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ABSTRACT

This book and video are based on a symposium of leaders in the fields of gifted education and middle-level education, which was held to identify and explore areas of agreement in often contrasting philosophies. Emphasis is on identifying areas of agreement between the fields, areas of tension, and promising directions that could engage educators in mutual planning of appropriate services for all middle-school students. The book includes the following papers: (1) "The Middle School: Mimicking the Success Routes of the Information Age" (Thomas O. Erb) which reviews the historical issues surrounding gifted education and middle-level education; (2) "Middle Schools and Their Impact on Talent Development" (Mary Ruth Coleman and James J. Gallagher) which describes two studies, one which compared attitudes of middle school and gifted educators and the other which looked at current best practices; (3) "Gifted Learners and the Middle School: Problem or Promise?" (Carol Ann Tomlinson) which outlines areas of tension between the two fields and suggests areas where leaders might collaborate; (4) "Differentiating Instruction for Advanced Learners in the Mixed-Ability Middle School Classroom" (Carol Ann Tomlinson) which provides specific suggestions for differentiating curriculum; and (5) "Instructional and Management Strategies for Differentiated, Mixed-Ability Classrooms" (Carol Ann Tomlinson) which provides a matrix of instructional strategies. Appendices include a list of symposium participants and the video script. The video presents views of symposium participants and gifted students on these issues and demonstrates students' needs for both integrated and separate learning experiences. (Contains a bibliography of 18 items.) (CR)

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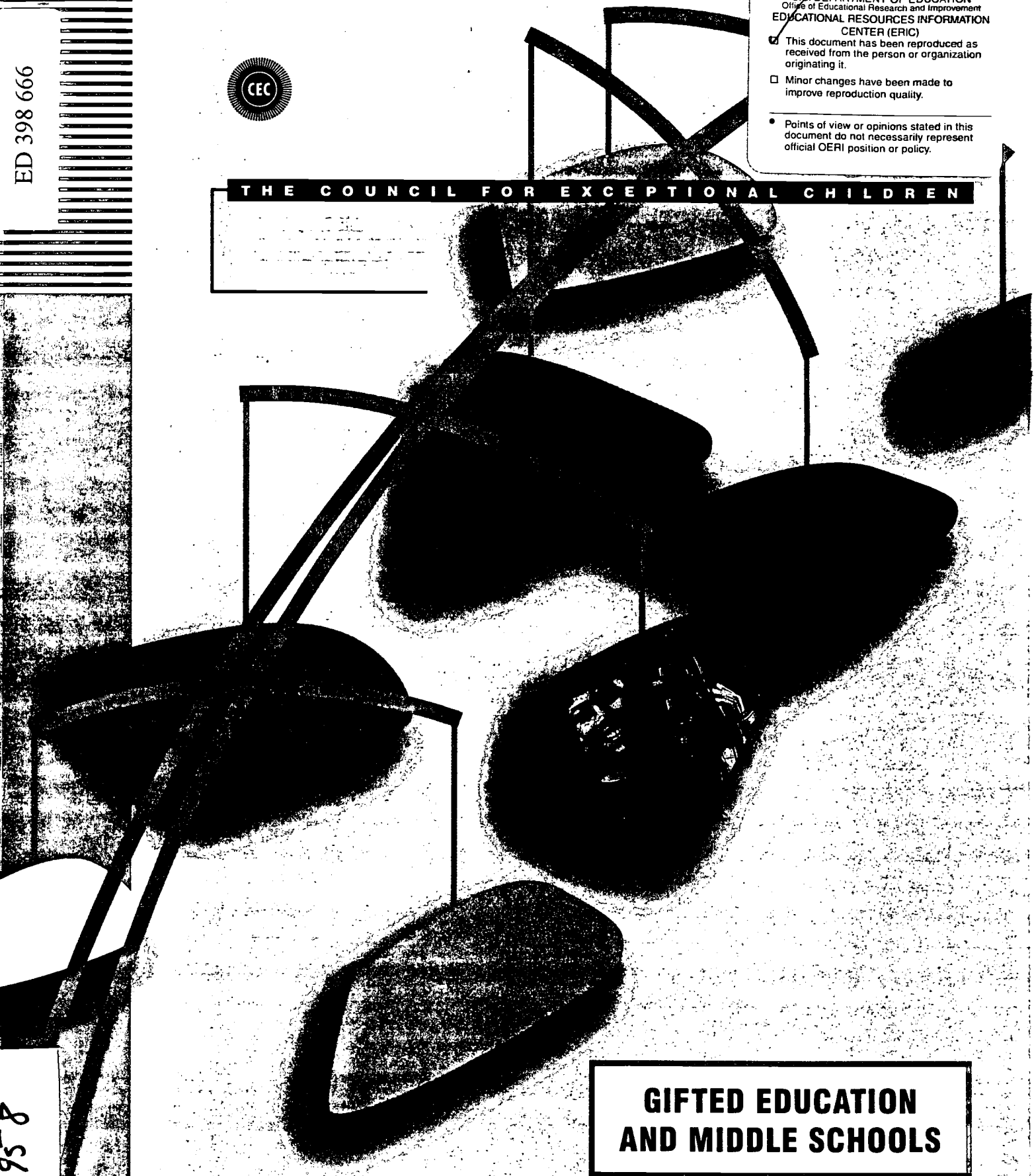

GIFTED EDUCATION AND MIDDLE SCHOOLS

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CEC's National Training Program for Gifted Education project is proud to release *Gifted Education and Middle Schools.*

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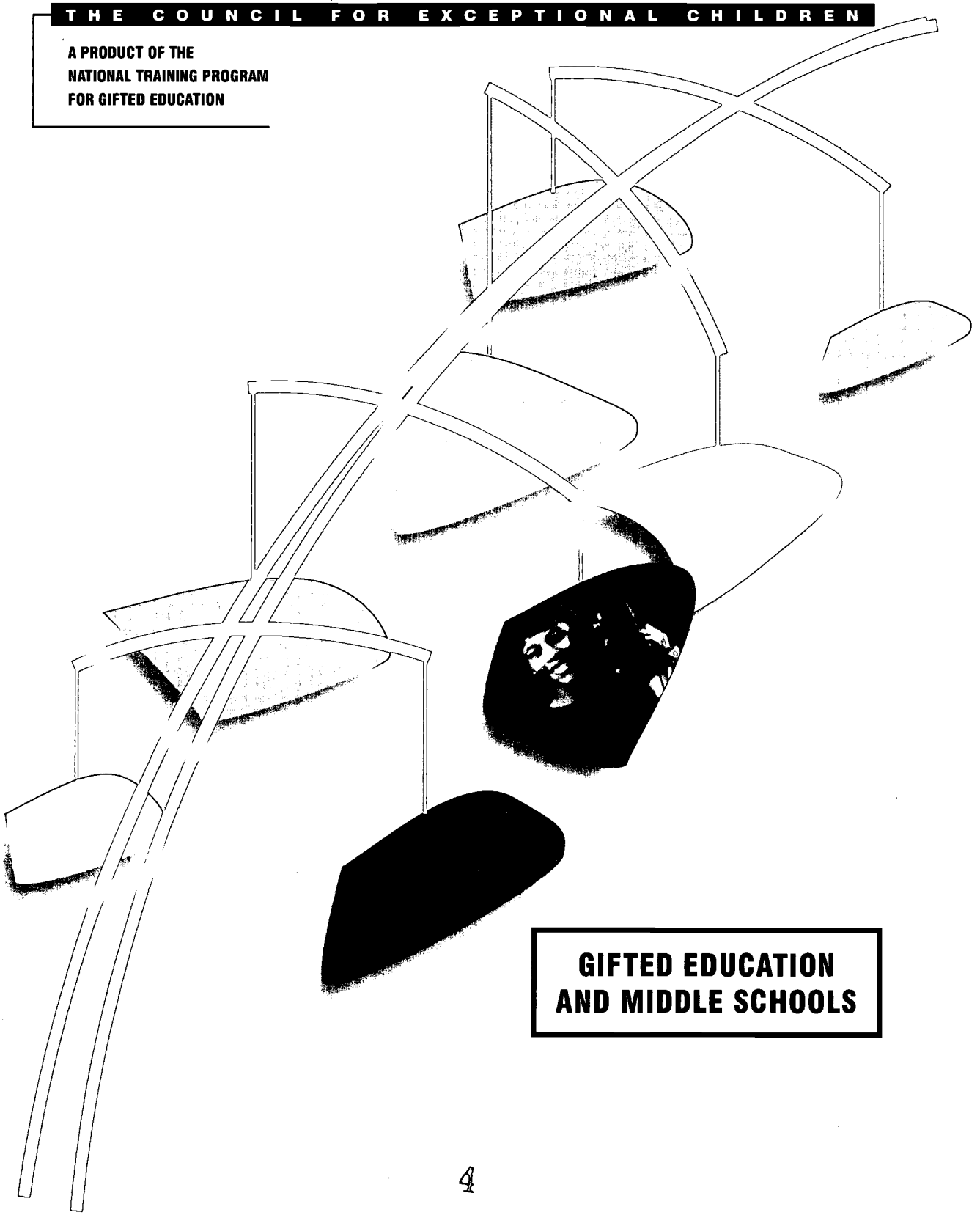

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To all the Symposium participants, whose ideas contributed to the development of the video and book, we express a heartfelt thank-you. Without the combined ideas of all, particularly the students, this publication would be far less useful. The students who participated in the Symposium helped the professional educators and other adults to stay grounded in reality, and at times simplified and clarified the issues, providing a new sense of direction. Despite strong opinions, the adults listened carefully to the students, and remained open-minded regarding the central issues. Appendix A lists the names of Symposium participants.

