a way of improving students' self-concept and confidence. It accomplished all that and more. In fact, the stage became the most fruitful educational setting in the entire school for many of our students. A large number of our gifted students gravitated naturally toward the fledgling theater workshop, seizing an opportunity to express themselves creatively. But so did many others. Some of our most rebellious and challenging students discovered a way to channel their negative behavior into productive and creative

expression as well—to the absolute astonishment of many of their teachers and the administration. Students from all walks of the school became involved in the activity, transforming the stage into a truly democratic classroom for the gifted and talented, regardless of their results on an IQ test.

First, let us consider the benefits of using theater as a teaching and learning tool. In considering the theater experience, a whole range of skills and talents are set into motion. When we think of dramatic arts, most of us focus on acting as the linch pin of the process, and certainly this is a vital component, but it is merely one component in a complex array of skills required for a successful performance or product. Many gifted students rise naturally to the challenge of acting because they tend to be sensitive and empathetic. They have lived in their imaginations and, just as they "become" the characters in books when they read, it is a logical next step for them to slip into a character on stage—and some do it with astonishing ease. Many of these students have a strong sense of spatial relationships and some have excellent motor coordination. Most have a finely attuned perception of human behavior. They are generally excellent observers of human behavior. They love to invent and create. They desire to create rather than imitate, though many can quickly and accurately imitate when called upon to do so. They are creatively expressive and experimental. They can improvise and generally have a highly developed sense of humor. They are orally expressive. They are problem solvers. They love a challenge. They take risks.

Do all gifted students make good actors? Absolutely not. Some are extremely introverted and wither under the spotlight, while others blossom unbelievably under that same intense light. Are they all vocally and facially expressive? Hardly. Some view the stage as a perfect vehicle for displaying their multifarious talents, while others would rather die than creep onto that same stage. Some love the pressure of performing before an audience; others hate it. Many are secure enough to appear ridiculous and take risks before their peers; some lack the self-confidence to speak in front of even a small group. Are some people naturally gifted in acting? Certainly, and they may not have the tested IQ to qualify for a district gifted program. If, however, acting were the sole component in a theater production, I would not be suggesting it as a tool for teaching the gifted. Fortunately, like any complex organization, there are many levels and degrees of involvement in the theater and room enough for all students to flourish, especially (but not solely) those typically considered our gifted students.

Acting talent alone will never make a success of a theater project. Let us then consider some of the other facets of theater production besides acting. One of the realms of giftedness we are coming to recognize as increasingly important is that of leadership. Those gifted in leadership tend to assume responsibility and set high standards for themselves and others. They are good communicators with the ability to foresee the consequences and implications of their decisions. They tend to have sound judgment, are highly organized and extremely focused. Those with leadership skills and acting talent quite often raise the bar for their fellow actors. Another obvious role for those with leadership ability is assistant director or stage manager. Both are high-profile, behind-the-scenes positions that carry a great deal of responsibility. Those gifted in leadership do a great job in maintaining records, handling publicity, budgeting, scheduling, organizing others, etc. They pay close attention to details and possess the managerial skills to keep the project on schedule and on track. They are practical problem solvers. This type of person doesn't mind the nitty-gritty of those mundane chores that often drive the "artistically" talented out of their creative minds. Because they set such high standards for themselves, they will often volunteer to work on projects at home and will spend countless, unrecognized hours bringing a project to fruition. Others in the group (especially the director) quickly realize the value of those with leadership skills and come to depend on their unique abilities.

One of the difficult lessons I had to learn early, in directing plays for middle school students, was that I couldn't do it alone. I realized that I would have to delegate authority to students and other teachers. It was an extremely valuable lesson for me because I learned that others were often far more capable of solving problems that would arise than I was. My expertise lay in writing the script and directing. I quickly discovered that others could handle the myriad other jobs that needed to be done—and often better than I. This is a lesson that is readily transferable to students as well. Gifted students soon realize that even their skills have limitations. For example, for one production we needed a rubber chicken to cross the stage at various times. I asked my students if any of them was good at mechanical things and wanted to work on this project. One of my students (certainly not identified as gifted) devised an ingenious method of rigging the rubber chicken to a remote-controlled car. He then volunteered for other tasks requiring mechanical or technical ability. This young man gained the respect of the others because of his unique problem-solving abilities and his skill in fixing things. He became a peripheral but indispensable member of the stage crew. He gained in self-esteem, and we gained through his technical ability. His talents would never have emerged in the traditional classroom setting.