We appreciate the video footage provided by the Center for Talented Youth (CTY), Johns Hopkins University; and the Duke University Talent Identification Program. We are grateful, too, to the organizations that allowed us to print material that appeared originally in their publications: The National Middle School Association (*Middle School Journal*, 1995, *26*(3), 47-56); The Association for the Gifted (*Journal for the Education of the Gifted*, 1994, *17*(4), 385-406); and the Association for Supervision and Curriculum Development (*How to Differentiate Instruction in Mixed-Ability Classrooms*, 1995).

Introduction

Historically, tension has existed between the fields of gifted education and middle-level education, leaving some advocates of each educational practice suspicious of the other and leaving middle-level students who are advanced in one or more dimensions of learning in an educational no-man's land. In January 1995, The Council for Exceptional Children hosted a symposium that brought together leaders in the fields of gifted education and middle-level education to identify and explore areas of agreement in their often contrasting philosophies. While some legitimate areas of disagreement persist, there are enough areas of shared belief to begin bridging the practices of gifted education and middle-level education. This book and the accompanying video provide an overview of some bridges or areas of agreement between the fields, some areas of tension, and some promising directions that could engage educators in mutual planning of appropriate services for all middle-school students, including those we sometimes call gifted.

The first part provides an overview of some of the historical issues that surround gifted education and middle-level education. Part 2 describes a research study that compared the attitudes of middle school and gifted educators, finding several areas of agreement, and a second study that looked at current best practices. Part 3 outlines some areas of tension between the two fields and suggests areas where leaders might collaborate, and Part 4 provides specific information on differentiating curriculum in mixed-ability classrooms. Part 5 builds on curriculum differentiation by providing a matrix of instructional strategies that will aid teachers who want to offer services to meet the needs of students who are gifted. Appendix B is a printed version of the video script.

Professional educators who want to provide appropriate services for gifted students may have received little or no training and may not know what areas of knowledge and which skills are necessary to instruct these students. The Council for Exceptional Children has developed a set of comprehensive standards and guidelines for the preparation and certification of special educators (*What Every Special Educator Must Know, The International Standards for the Preparation and Certification of Special Education Teachers,* 1995) that provides an agreed-upon list of knowledge and skill areas believed to be essential for professional educators who work with gifted students. The following knowledge and skill areas are addressed in this book :

- Articulate the pros and cons of current issues and trends in special education and the field of gifted education.
- Design cognitively complex discussion questions, projects, and assignments that promote reflective, evaluative, nonentrenched thinking in students with intellectual or academic gifts or talents.
- Select instructional model(s) appropriate to teaching topics, content area, or subject domain.
- Use instructional models; topic/domain instructional model matches commonly implemented in teaching gifted learners; and cognitive, affective, ethical taxonomies in order for higher levels to be addressed through instructional strategies.

The video companion to this guide is closed-captioned, can be used in many settings, and is appropriate for multiple audiences. The issues presented are likely to be shared by members of any group of educators or citizens concerned with the educational needs of young adolescent children and are likely to generate lively, productive discussion. Some of the solutions proposed by the students and educators may not work for your school, but the video and guide will facilitate a collegial approach to discussion and resolution of these important issues.

The Middle School: Mimicking the Success Routes of the Information Age

Thomas O. Erb

"The success routes of an era dictate the dominant patterns of schooling." Broudy & Palmer, 1965, p. 159

The development of middle schools over the past 30 years represents the second major school restructuring movement in the twentieth century. Once before in this century, America found its schools inadequate for preparing students to perform in the world beyond the school. In the middle of the nineteenth century, the 8-year elementary school was the dominant pattern of schooling in this country. By the 1920s, junior and senior high schools had emerged as the new dominant pattern. Today the middle school model is leading the way to significant school reform.

To explain what middle schools are it will be necessary to relate them to the historical period in which they were created. To clearly understand middle schools we shall first briefly illustrate how the development of junior and senior high schools, and elementary schools before them, was influenced by their respective eras. Only then will it be possible to explore the unique organizational structure of middle schools. In addition to a unique structure, middle schools are characterized by curricular and instructional practices that are designed to be developmentally appropriate for 10- to 14-year-old youngsters. Recent studies are beginning to document the effects of middle school organization on student outcomes. Finally, the perfect middle school does not exist so that there is plenty of room for educators and parents with diverse perspectives to contribute to the improvement of middle school programs throughout the country.

Elementary Schools Dominate the Nineteenth Century Yielding to High Schools in the Early Twentieth Century

In the nineteenth century the typical American receiving formal schooling attended an elementary school until about age 14 or 15 and then, having acquired the basic skills of literacy and numeracy, left school to take his or her place in adult society. These schools tended to be small so that they were organized around a single teacher who delivered the total curriculum to the entire student body (see Kliebard, 1987). The classes in this one-room school were heterogeneous in many ways, not the least of which were the multi-aged classrooms that put 14- and 15-year-olds together with 6- and 7-year-olds. Instruction, though it might be circumscribed by selected texts such as McGuffy's Readers and by the socialization imposed by boarding teachers in the various households in the community, was under the direct influence of a single teacher. That teacher taught all of the students from the first year to the eighth, often with the assistance of older, more experienced students helping the younger ones learn their lessons.

The organization of this eight-year elementary school tended to be patterned after the types of organizations that graduates would work in as adults. The chief means of production in the nineteenth century was the family farm and the small craftshop. In that craftshop the individual craftsperson would take

orders from customers, secure the raw materials, design the product, manufacture the product, and market that product to the customer. Small farming was a variation on this theme. So was schooling where the single teacher was in charge of delivering the entire curriculum to all students for the entire time they were in school.

This pattern of schooling was so dominant that even at the beginning of the twentieth century only about six percent of Americans went on to high school. However, late nineteenth century criticism of American public schools grew to a crescendo in the early twentieth. By the turn of the century the Industrial Revolution had rendered a good agrarian-based education incapable of producing students who had the skills and habits necessary to take the jobs available in the factories of the Industrial Age.

The means of production had been revolutionized. Instead of a craftsperson who managed the entire production process, what was needed was an assembly line worker who could perform assigned tasks without questioning authority or thinking too much about what he was doing. Indeed a premium was put on following orders and working in isolation (Skrtic, 1989). Factories, as opposed to craft shops, were hierarchical structures that required a small percentage of employees to design, organize, and manage the work for the majority laboring on the assembly lines.

Accompanying the Industrial Revolution there were other changes occurring in America that were influencing the public schools. Large numbers of immigrants from southern and eastern Europe, as well as the increased migration of rural Southerners to the growing industrial cities of the North, put pressure on schools to emphasize a common American culture as part of the curriculum. Nonexistent at the turn of the century, social studies requirements were becoming commonplace. Both citizenship education and preparation for a changing work place expanded the agenda of the public schools in the early twentieth century.

The eight-year elementary school taught by one person who delivered essentially the same curriculum to the entire student body, was not organized to produce the differentiated outcomes demanded by the factories of the new era. By the 1920s a new type of school with two divisions, patterned after the factories that dominated the Industrial Age, came into prominence: the restructured high school, junior and senior division. The junior high school took the last two years of the old elementary school and the first year of high school to create a new type of school for grades seven through nine. The undifferentiated curriculum of grades seven and eight in the old elementary school was supplanted by a new curriculum that included new vocational subjects, student guidance, and the bringing of high school subjects such as foreign language and algebra into these middle grades. By placing a natural break after ninth grade, instead of after eighth grade as had been the case, and by placing new subject matter in grades seven and eight, it was expected that students who left school after ninth grade would have the skills necessary to be successful in the jobs opening up in industrial America (Van Til, Vars, & Lounsbury, 1961/1967).

At the same time that the junior division of the high school was created, the senior high school's role was expanded beyond college preparation to become a comprehensive school that would serve the masses whether the students were planning to enter the assembly line work force after high school or were planning to go on to college to acquire the training to become the managers in the new enterprises. Just as factories were larger and more complex than craftshops, junior and senior high schools were larger and more complex than the elementary schools they supplanted. The new era demanded specialization. The school responded by creating a departmentalized structure. Now instead of one teacher teaching the whole curriculum to all levels of the organization, teachers became specialists, each teaching only a portion of the curriculum to students. In addition to subject specialization, grade level specialization was adopted. With increased size and the complexity associated with dividing the curriculum among various subject and grade-level specialists, issues of management and control emerged. Consequently, new roles were created for those who could administer these complex organizations, and the profession of school administration was born. Now the large junior and senior high schools took on the hierarchical structure of the factories for which they were preparing students (McNeil, 1986; Skrtic, 1991b).

The classrooms of the factory era schools were organized like assembly line work stations. Students were to learn basic facts and in-

formation that would render them literate enough to master the jobs being created in business and industry and to function as loyal Americans. However, they were not to become so skilled or knowledgeable that they could question what they were taught (Wrigley, 1982). The production quotas in business and industry had their educational counterpart in the form of curriculum to cover. The covering of the curriculum was measured by counting Carnegie Units. A "product" was complete when it had completed 18 units or whatever the locally prescribed production quota (graduation requirement) was. The schools were organized, as were industries, to deliver efficient production. However, not all students were destined for assembly lines. The new comprehensive high schools needed to differentiate their programs to prepare learners for different futures (McNeil, 1986).

The emerging academic discipline of psychology provided an important piece of technology that would greatly assist those who managed the work of the newly re-created high schools. Psychologists' invention of the bell curve would prove an invaluable tool in the task of sorting out the future assembly line workers from the future managers and professionals. With I.Q. tests, school officials could easily sort that 15 to 20% of students who would be trained to become the managers and professionals in a college preparation program from that 60 to 70% who would become the workers. Another 15 to 20% at the low end of the bell curve would be sorted out to be prepared for the menial jobs in industrial America.

America Continues to Change

From the 1940s through the 1960s, this economic and educational arrangement helped the United States win the Second World War and build one of the most prosperous nations in the history of the world. However, by the late 1960s all was not well in the land so that many of the established ways came under attack. In addition to the raucous debates about civil rights and the Vietnam War, other less dramatic questioning of the status quo was beginning. Schooling came under attack for several perceived failures.

Junior High Schools Come Under Attack. One area of concern among a few scholars and educators focused on meeting the developmental needs of the 10- to 14-year-old children who were starting the transition from childhood to adulthood. Although we had learned much about the rapid changes taking place in the pubescent bodies of young adolescents, about the changing ways in which they could think, and about the changes taking place in the social/emotional side of their personalities, critics blamed factory-model junior high schools for not doing a very good job of addressing these needs (Alexander, 1969: Alexander et al., 1968; Eichhorn, 1966/1987). In addition to all of the usual dimensions that characterize human diversity—self-confidence, motivation, general ability, learning style, reading ability, leadership skills, analytical skill, etc.—young adolescents are found at all five Tanner Stages of physical maturity (Eichhorn, 1973; Tanner, 1962), in at least three levels of mental maturity (Eson & Walmsley, 1980), and on several different points on any scale of social/ emotional maturity (Elkind, 1967, 1984; Erikson, 1963, 1968; Mead, 1965; Redl, 1966).

In short, junior high schools, organized to turn out academic products fashioned to fit a predetermined mold, were failing to address the developmental needs of many students. The school structure was too rigid to accommodate the diversity that kept walking in the front door. Typically the factory-model school, built on the hierarchical management of specializations, would create a new course or program to alleviate a problem when diversity got too complex to handle in the existing classrooms. After the initial division of work into subject and grade level specializations, it was found that many students were not learning well in the types of classrooms being provided. The result was the creation of classes for the learning disabled and various Title and Chapter classrooms. In addition, classes within subject area were tracked to allow even further specialization within the prevailing school structures. Industrial era schools tended to respond to the increased diversity of their learners by creating additional specializations that further fragmented their programs (Skrtic, 1991a, 1991b).

Skrtic (1991a) more fully explains how this process worked in what he called the "machine" and "professional bureaucracies" that characterized twentieth-century American schools. He demonstrates that both types of bureaucracy are basically non-adaptive. Both

perform standardized functions that assume a stable environment. He claims that in this century schools have been managed and governed as machine bureaucracies, an organizational structure that is premised on the assumption that the work to be done is simple so that it can be rationalized into a series of precise and routine tasks that can be performed by separate workers. Furthermore, this work can be coordinated by standardizing the work processes through the use of job descriptions, precise instructions, and rules and regulations. Lee and Smith (1993) contrast what they call the "rational bureaucratic" model of schools with the "communal" model. The rational-bureaucratic model is focused on formal functions and specialized tasks, with teachers and students interacting in roles that are affectively neutral, rule governed, and differentiated in status. The communal model emphasizes the social relationships within schools, minimizing role differentiation and emphasizing a common ethos governed by informal interaction and consensus. For students in bureaucratic schools, the unintended side effect of having programs delivered by independent professionals who have little or no communication with each other is a fragmented curriculum. Students' instructional programs have been delivered by specialists working in isolation from each other and often at cross purposes with each other.

Skills of Graduates Criticized as Inadequate. Beginning about the same time that junior high schools were being criticized for their failure to successfully address the needs of young adolescents, senior high schools came under attack from the outside for failing to produce graduates with the skills needed to be successful in the work force (Boyer, 1983; Goodlad, 1984; Sizer 1984). While some people interpreted this attack to mean that the schools were deteriorating and that they needed to do a better job of the tasks that they had been doing for most of the twentieth century (National Commission on Excellence in Education, 1983), an alternative interpretation may make more sense. Though many critics have outlined the skill deficiencies of today's graduates, the most comprehensive analysis of the skills needed to succeed in the current labor force was provided by the U.S. Secretary of Labor (U.S. Dept. of Labor, 1991). The workplace know-how that is now needed includes basic skills such as the ability to read, write, perform mathematical operations, and listen and speak effectively. In addition, thinking skills such as thinking creatively, making decisions, solving problems, visualizing, and knowing how to learn are needed. In order to succeed, workers also need to have personal qualities such as responsibility, self esteem, sociability, self management, and integrity. Five broad areas of competency have been identified:

1. Ability to allocate resources such as time, money, materials, facilities, and personnel;
2. Ability to use interpersonal skills to work effectively on a team, to teach others new skills, to serve clients or customers, exercise leadership, negotiate, and work with diverse people;
3. Ability to acquire, evaluate, interpret, and communicate information as well as use computers to process it;
4. Ability to understand complex relationships and systems, correct performance, and design new systems; and
5. Ability to select appropriate technologies or tools for a task, apply technology to that task, and maintain and troubleshoot equipment (U.S. Dept. of Labor, 1991).

These are not the skills that led to living the American dream on the assembly lines of the early twentieth century. Just doing a more efficient job of what we had been doing for the last fifty years did not seem like a useful response to the internal critics who were complaining about the inadequacies of the junior high school or to the external critics who were complaining about the poor skills demonstrated by school graduates. Just as America had undergone an industrial Revolution in the late 1800s and early 1900s, America was undergoing another revolution in the way production was organized. Various labels have been attached to this new economic revolution: Post-industrial, Information, Service. Just as the craftshop model elementary schools designed for an agrarian society were no longer viable for the Industrial Era, the factory model junior and senior high schools designed to meet the needs of the Industrial Age were becoming out of step with the needs of the Information Age.

One other force of considerable magnitude that reshaped the playing field upon which schools operated was the social revolution taking place in the nation to advance civil rights and gender equity. Symbolized by the Supreme Court's 1954 decision in Brown vs. the Board of Education of Topeka and pushed by the civil rights movement of the 1950s and 1960s, society began to pay more attention to the rights, including the educational rights, of minorities. In the 1940s it was the practice to spend considerable resources on the education of white students in the North and virtually no resources on the education of blacks in the South. In 1946 the ratio of expenditures per pupil was at least 60 to 1 in favor of whites in New York compared to blacks in Mississippi (Fine, 1947). In addition Title IX symbolized society's attempts to provide females with the same access to educational opportunities that had been assumed for males. Since the 1960s, public schools have been expected to deal with human diversity that accompanies ethnic, racial, and gender differences in addition to the individual variations, including disabilities, that exist within ethnic and gender groups. At the middle level, add to all of this diversity the differences associated with the developmental changes propelling youngsters from childhood to adulthood. Clearly, schools built on the factory model characterized by adding on new specializations to address every conceivable form of human learning diversity were simply not adequate to do the job of educating students for the post-industrial, post-modern America. A new approach for organizing schools that could accommodate increased complexity was called for.

Middle Schools Represent a Break with the Past

During a seminar at Cornell University in the summer of 1963, William Alexander (1969; Alexander et al., 1968) first articulated a new type of school to address the needs of young adolescents. Refined over the years (Beane, 1993; George & Alexander, 1993; Lounsbury & Vars, 1978; Stevenson, 1992), the middle school concept has come to be characterized by several organizational and curricular characteristics. The idea of the middle school represented a fundamental break with the factory-model structures that had come to be accepted in the twentieth century as the way to do school. For this reason implementing middle schools could not proceed in the same way that making changes in factory-model schools were undertaken. No longer could a new special class or program be added to address some newly identified student need. The complexity of life in post-modern America and the recognition of the immense diversity of the learners coming into schools demanded an organizational structure that was far more flexible, less hierarchical, and less dependent on isolated professionals teaching specialized subjects, levels, and tracks. What was needed was an organizational structure that thrived on diversity, rather than found diversity to be problematic as the bureaucratic school structures of the industrial Age did.

Middle schools were to be organized around interdisciplinary teams. Each student was to be assigned to a group of teachers who shared common planning time and a common group of students. In establishing teams, several bureaucratic constraints characteristic of factory-model schools were removed from the path of teachers. To replace the bell schedule, teachers were given block schedules that allowed instructional time to be divided according to the learning needs of students and the logical time required to carry out different learning activities. Labs, speakers, writing assignments, simulations, videos, independent study time, project time, and field trips, were all easier to schedule by a team of teachers as opposed to the old isolated teacher-dependent-on-the-bell-schedule model that had come to dominate in bureaucratic schools. In addition to better control of time, teachers also had more control over the organization of learning groups in a team arrangement. Students could be grouped and regrouped within the team on a unit-by-unit or even lesson-by-lesson basis. All types of diversity could be accommodated in this way. Whether the critical factor was motivation, ability, learning style, self management, or some combination of these, students could be grouped flexibly for learning. Further support for teachers teamed together was provided by assigning them to rooms that were close to each other to expedite student movement and encourage informal communication among teachers.