Those talented in visual arts can find their place in the theater as well. Certainly in set design and construction, their talents are crucial. Some love to design and make costumes. Others develop artwork for programs and posters. Still others have an interest in make-up. Some find their niche working on special effects.

I sometimes use mimes in my plays. When I first conceived the idea of using mimes in the cast, I really wasn't sure how I was going to use them or even if I could find students who would be willing or able to learn the difficult art of miming. Since I was just toying with the idea, I asked who was interested in learning to mime. Several students very enthusiastically volunteered. Unfortunately, I couldn't devote a great deal of time training them, so I checked out several books from the local library on miming and a few Charlie Chaplin films. I asked them to do a little research and then work out some routines, checking back with me periodically so I could critique their progress and make suggestions. What

evolved over several months was a trio of very talented mimes who became immediate favorites with the rest of the cast, crew and, ultimately, the audience. Set to music, their acts became a play within the play. Incidentally, when you use mimes, the make-up is crucial. Consequently, I needed someone who could apply their makeup precisely by using pictures of professional mimes as a guide. I found a girl who loved the challenge and did beautiful work. Their make-up was a very time-consuming task. This was her sole job, and she excelled at it. It required incredible patience and expertise—another unique talent tapped.

Some students are enormously gifted in technology, particularly computer skills. This type of student can be utilized in designing programs, posters and web pages (as well as some of the more mundane computer chores). The artwork that can be computer-generated today is incredible. By pairing the visually artistic with the technologically proficient, each gains new insights and learns new skills. Creating a web page is a time-consuming and complex task, combining logic, technological expertise and artistic skills. One of my students suggested burning a CD of all of our sound effects and music for the show. Prior to that, we relied on as many as fifteen CDs and various tapes. I didn't even know such a thing was possible. Not only was it possible, but it was readily accomplished by this computer wizard with an interest in sound editing. Few computer courses offered to middle school students give the technologically gifted the opportunity to take their skills to new heights. Because these students are so focused and devote so much time to learning the intricacies of computer science, many of our more technologically talented students enter a computer class with more knowledge than their teachers. Is it any wonder that so many of these "techies" enjoy the challenge of hacking into others' systems? If we don't offer them fertile ground in which to grow, is it any wonder they sometimes trespass into forbidden territory?

Another obvious aspect of theater production is music. Whenever possible, I try to incorporate live music into our plays. The reason is simple. Schools have a wealth of musical talent that is often hidden away, except for occasional band or orchestra concerts. Many musically talented students may not want to act on stage, but they are more than willing to play their instruments. This gives them another avenue for their talents—and draws them into the theater community. It also adds a whole new dimension to the production. A great many of our students take private lessons in voice or dance, yet few of us are even aware of it. A call for singers, dancers or instrumentalists often yields unexpected rewards. I had no idea some of my students were taking lessons in swing or tap dancing, or were experienced in gymnastics. It was an easy decision to write them into the show. Those of us who teach a single academic subject often don't realize that our students carry hidden talents. I once found that an ESL student was an incredible pianist. I learned about him when I asked my theater students if they knew any musicians who would be willing to play during scene changes. His name came up immediately, and he was more than willing to perform for us. Many teachers and students were amazed at his ability. His talent was a well-kept secret within the school until we showcased him in our production. He went on to play for several other events, including his own graduation.

Also needed are people to assist the director with the lights and sound. Others will have to organize the props. Still others need to work on set construction, costumes, etc. There are a multitude of jobs to be done, depending upon the complexity of the production. Some of these jobs require more skill than others, but they are all vital for the success of the production.