The concept of the interdisciplinary team has evolved over the past thirty years so that today the middle school model provides for

Figure 1. Middle school curriculum and organization

Curricular Component	*Collaborative Group Responsible*
Core	
Communications Mathematics Sciences Common Heritage Citizenship	Core team consisting of from 2 to about 7 teachers of English, math, science, social studies and often including learning specialists with expertise in the education of the gifted, learning disabled, and/or behaviorally disordered.
Exploratories/Electives	
Fine Arts Computers Foreign Languages Vocational/Technical Arts Practical Arts Personal Health	Exploratory/Elective team consisting of teachers of music, art, industrial technology, physical education, health, and foreign languages.
Activities	
Athletics Clubs Mini-Courses Performance Groups Academic Competitions/ Exhibitions	A school-wide committee made up of representatives of each core and exploratory/ elective team in the building oversees the activities program. All teachers help to deliver the activities program.
Advisory	
Affective Social Development Personal Growth	Another school-wide committee made up of representatives of each core and exploratory/ elective team oversees the advisory program. All teachers help to deliver the advisory program.

students to have different parts of the curriculum delivered by two different inter-disciplinary teams. Students typically spend approximately two-thirds of a school day with the teachers who comprise their core team. Another quarter of the day is spent with teachers who comprise their exploratory/elective team. The remaining ten percent of the day is spent in the activities program and in the advisory program (Figure 1).

The Core Team. The areas of the curriculum that are considered so basic and so core that every student needs to study these areas every week during all of the years that the child spends in middle school are delivered by a core team. Though variations exist, typically core teams are made up of English, social studies, math, and science teachers. In recent years the concept of the core team has been expanded to include learning specialists in addition to the subject specialists. Learning specialists often include teachers with expertise in learning disorders, behavioral disorders, mild handicaps, and gifted. In addition, interdisciplinary core teams are in a position to consult as the need arises with other experts in the school environment: counselors, media specialists, social workers, psychologists, and administrators.

The Exploratory/Elective Team. In addition to spending part of a school day on a core team, students also are exposed to the exploratory/ elective portion of the curriculum on a second

team made up of teachers with expertise in that portion of the curriculum. This second type of interdisciplinary team meets regularly to discuss the concerns associated with carrying out the exploratory/elective part of the curriculum. Some critics have mistakenly asserted that this exploratory/elective portion of the curriculum is less important than the core curriculum. From the perspective of meeting the developmental needs of a diverse set of learners, such a view is very inaccurate. During the period of dominance of the junior high school from the 1920s to the 1950s, educators have argued for the differentiation of the curriculum to provide for the development of diverse talents and interests (Briggs, 1920; Fraunce & Clute, 1961; Gruhn & Douglass, 1947; Koos, 1920, 1955; Noar, 1953; Van Til, Vars, & Lounsbury, 1961/1967). Young adolescents are undergoing a period of rapid growth. They are becoming aware of many new things to try out. They are also making rapid progress toward discovering their own interests and talents. They need opportunities to experiment with new curricular areas. The exploratory/elective part of the curriculum plays a significant role is this area of child development.

Two things distinguish this exploratory/elective part of the curriculum from the core. On the one hand, there are learning experiences that it is thought all young adolescents should experience regardless of talent or aspirations. However, it is thought that these experiences are not so central to the common core that they require the same level of mastery by all students as do, for example English or mathematics. Such areas often include foreign language, art, music, industrial technology, family living, and computer technology. All students are required to explore these areas of inquiry in short-term (typically in 6-, 9-, or 12-week) experiences.

Secondly, it is recognized that students are at an age when their interests are expanding and their talents are in need of development. Consequently, middle schools provide a wide range of opportunities that are not required of all students for students to choose from. Some of these options are offered to students by teachers of electives as transcript courses such as band, choir, other music electives, foreign languages, drama/speech, industrial technology, and various graphic art options.

The Rest of the Curriculum. Representatives from both types of interdisciplinary instructional teams join together in several school-wide teams to coordinate yet other aspects of the middle school curriculum. One of these additional curricular areas is the activities program. This part of the curriculum includes endeavors such as yearbook, newspaper, student government, and cheerleading. Also included in the activities program are opportunities to extend academic interests such as Math Counts, Odyssey of the Mind, Science Fair, History Day and less competitive options such as creative writing and science fiction. A good club or mini-course program will include non-academic talent areas such as sports, crafts, recreation, leadership and performance opportunities in the arts and community service.

A second program component that is managed by a school-wide team is the advisory program. The advisory program is built around groups of 15 to 25 young adolescents who meet regularly with an adult. These advisory groups are designed to make sure that no students fall through the cracks. Advisors are responsible for focusing attention on the academic, social, and emotional growth of the students in their advisory groups. Advisory meetings provide the basis for a personal support system for all students. As they encounter problems in the rest of the school environment and as they make choices about participation in electives and activities, the advisory group provides a time and place for students to deal with their personal concerns. Although the emphasis in the advisory program leans toward students' personal growth, such growth cannot take place in a vacuum, without skill and knowledge. For example, students may learn leadership skills, conflict resolution skills, and interpersonal communication skills that may be given short shrift elsewhere in the curriculum. In the area of knowledge, students may acquire information about careers, game strategies, community resources, the high school program, and each other that is not covered elsewhere, but is necessary to carrying out the student-focused outcomes of the middle school.

Collaborative Teams Make Middle Schools Different. Delivering multiple curricular components to an infinitely diverse set of learners is possible because interdisciplinary teams are problem-solving groups that bring together into

the decision-making process the expertise of several professionals who can see a situation from several different angles. In the team meeting the teachers talk about student learning, curricular coordination, instructional strategies, and student grouping. Since they share the same students, they are able to identify learning problems and plan together to address those problems. Teamed teachers can also plan curricular modifications and design instruction based on students' needs. Such an arrangement is fundamentally different from the notion of creating special classes for teachers to teach in isolation from other professionals. Instead of delivering a prepackaged curriculum to a set of learners for whom the package has been prescribed, teachers on teams plan with each other and with students to provide instructional variations appropriate for different learners, all of whom are responsible for demonstrating competence in the common core curriculum, but who have opportunities to go beyond the basic expectations.

Because the focus in the last thirty years has been on designing schools to meet the developmental needs of young adolescents, the middle school model bears strong resemblance to what Skrtic (1991a, 1991b) calls an adhocracy. This is an organization that differs from the dominant bureaucratic arrangements that have previously characterized schools. Skrtic explains the concept of adhocracy this way:

> The adhocracy is premised on the principle of *innovation* rather than standardization; as such it is a *problem-solving* organization configured to *invent new programs.* It is the organizational form that configures itself around work that is so ambiguous and uncertain that neither the programs nor the knowledge and skills for doing it are known.... Under such an arrangement, division of labor is achieved by deploying professionals from various specializations on multidisciplinary project teams, a situation in which team members work collaboratively on the team's project and assume joint responsibility for its completion. Under mutual adjustment, coordination is achieved through informal communication among team members as they invent and reinvent novel problem solutions on an *ad hoc* basis, a process that requires them to adapt, adjust, and revise their conventional theories and practices relative to those of their colleagues and the team's progress on the tasks at hand. Together, the structural contingencies of collaboration and mutual adjustment give rise to a *discursive coupling* arrangement premised on reflective thought and thus on the unification of theory and practice in the team of workers (Skrtic, 199la, pp. 182-83) (emphasis in the original).

Middle schools built around various interdisciplinary teams which require collective responsibility for the education of a group of learners are different from schools built on the assumption that specialists can deliver a coherent program to learners by having each teacher teach specialized courses in isolation from each other. While this is conceptually true, do these organizational differences have any impact on student outcomes? A recent study by Lee and Smith (1993) sheds some light on this question. Working with the data base constructed by the National Educational Longitudinal Study (NELS) of 1988 (Ingels, Abraham, Spencer, & Frankel, 1989), Lee and Smith used a sample of 8,845 eighth graders in 377 public, Catholic, and independent schools to examine the effects of school restructuring (less departmentalization, more heterogeneous grouping, more team teaching, and a composite restructuring index) on students' achievement, engagement with academic work, and the distribution of these outcomes across social classes. Lee and Smith (1993) concluded:

> In sum, our results lend empirical support to the movement to restructure the schools attended by early adolescents. Changes that make schools less like comprehensive high schools and more like "small societies" are in order. Students who attend schools that are less bureaucratically structured demonstrate somewhat higher achievement and more engagement, and the distribution of these outcomes is somewhat more equitable in such schools. (p. 182)

Curricular and Instructional Changes Complement the Organizational Changes

The need to prepare students to acquire the skills that are associated with success in these new types of organizations drives the renewed interest in using various types of cooperative

groups to organize instruction in middle schools. Long associated with instruction for students designated as gifted (Kaplan, 1986; Maker, 1982; Stanley, 1980, 1981; Van Tassel-Baska, 1989), cooperative groups are now regarded as essential for the education of all students. The use of cooperative groups, of which there are many types that can be used to carry out a wide variety of instructional objectives (Erb, 1992; Johnston, Johnson, Holubec, & Roy, 1984; Sharan, 1980; Slavin, 1982), is required by an educational institution preparing students who must acquire the skills identified by the U.S. Department of Labor (1991).

Another curricular practice that has long been associated with the education of the gifted (Kaplan, 1986; Maker, 1982; Reis & Renzulli, 1985; Renzulli, 1977; Van Tassel-Baska, 1989) and now is being advocated for all learners is that of integrated curricular studies culminating in student-produced, real-world projects. The middle school literature is full of examples of curricular approaches that integrate instruction around student inquiry into complex real world problems (Arnold, 1990, 1991; Beane, 1993; Erb, 1991; Erb and Doda, 1989; Lounsbury, 1992; Stevenson, 1991, 1992; Stevenson & Carr, 1993). The culmination of these units of inquiry occur as students, individually or in cooperative groups, create their own solutions to academic problems. The use of interdisciplinary units to organize instruction for middle school students accomplishes so much that is appropriate for the students who inhabit middle school team areas (the concept of learning space that has supplanted the "classrooms" of factory-model schools). Not only are all students exposed to the same basic or core curriculum, avoiding the problems endemic in the pull-out programs characteristic of bureaucratic junior and senior high school, but within that basic core, students can take more control over their own learning as they become responsible for creating their own products and performances that demonstrate how they would apply their new learning to novel situations. All learners, no matter upon what dimensions they differ, can be assisted on the interdisciplinary team to create unique demonstrations of learning.

The use of interdisciplinary curriculum that culminates in student-produced, real-world products lends itself perfectly to current attempts to move beyond standardized tests to authentic assessment of student performance. Tests, that have been used so extensively in factory-model schools in this century, are artificial activities that tend to disrupt student learning. This situation has become even more acute in recent years as schools have employed more and more tests in an effort to satisfy their critics. However, we have reached the situation where some students spend more time in test preparation, test taking, and test review than they spend engaged in activities designed to promote their learning in the first place (Lounsbury & Clark, 1990). In some districts test scores have supplanted student performance as a new end of education (Erb, 1988). Middle school curriculum, on the other hand, is focused on student outcomes and is measured by assessing how well students perform and/or produce real products. Such approaches promote student autonomy and encourage students to go beyond basic requirements to pursue topics to the extent that they desire.

Friedman & Erb (1994) defend the proposition that middle grade schools can avoid the problematic situations presented by bureaucratic schools and promote individual talent development if certain principles are followed in designing and carrying out the curriculum. First, teachers throughout the program must respect students' learning cycles. Second, three basic student outcomes must govern instruction across the curriculum. Third, the program structure (as discussed in the section "Middle Schools Represent a Break with the Past") must be varied enough to allow for multiple talents to be developed.

Some sixty years ago Whitehead (1929/1963) suggested that learning does not occur simply as a function of time. According to him, learning is a three-stage process that requires a tension between two opposing forces: freedom and discipline. Whitehead called the first stage of learning "romance." At this stage a learner becomes aware that there is something to learn out there that might be worth knowing more about. After engaging in one or more romance activities, learners become dissatisfied with their current lack of knowledge. They are then ready for the serious learning stage that Whitehead calls "precision." It is during this stage that learners acquire the information, the skills, the concepts, the conventions, or the grammars associated with knowing the topic being studied. Learning can only be

completed when learners can demonstrate their newly acquired knowledge in new situations. This stage of the learning cycle Whitehead called "generalization." For until learners can use their knowledge in appropriate settings, they are not really masters of the topic or skill they have been studying. In discussing talent development, Renzulli (1988) and Csikszentmihalyi, Rathunde, and Whalen (1993) espouse the use of Whitehead's concept of the cycle of learning.

Moving beyond the planning that takes place in individual classrooms or on interdisciplinary teams, the total curricular structure of the middle school should provide for three types of student outcomes: basic skills and knowledge, exploration of new possibilities, and personal growth. These outcomes should be sought across the entire curriculum of a middle school which consists of at least four parts: a core, exploratory/electives, activities, and advisor base (see Figure 1). By compacting the curriculum unit by unit, middle school teachers can provide opportunities for those students who have mastered the basics, or who can master them with more than the average alacrity, to proceed rapidly to the generalization stage where they can devote much energy to the creation of authentic outcomes and "real world" products without having to resort to the practice of labeling students and tracking them into rigid groups. With flexible unit-by-unit planning, one avenue is made available for addressing the needs of youngsters who demonstrate talent in that content area.

A complete middle school curriculum provides many opportunities to meet the learning needs of diverse learners. There are ways in which talent can be developed without setting up *a priori* rigid instructional groups that are usually based on incomplete and inaccurate screening devices. Since all students are exposed to the same core curriculum, no gaps can creep into the backgrounds of students who have in the past been pulled out of core classes to engage in "gifted" activities. While engaged in generalization activities or in special clubs and mini-courses, students can be exposed to community resources and mentors who can provide specialized expertise that may be beyond the scope of the local faculty. Except for a few true geniuses whose needs exceed the resources of the local middle school, the needs of a diverse set of talented youngsters can be addressed if educators will follow three guidelines: plan for the complete learning cycle, provide for three types of student outcomes across all components of the curriculum, and offer a varied menu of curricular options for students to choose from. Our energies will then be focused on developing human potential as opposed to dissipating our energy trying to figure out who is talented and who is not so we can sort children into rigid categories that all too often have the unfortunate consequence of limiting their potential.

A Word of Caution and Hope for the Future

Because middle schools do reflect a fundamental—rather than an incidental—change, creating fully functioning middle schools is a major task. Often those who adopt the superficial aspects of middle schools (e.g., the 6–8 grade level organization, or simply moving ninth graders to the high school leaving seventh and eighth grade behind in a "middle school") do not understand the implications of the use of the term "middle school." Therefore, there are a number of "middle schools" in existence that do not exemplify the middle school concept at all. They are, in fact, bureaucratic junior highs with a fashionable, new name. Of the schools whose administrators claim the middle school status, the most optimistic estimate is that only 57% of these so-called middle schools practice interdisciplinary teaming in any form (Valentine, 1992). Clearly, more than forty percent of those schools that are called middle schools do not fit even the most basic of organizational requirements to legitimately lay claim to the name middle school. The consumer must be wary. Just as the words "light," "low-fat," and "no sugar added" can be misleading on a nutrition label, the word "middle school" can be misleading on a school building. One must inquire within about how teachers are organized and the curriculum delivered before one can be sure that a middle school really exists.

A true middle school provides the organizational structure that can allow, for the first time in this century, the possibility that the curriculum can be personalized for the learning needs of diverse learners. No longer were schools to be dependent on using tests and other screening devices to sort students in advance of

instruction into special classes created to address perceived student differences. The problem-oriented interdisciplinary team can allow high ability, highly motivated, independent learners the opportunities to go beyond the basic curriculum using flexible grouping practices without the necessity of creating *a priori*, rigid learning groups based on only one or two dimensions that are relevant to academic performance. It is now possible to address individual differences without dependence on the questionable screening procedures that were required in the large, bureaucratic junior and senior high schools (for elaboration on this issue see Erb, 1992).

We have in the adhocratic middle school an organization with tremendous potential to provide personalized instruction for the benefit of learners that differ on so many dimensions relevant to learning. We have conceptualized an organizational structure that is superior to the bureaucratic structures that required specialization *ad infinitum* in a vain attempt to meet individual needs of learners. However, middle school organizations will not function effectively without all the necessary expertise being brought to bear to plan and carry out instructional programs for specific learners. Interdisciplinary teams need the perspectives and the skills often possessed by teachers of the gifted. Instead of laboring in formal specialized classes that have been formed with the aid of traditional screening devices, teachers of the gifted need to join with their colleagues who have other types of skills to work together to design learning activities that will allow all students (not just the screened ones) to come closer to achieving their academic capabilities. It remains a great unfinished task for all educators whose responsibility is the education of young adolescents to understand the potential in the middle school concept and work to perfect its implementation. The growth of our young people and the future of our society demand nothing less.

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Middle Schools and Their Impact on Talent Development

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With the emergence of the middle school movement in the 1960's, the philosophy guiding the education of young adolescent students changed dramatically (Eichhorn, 1966; Popper, 1967). Youngsters from ages 10-15 were recognized as needing something different than a "junior" form of high school or an extension of elementary school (Blair & Burton, 1951; Loomis, 1958). The transition from child to young adult is a major turning point and brings with it adjustment needs unlike others previously faced (Carnegie Council on Adolescent Development, 1989).

During this period of human development, the ranges of "normal" growth (physically, socially, emotionally, and cognitively) are wider than at any other time in the developmental process. The acknowledged purpose of the middle school was to create an educational environment where young adolescent youngsters could explore their emerging adulthood while being supported and guided through the ups and downs they would inevitably experience (Alexander, Williams, Compton, Hines, & Prescott, 1968; Lounsbury & Vars, 1978; National Association of Secondary School Principals, 1985).

The middle school movement has transformed the organizational patterns of our schools, and has had a major impact on the education of young adolescents. The effect of this transformation on the education of gifted students has been a source of debate within the educational community (Allan, 1991; Epstein & Mac Iver, 1990; George, 1988; Oakes, 1985; Rakow, 1989; Sicola, 1990, Tomlinson, 1992; Xenos-Whiston & Leroux, 1992). This manuscript reports the results of two related studies undertaken by the Gifted Education Policy Studies Program at the Frank Porter Graham Child Development Center to explore how the middle school movement has affected gifted students (Coleman & Gallagher, 1992; Coleman, Gallagher, & Howard, 1993).

Education Of Gifted And Talented Middle Level Students

There seems to be a strong congruence between the goals of the middle school movement and accepted goals for the education of gifted students (Coleman, Gallagher, & Howard, 1993). Ten goals outlined by Alexander and George (1981) for the middle school are shared wholeheartedly as common goals for gifted education (Figure 1).