Schools are a treasure trove of talent, though many of those talents remain hidden from the light of day because schools seldom make space for them in their lock-step curriculum. Talents need space to grow, and we as educators have an obligation to provide that space whenever possible.

We all know that gifted children often have difficulty relating to their age peers. They may be able to work well with their intellectual peers (and sometimes not!), but they may experience great difficulty in dealing with those less gifted than they. One of the unexpected rewards of a theater program is the interaction between those labeled as gifted and the rest of the members of the production. Gifted students will eventually move into the real world where they will have to work cooperatively and competitively with people of all levels of ability. They need to develop their interpersonal skills early if they are to make this kind of transition successful. Students working in theater soon learn that no one person can do everything, no matter how gifted or talented one is. Furthermore, gifted students learn that intellectual ability is not the only form of giftedness, and they gain new respect for those they may have shunned in the past.

The gifted, of course, often shunned themselves as "freaks" or "geeks" by many students. Theater creates that rare bridge connecting students of all abilities and all areas of giftedness. I've seen solid and lasting relationships develop among individuals of diverse cultural backgrounds and vastly different intellectual abilities because of their involvement in the theater experience. These students suddenly find themselves in a situation not unlike life itself, and they learn a great life lesson from it: there is strength in diversity, and respect for others can only lead to better things for everyone.

We all tend to build on our strengths and avoid situations that may draw attention to our weaknesses. We all have our own comfort levels and are hesitant to move beyond them. The gifted student is no exception. Growth only comes with taking risks and pushing our own limits. With every play I write and produce, I try to do something new in terms of the script, set design, special effects, music, etc. This, of course, sets new boundaries to break for the cast and crew. They too are pushed to their limits to break new ground. The gifted especially need this kind of challenge and generally thrive on it. There are always problems that arise when attempting something new. I sometimes have no idea how those problems will be solved at the outset, but eventually, with the input of the students, a solution is found or an alternate route taken. For example, in several plays, I used a ventriloquist's dummy. Since I didn't have a ventriloquist on hand among my students, we had to solve such problems as making the voice correspond with the dummy's mouth, making the dummy seem alive and not doll-

like, where to position the actor delivering the dummy's lines, etc. Students need to see that you're not afraid to try something new or difficult, and they will be more willing to take the necessary risks to grow themselves.

As we near the end of the rehearsal schedule, with the performance about a week away, I relinquish control of the production to my students. It becomes their production, not mine. This is not unlike letting your son take the car for the first time—scary, but necessary. Students need to feel ownership in the enterprise, and after several months of rehearsal, they do. But it's important to put it into so many words that they are ultimately responsible for its success or failure. Just as there were many steps before letting that son drive the car on his own (and many hair-raising moments!), control was very gradually being placed into his hands all along. I do the same with my students. The week before the show, I tell my students they are now in total control—onstage and backstage. Any problems they encounter, they must solve on their own. The show must go on, I tell them, without me. I let them know they are only to stop the show if someone is sick or hurt! They should be able to solve anything else. I am present in one of the back rows of the auditorium, of course, furiously taking notes on their performance so I can critique it with them. But they are the ones driving; they are in control. I am merely watching the scenery. Here is where responsibility, decision-making and good judgment take over. This is the point at which cooperation and teamwork finally come into full play in a purposeful way. They have never failed. Some problems do arise, and they solve them—sometimes ingeniously. Once, before a full dress rehearsal, I sent a cast member to the nurse to have a cut bandaged. I'd forgotten she was gone, and we started the show without her. She, of course, missed her cue to come onstage and the actors ad libbed for ten minutes until she rushed onstage with her newly bandaged finger. They were all exceedingly proud that they had risen to the challenge I had inadvertently created for them. Backstage and onstage, the students monitor themselves and work as a unit. After the rehearsal, we talk about what went wrong and what went right, and we brainstorm to correct problems. I've learned that if I give them the problem, they generally can find the solution. After all, they're the ones closest to the problem, being onstage and backstage. They also become their own harshest critics. This is their show now, and they want it to be a success. And, ultimately, it is.