But in spite of this clear overlap of goals, little collaboration has existed between the two fields. In some instances, professionals in the two fields have even appeared to work at cross purposes (Sicola, 1990; Tomlinson, 1992). In order to explore this division between middle school and gifted education, two studies were designed. The first study compared the attitudes of middle school and gifted educators about the appropriate education for gifted middle level students (Coleman & Gallagher, 1992). The second study looked at current best practices in meeting the needs of gifted students within the middle school framework (Coleman, Gallagher, & Howard, 1993).

Attitudes of Professionals: Gifted Students in Middle Schools

A survey was designed based upon statements of need that were gathered from experts in both middle school and gifted education. The purpose of the survey was to identify the attitudes of educators regarding the education of gifted middle grades learners.

Middle School/Gifted Survey

Six areas pertinent to gifted education were addressed in the survey: grouping practices, student identification issues, curriculum modifications, teacher preparation, program evaluations, and the social and emotional needs of gifted youngsters. After teachers were asked to rate their level of agreement with 23 items, they were asked to rank the six areas in order of their top three concerns. A third section of the survey invited them to write additional comments.

Sample for Survey. One hundred respondents were randomly selected from the mailing lists of each of four professional organizations—the National Middle School Association, the Association for Supervision and Curriculum Development, The Association for the Gifted, and the National Association for Gifted Children. The return rate from this sample of 400 surveyed was 84%. We saw this high return rate as an indication of intense interest in the topic under investigation. Thirty of the returned surveys could not be used because of multiple selections for single items or unclear selections. Thus the analysis was completed for 77% of the recipients, with 142 respondents from the middle schools and 164 respondents from gifted education.

Results for the Middle School Survey. The survey responses were analyzed using effect size (obtained by dividing the difference between groups by the standard deviation). This measure gives an indication of the degree of difference between groups. An effect size of .80 is considered a major difference between groups (Cohen, 1988). As Figure 2 shows, there were some areas of major difference between these two groups of educators. Many of the differences, however, were expressed as a difference in intensity of attitudes on a particular group of items, rather than as direct disagreement on the item itself.

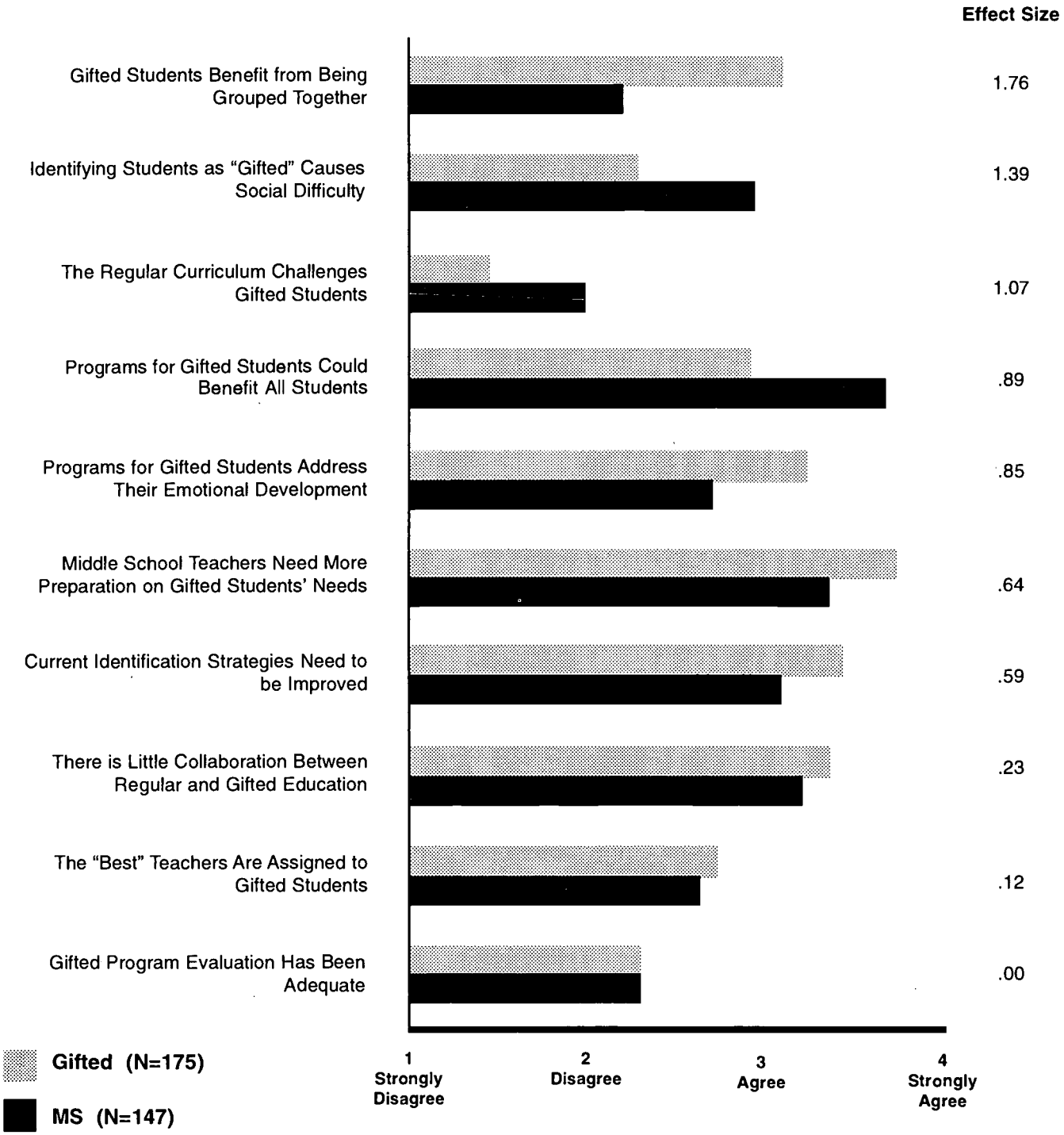
The only item clusters that truly polarized the two groups were those relating to ability grouping and the social and emotional difficulties experienced as a result of the label "gifted." Educators of gifted students strongly agree that gifted students benefit from being grouped together, for at least part of the day, while middle school respondents disagreed. This single area resulted in the largest effect size difference and seemed to mirror the debates within the educational field regarding the usefulness of grouping students for instructional purposes (Kulik & Kulik, 1991; Oakes, 1992; Slavin, 1990). The term "gifted," when applied to the student, was seen as having

Figure 1. Shared Goals: Middle Schools and Gifted Education

1. To meet varied affective needs of students.
2. To allow each student to work at his/her own pace and level of learning.
3. To use team teaching and team planning.
4. To use exploratory curriculum in the classroom.
5. To develop and use interdisciplinary curriculum.
6. To use outcome based assessment or mastery learning.
7. To emphasize thinking strategies and decision making within the curriculum.
8. To allow teacher/student relationships to be more intimate, and to provide students with 'families' within school.
9. To have teachers serve as facilitators of learning rather than disseminators of knowledge.
10. To extend learning beyond the textbook.

Taken from: Alexander, W. & George, P. (1981). *The exemplary middle school.* New York: Holt, Rinehart, & Winston.

Figure 2. Comparisons of Means for Gifted and Middle School Respondents on Survey Clusters



a more negative effect on students by the middle school respondents than it was by respondents from gifted education.

Both groups were in general agreement on the other item clusters of the survey, although the intensity of their feelings differed. Points of agreement included statements that: "the regular curriculum does not challenge gifted students," "some aspects of the program for gifted students could benefit all students," "most middle school teachers need more preparation on meeting the needs of gifted learners," "identification strategies for gifted students need to be improved," and that "little collaboration currently takes place between the two areas [regular middle school teachers and gifted education teachers]."

One complaint frequently heard from the "untracking" movement (Oakes, 1985) is that the best teachers are assigned to teach gifted students. Yet results from that item cluster on the survey showed neither clear agreement nor disagreement, and the written comments indicated that respondents did not feel that this was an area of concern. Good (and bad) teachers, respondents said, could be found in all settings. Both groups felt that program evaluation for gifted education has been inadequate.

Best Practices in Middle School/Gifted Education

The second study looked at best practices of educators in blending the middle school and gifted programs to meet the needs of gifted, middle level learners (Coleman, Gallagher, & Howard, 1993). The purpose of this study was to identity ways that gifted students were being served within middle schools and to examine those factors important in meeting the needs of such students. Nominations of schools working to meet the needs of gifted learners within the framework of "authentic" middle schools were solicited from leaders in the middle school community. Guidelines were given for potential nominees. These included that:

1. Attention to the needs of gifted students be encompassed within the school's philosophy, goals, and objectives;
2. Specific options for curriculum "pacing" that differentiated for gifted learners, including some forms of curriculum compacting, continuous progress, acceleration, and/or enrichment, be available;
3. The curriculum content offer differentiation for gifted students, including higher-order thinking, interest-centered learning, interdisciplinary curriculum, seminars, mentors, and/or learning beyond the textbook;
4. Staff development designed to better prepare teachers to meet the needs of gifted students be offered; and
5. Some form of program evaluation, designed to show how successfully the needs of gifted students were being met, be completed.