Students, of course, learn by example, and one object lesson I always give them is my reliance on the resources and talents of others. They watch me working closely with the art teacher on set design and construction. They see that the ESL teacher designs and sews all our costumes for us. I often consult the music teachers when I need their expertise or to borrow an instrument as a prop. The computer teacher is on call whenever we have a problem with the computer or digital camera, or need help designing tickets. If I ever have a special need for something (like a large tricycle, inflatable furniture, or an old trunk), I e-mail everybody in the district and usually get an immediate response. Now, teachers regularly leave old furniture or clothing outside my door. I a the larger community when we have a special need. One parent regularly combs garage sales and the local thrift stores for unusual items. I recently wrote a play about a magician.

Since I had no experience in magic, I asked my students if they knew anybody who did. One student's parent was an amateur magician. He not only instructed us in magic, but made us some new magic tricks to use in the show. A teacher's husband, experienced in carpentry, builds special props or scenery for us. Local businesses are sometimes used as resources. For example, we once needed a large shopping cart. The local grocery store gladly donated one in exchange for a little publicity in the program. When we needed a ventriloquist's dummy, we e-mailed a company and got a discount in exchange for the same kind of publicity. Valuable life lessons? I think so. Students need to learn to rely not just on their own resources but the strengths and resources of others. They also need to see adults working cooperatively to accomplish a task if they are to learn that skill themselves. Some gifted students always choose to work alone. When given a group project to do, they often will ask if they can do an individual one. I think it's important that they realize there is often strength in numbers and wisdom in relying on others' strengths as well as your own. Furthermore, our gifted students need to be able to work as a member of a team since so much of business today uses the team concept and wants "team players." It's an important social skill we'd be remiss not to develop in the gifted since they, especially, have so much to offer an enterprise.

If theater production seems like an enormous amount of work, it is. However, it offers a method of teaching that knows no bounds. It is the perfect vehicle for moving students forward intellectually, creatively and socially. In my experience, no other investment of time and energy can pay higher dividends. Can this be done on a smaller scale with comparable results? Of course it can. In fact, starting small is probably the secret of success in this particular scenario unless you have a great deal of theater experience, which I didn't when I started. For years, I incorporated plays into my regular curriculum, mainly because kids enjoyed doing them so much. Later, I began producing one-act plays for the school that I found in play catalogs. From there we moved to full-length plays. I found I was having increasing difficulty finding the right plays for my students. Typically, there weren't enough roles for the number of students I wanted to include in the production (25-30). Also, I didn't find much original material out there, so I began writing my own plays with my students in mind. The drama program became a theater workshop, involving the students in a script that was evolving even as we rehearsed it. Therefore, the students are involved not only in the production of a play, but they witness the complex process of writing the script, almost from its conception. They actively participate in the play's evolution. Furthermore, they know that the play they're working on will eventually be published and produced by others, and that they were a part of the original cast.

I've said this is hard work, and it is. However, an aspect of the experience that needs to be discussed is the aspect of play itself. Theater allows students to play—with ideas, with

character, with dialogue, inflection, movement, sound, light, with the reasonable, the absurd, with ideas, with images—it offers one's imagination the space to grow in a safe, non-judgmental sphere. Many of our students, including the gifted—no, especially the gifted—have forgotten the importance of play in their development. Too often teachers and parents do not encourage it. The gifted are expected to act their mental age instead of their chronological age. How many times have we heard a disparaging remark about a gifted student when he or she does something that would readily be accepted by one of his age peers? Learning need not always be a serious business. Indeed, it shouldn't be. Since I teach literature in addition to drama, I usually have a classroom that's full of props and costumes. My students love to put on the assorted eyeglasses, clothes, hats and wigs. It's not unusual to find the whole class dressed in costume on some occasions. In fact, it's hard to get them not to wear them to their next class. It's amazing what can happen when one allows students the freedom to experiment with character and identity—even in the regular classroom. Playfulness is a gift, and the gifted need a chance to cultivate it. Can one imagine Picasso taking a bicycle seat and transforming it into a sculpture without a spirit of playfulness? Unfortunately, in a traditional classroom setting, playfulness is too often seen as immature or disruptive. Even active word-play is often denied the gifted in the regular classroom. Can one imagine Shakespeare not playing with words? Play is undoubtedly one of the most neglected avenues in the intellectual development of our students. To give the mind free rein to wander and return with wonders undreamt of should be one of the primary goals of all gifted programs. I maintain that the theater offers the ideal ground for fertile imaginations to grow. It is the realm of infinite possibilities, and all students deserve access to it.