We received 24 nominations from across the country. Although we realized that we certainly did not have a complete list, we felt we had an ample pool of candidates. With the assistance of experts from the middle school movement and gifted education, 5 of the 24 schools were selected to participate in the study. The selected schools represented urban, suburban, and rural locations and used a variety of plans for serving gifted students.

Methods for Case Studies

Each of the five schools was visited by a team of two or three program staff members for two days. Information about the school and its operation was collected through interviews with key people; focus group discussions with teachers, parents, and students; observations; and document reviews. After the visits, a profile was developed as a portrait of each school. These profiles were sent back to the administrators at the school site for verification, and minor corrections were then made based on their feedback. An abbreviated form of the individual profiles is included here; a full description is available from the authors.

Middle School Site Visits

Brewster Middle School. Brewster is the middle school for Camp Lejeune Dependents' Schools, located on the Camp Lejeune Marine Base in Jacksonville, NC. The student body is quite diverse, reflecting the population on base, with 20% African American students. The educational backgrounds of the families served by Brewster vary greatly, but all share an affiliation with the U.S. Marines or the U.S. Navy.

Brewster was built in the 1960s; it originally served as a junior high school, prior to its 1984 transition to a middle school. The school was organized by teams, four at the sixth grade, three at the seventh grade, and two at the eighth grade levels. These teams of approximately 65 to 110 students function as the major defining structure for both the teachers and the students. Each team had a name (e.g., Bears, Tigers), a mascot, and a clear identity that distinguished them from other teams. The teams formed the basis for weekly intramural competitions. The teachers use team planning time to discuss how to meet students' affective needs, to plan interdisciplinary curriculum, to hold parent/teacher conferences, and to handle routine school business. The students were also assigned to advisor/advisee groups within the team, where their individual needs could be addressed.

The program for gifted students at Brewster was part of a school system commitment to the recognition and development of individual excellence. This climate seemed to be supported by the philosophy of the Marine Corps and permeated the entire school system's approach to education. The program for gifted students was embedded in the team structure of the school. One team at each grade level housed the students identified as gifted. Approximately 1/3 of each of these teams was made up of gifted students, and the remaining 2/3 ranged in academic abilities and needs.

Gifted students were grouped for language arts and math instruction. The focus in these classes was on the addition of complexity and depth to the core curriculum. The gifted math classes moved at a more rapid pace and opportunities for individualization in math were available for extremely able students. All teams emphasized interdisciplinary planning and teaching, and this added complexity to the content.

One aspect of the curriculum that was unusual was the use of technology. Every gifted student in the school completed a "project" with a cross-grade-level group at some point during the school year. These projects were related to areas of student interest, but were often tied to an interdisciplinary unit under study.

Although the teams were the essential building blocks of the school, Brewster was much more than the sum of these parts. The careful articulation of the curriculum, school goals, professional development, and shared decision-making created an environment that not only supported excellence, but required it. This, combined with the obvious enthusiasm for the teaching/learning process meant that not only were expectations high, but that reaching those expectations was fun!

Wilson Middle School. Wilson Middle School is located in downtown Tulsa in an older neighborhood. The school is a "partner" magnet and so draws students from several areas. Several Tulsa schools are full magnets, with most of their students attending because of the magnet program. Wilson, however, accepts only 50 magnet students to participate in a foreign language program. The student body (approximately 675) is somewhat diverse, with 6.5% American Indian, 4% Hispanic, 2% African American, and 2.5% Asian. The students also represent a wide economic span, ranging from affluence to poverty.

The school building itself dated back to the 1930s and was well maintained but also well used. There was no particular classroom for gifted students, so they met in the computer lab, the art room, or the library, depending on the time and the focus of the lesson.

Many of the teachers we met at Wilson had participated in planning Wilson's transition from a junior high to a middle school. The strongest marker of this change was the emphasis on the affective needs of students. The presence of "impact" teachers, with special training in assisting students with social and emotional needs, coupled with the special evening and weekend counseling events, all come into being as part of the middle school transition. Two counselors participated in the overall program. Wilson teachers met frequently in grade-level teams to plan for student needs and to design curriculum. The use of community resources through the mentorship program and the "adopt a school" program also played important roles in the school's program.

The program at Wilson for gifted students was developed by a single teacher. Although the program was similar in structure to a "pull-out" model, its particular focus was unique. In order to minimize the interruption to the students' regular class schedules, the teacher designed a system that rotated the students' gifted education period so that they would not miss the same academic class each week. The

schedule was done by computer on a daily basis. The homeroom teacher gave the gifted students their "pull-out" time and meeting room for that day. In addition to their formally scheduled time, the students could "drop-in" to work independently any time they had completed their regular class work.

The classroom teachers felt the GT (gifted and talented) experiences were very important for the students, and that the GT teacher was "invaluable" to them—and to the school—because of her knowledge and experience. The school's philosophy was that no talent should be idle, and the facility worked to instill a "motivation for excellence" in all students. Of the 675 students at Wilson, 72 were formally identified as GT and an additional 20 or more were included for special services because of their demonstrated talent and/or performance.

The core classes for all students were designed to meet individual needs whenever possible and to encourage students to work at a challenging level and pace. As a language magnet school, the students were able to select from French, German, Spanish, and Japanese instruction. The math program offered opportunities for rapid advancement at an individual rate, and some students had progressed through Calculus by the eighth grade. The music and arts programs also supported talent development. The school had also developed an outstanding mentorship and volunteer program, and this contributed greatly to talent development.

During the time that the students worked with the gifted education specialists, the focus was twofold: (a) individualized, computer-assisted learning plans, and (b) team academic competitions. One student, for example, whose talent and passion was music, had an individualized plan created to allow her to study music theory. She worked with the music instructor, the GT teacher, and with a special software package on music theory and analysis. Another aspect of the GT program was the involvement of students in academic competitions. The students selected the areas and the teams that they wished to pursue, and not all students participated in competitions.

The program at Wilson Middle School was strong, and the emphasis on excellence permeated the whole school environment. The program had developed during a time of severe budget cutbacks, but was still able to pull in substantial support from the outside community with a mentorship program and an "adopt-a-school" business partner. The parents were also seen as active partners in the educational process, and many were regularly involved at the school. The teachers and the principal took a firm approach to student outcomes, and set high expectations for all of the students. The commitment to achieve provided a foundation for the GT program that was, in turn, assisted by the core curriculum teachers.

Western Middle School. Western is located in a rural county of North Carolina. The student population reflects that of the community (approximately 15% African American); students at Western come from families with economic levels ranging from poverty to upper-middle class. The educational level of parents was somewhat higher than might be expected for a rural school, due to the presence of a small college in the community. At the time of our visit, approximately 15% of the 650 students at Western had been identified as academically gifted.

The school was built in 1978 and was designed to be a middle school. The facilities were well maintained, and there seemed to be a great deal of pride placed on the school and what it represented. This feeling of pride permeated the building with the pervading notion being, "of course we're great ... we're from Western!"

Western was one of the first schools to make the transition to the middle school model in the 1970s. The building was designed to house grade-level "families" of students. The school was organized around grade-level teams for teacher planning and had homeroom intramural teams, which enhanced the students' sense of belonging. The advisor-advisee program was organized around small "Chat" classes. Each "Chat" class was made up of a group of 13 or 14 students who met daily with a faculty or staff member. Teachers had developed a specific curriculum for these classes that focused on the development of self-esteem. The teachers were accustomed to developing interdisciplinary curricula and to working with colleagues on decisions ranging from school events to the hiring of new faculty.

The gifted program at Western was not separated from the overall school program. The needs of gifted students were integrated

throughout the day in core subjects. The students were identified for advanced math, language arts, or both. Identified students were placed in the advanced language arts/social studies block and/or the advanced math class. The nature of this placement also meant that these students took their science classes together, as well. Their "Chat" (advisee-advisor) classes and electives were taken in mixed-ability classes. The use of interdisciplinary units of study was primarily organized around events that took place at each grade level. The affective needs of students were considered a top priority, and several teachers indicated that this was part of their focus every day.

The advisor-advisee program was fairly new, and was organized around "Chat" classes. Chat got mixed reviews from both the teachers and the students. The goals of Chat, however, seemed to have been reached more informally through the natural bonding of students and teachers.

The AG program focused on placement of students into instructional classes for advanced language arts/social studies blocks and/or advanced math classes. The language arts/social studies block also functioned as the homeroom and intramural teams. Within the language arts/social studies and the math classes, the teachers focused on accelerating the pace of the material presented, exploring the content in more depth, and on research skills such as gathering and refining information from a variety of sources.

Western became a middle school through careful planning and extensive staff development. The school maintained its commitment to gifted children as part of a commitment to all students. Most of the staff had been at Western a long time, and brought expertise and experience to the school. A sense of enthusiasm permeated Western. The students believed that they attended the best school, the principal believed that he had the best staff, the teachers were committed to making it work, and it does.

Burbank Middle School. Burbank is located in downtown Detroit in a neighborhood that could be described as "working class." The student body of 750 is representative of the community demographics, with strong cultural diversity. Caucasian students are in the minority, with over 75% of the student body coming from Hispanic, African American, and Asian families. The school was originally built as an elementary school in the 1930s and was undergoing major renovations at the time of our visit.

In spite of the major construction going on in parts of the school, the building was clean and orderly. The students seemed to know what was expected of them and to move through the halls in a purposeful, cheerful manner. The overall impression of the physical plant was that, although the "basic" amenities associated with a middle school were under construction, the teachers and students were not "marking time" waiting for learning to take place.