If one needs a theoretical framework on which to hang the actors' hats and coats, Gardner's Theory of Multiple Intelligence (1983) would certainly serve admirably. What other educational experience sets the stage for growth in all seven areas: the Visual-Spatial, Logical-Mathematical, Linguistic, Musical, Inter-personal, Intrapersonal, and Body Kinesthetic? How could one conceive a more suitable classroom than a theater for growth in all these areas? Where else in a school can all these talents be assembled in one place and be given space to flourish and blossom?

We all know there are many paths to success for our students. I am merely suggesting that one of these paths should be through the doors of a theater. If we want to differentiate the curriculum for gifted students, why not involve them in the process of creating a work for the stage? It certainly requires higher level thinking skills, problem solving, creative thinking and, finally, a product that is uniquely the students'.

As Hamlet said, "There are more things in heaven and earth, Horatio, than are dreamt of in our philosophy." Isn't this precisely the attitude we want our gifted students to embrace, that the world is full of possibilities—challenges to be met, problems to be solved, creations to be made? The theater experience provides a unique challenge for gifted students and enhances the education of all students in the process. And society, ultimately, will be the richer for it.

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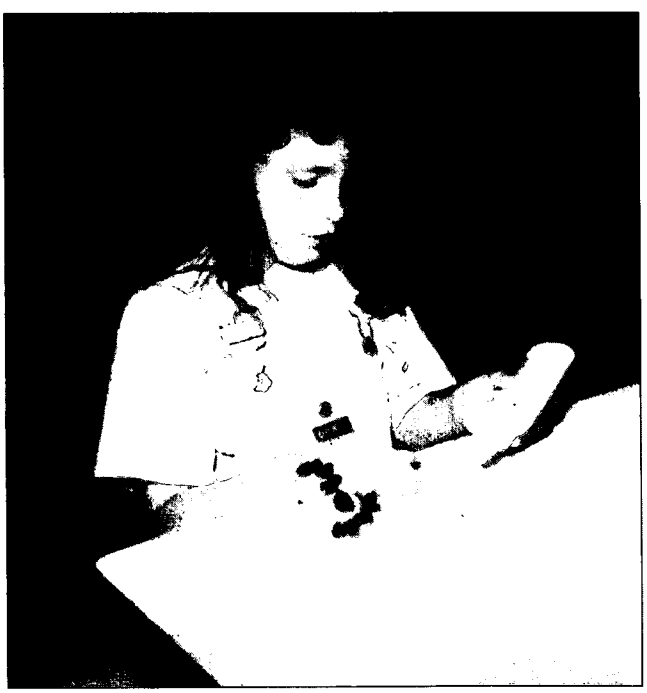

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Responsibility for nurturing, encouraging, and supporting the full development of potential in children and youth is accepted and shared by their families, educators, and communities. Individuals value themselves and their accomplishments. Their contributions are celebrated by society.

Goals

- *To promote advocacy efforts that benefit gifted and talented children by establishing an effective political network.*
- *To develop standards of quality for what teachers and other professionals need to know about educating children with gifts and talents.*
- *To develop standards to evaluate the appropriateness of programs and services which affect the lives of children with gifts and talents.*
- *To foster professional growth of educators by providing opportunities to learn about standards of quality for understanding and teaching children with gifts and talents.*
- *To network with others by disseminating news and information to educators and parents through regular communication in the form of a newsletter, journal and the Internet.*
- *To work cooperatively with the Illinois State Board of Education, universities, and other organizations that serve children with gifts and talents.*

For more information, contact us at:

IAGC
800 E. Northwest Highway, Suite 610
Palatine, IL 60067-6512
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