Burbank was in the process of moving toward a middle school model at the time of our visit. Teachers had participated in staff development on the middle school philosophy and were beginning to engage in team planning. The faculty responsible for the gifted program were acting as leaders in the transition to the middle school and several were team leaders for their grade groups. Burbank's focus on high expectations for students and careful attention to supporting students emotionally were indicators of the middle school transition. The sixth grade team had several strategies to ensure a successful transition for incoming students and safeguards were in place for students experiencing difficulty adjusting to the new environment.

The A+ program was developed by a team of teachers from Burbank who were interested in creating an academic program to challenge their brightest students. This team was led by the principal, who received guidance from the district coordinator of gifted education. This initial team also provided the instruction to the A+ students and acted as a catalyst to help other staff members create challenging academic environments.

Students were identified for the A+ program at the end of the sixth grade. Although sixth graders were not identified for the gifted program, they were placed in instructional-level classes through a careful evaluation of cognitive, social, and emotional profiles. The instructional grouping and intense teaching seemed to be paying off in student achievement. The entering sixth-grade class was placed into two low, two middle, and two high-level groups (one of which was the A+ class). This steady increase in achievement was attributed to the school goal of meeting the child where she/he was academically and carrying her/him forward from that point.

At the end of the sixth grade, nominations were taken from sixth grade teachers, parents, the principal, peers, and from students themselves. A screening of all student files to identify students with a grade point average of 3.0 or higher was also done, to ensure that no students were missed. A placement committee (composed of the A+ teachers and the principal) reviewed each student's grades, citizenship score, attendance record, achievement scores, a teacher questionnaire, and a parent questionnaire, in order to identify the "top" 35 students for the A+ class. A waiting list of alternate students was also selected. The teachers indicated that this process was difficult, but they felt it was fair. Students perceived the program as worth working for—in part because of the strict requirements for inclusion.

The program was largely self-contained, with students in A+ for their language arts block and their math classes. Foreign language and social studies classes combined A+ students with high-achieving students not formally identified. A+ students could select electives, including band, woodshop, and chorus, and these elective classes were not leveled by ability. In addition to the electives, A+ students had physical education and health classes within the regular education program.

In A+ classes, the pace of learning was faster, the level of abstraction was increased, and the content was more directed by student choice. The language arts block focused on literature and writing through the use of units built around themes. Basal texts were not used. The math curriculum was fast paced and interactive. Enrichment activities were presented, and the students were involved with academic competitions. Calculators were used for some math activities. Computers were not available to either teachers or students (the school had only five computers). A+ science classes used the Detroit Area Pre-College Engineering Program (DAPCEP) curriculum, which engaged students in hands-on problem solving and experimentation.

Burbank middle school had developed a program to provide challenges to top students. The commitment of the principal and faculty assured that the students received appropriate educational experiences, despite severely restricted physical and material resources. The students felt confident they could meet the high academic expectations of the faculty with the strong support of the faculty. Although there has been limited parental involvement in the school, the parents we spoke with expressed pride in the children's abilities and strongly valued education. The A+ program also had a ripple effect on other aspects of the school and seemed to be raising the expectations of all students.

Meads Mill Middle School. Meads Mill is located in Northville, Michigan—an affluent suburb of Detroit. The demographics of the school reflected the community, with less than 2% of the students coming from culturally diverse families. The majority of the parents had college educations, and their socioeconomic status ranged from upper-middle to upper-class. The mean IQ for the student population was 118—indicating that, in general, these students fell within the upper ranges of ability.

The school was built as a model middle school during the early 1970s and was originally designed with "pods" where the classrooms were not separated by walls. Over the years, the classroom areas were closed in to allow for additional noise control and class structure. The building housed a large library (equipped with microfiche and computer data bases for references), three computer labs (one for computer classes and two that were used on a sign-up basis), science labs for each grade level (with live animal centers, greenhouses, and equipment for experiments), and a music room with the latest technology in sound systems.

The faculty was organized around teams for planning. They focused on both student adjustment needs and the development of interdisciplinary curriculum. A strong intramural program backed up the competitive athletic teams to allow more students to participate. The focus on student adjustment and social/emotional development was addressed primarily through the regular class activities. Many of the Meads Mill sixth grade gifted students had been identified in the third grade for the first self-contained magnet classes.

The gifted program at the middle school level used a combination of concept classes in math, advanced language arts, cluster grouping of gifted students within other classes, and academic enrichment classes. The gifted students were placed on the same team with teachers who had volunteered to take additional staff development on curriculum differ-

entiation. The program was integrated into the school curriculum and the academic enrichment classes were part of the total school program. All students had one period per day devoted to enrichment. Students selected classes every nine weeks from a variety of topics. Gifted students had the option of either taking a "regular" enrichment class or signing up for their special enrichment classes each nine-week period.

The teachers used Bloom's Taxonomy as a structure for making the curriculum more complex. The Taxonomy was also taught to the students to encourage them to ask higher-level questions. Students in the math and language arts classes reported that they did more projects, writing, and seminars, and that they spent more time on topics that interested them. Teachers indicated that time was not as much of an issue in these classes, because the students could master material more quickly.

Overall, several strategies were in place to individualize the curriculum for all students, which meant that students were allowed to move through the curriculum at a rate appropriate to their needs and to study topics that interested them.

Meads Mill school had developed a program for the gifted that was well-integrated into the overall school agenda. The students were placed on the same team with teachers who had additional staff development to learn strategies for differentiating the curriculum. The combination of concept math classes, advanced language arts, academic enrichment, and strategies for individualization within the science and social studies classes provided a wonderfully balanced school experience. The use of the extensive resources available further enhanced the opportunities of the students, gifted and otherwise.

Cross-site Analysis for Site Visits

A cross-site analysis was done on factors identified as potentially important for successfully meeting the needs of gifted middle school students. The factors used were: leadership, commitment to gifted students, staff development, autonomy, availability of resources, attitudes within the school, curriculum differentiation, affective program, teaming, written plans, and evaluation strategies. Figure 3 shows the ratings of each factor for each school. The ratings were based on the observations, focus group discussions, interviews, and documents from each school system. The final judgments were reached in consensus discussions of three Gifted Education Policy Studies Program staff members. Factors were rated as "critical," "important," "moderately important," or "insignificant" based on the influence they had on the success of the program at each site.

Several factors were rated as critical or very important to successfully serving gifted students at all five middle schools. These factors were: leadership on gifted education from the school site administration; autonomy of both the school's administration and the teaching staff; the availability of a "resident expert" who was knowledgeable about gifted students and was well respected by her/his colleagues; and attitudes of enthusiasm, trust, and commitment to the school.

The teachers at each site used a variety of curriculum differentiation strategies to meet the needs of gifted students, with enrichment and grouping by ability/performance in use at all five schools. The varying use of the other factors showed that, after a few critical factors are in place, a wide range of alternatives can be followed. Figure 4 describes the various service delivery plans for gifted education within the five schools.

Each school demonstrated the ability of middle schools to meet the needs of gifted learners, and the cross-site analysis shows that there were several ways this was accomplished. In every case, however, the educational needs of gifted students was not addressed merely as an afterthought. Rather, when school personnel planned for the education of all their students, they intentionally differentiated the school program for their most capable learners. One belief shared by personnel in all of the schools we visited was that services offered for gifted students should also be provided to others who could benefit from such differentiation.

Discussion

The results of the two studies indicate that it was more than just "possible" for educators from middle schools and gifted education to work together profitably—in some schools it is a current reality. We see many areas of shared concern for both groups. Although little collabora-

Figure 3. Key Factors Influencing the Success of Middle School Programs for Gifted Students*

	A Critical	B Very Important	C Somewhat Important	D Little or No Importance
1. Leadership				
Central Office Administration	**		**	*
School Site Administration+	***	**		
Teachers	**	**	*	
Parents/Advocates			****	*
2. Commitment to Gifted Students				
School Site	**	**	*	
School System		*	***	
3. Staff Development				
Middle school Model	***		**	
Gifted Learners	*	***	*	
4. Autonomy				
Administration (School Site)+	****	*		
Teachers+x	***	**		
5. Availability of Resources				
Materials/Physical	**	*	*	*
Expertise/Human+	****	*		
Time	***	*	*	
Community	**	*		**
6. Attitude Within the School				
Enthusiasm (Students)+	***	**		
Enthusiasm (Teachers)+	***	**		
Trust+	****	*		
Commitment to School+	**	***		
7. Curriculum Differentiation				
Instructional Grouping (Ability/Performance)+	****	*		
Mentor Programs	*	*		***
Interdisciplinary Units	***		*	*
Flexible Pacing	*	***		
Enrichment+	****	*		
Independent Studies	*	*	**	*
Advanced Content (Sophistication)		****	*	
Thinking Stategies	**	**	*	
8. Affective Program				
Counseling	*	**	**	
Advisor/Advisee	*	**		**
Group Work	*	**		**
Families/Teams	*		**	**
9. Teaming: Teachers	***	*	*	
10. Written Plan for Gifted Students	**	**		*
11. Evaluation	**	*	*	*

Figure 4. Organization of Service Delivery Systems for Gifted Students

"Pull out" Variations

- In one school, students were 'pulled out' from their classes on a rotating basis to work with their gifted and talented (GT) teacher. The pull out schedule was organized, with the assistance of a computer, to ensure that students did not miss the same class each week.
- In one school, an enrichment class was scheduled within the overall school day for all students. Gifted students could elect to take either general enrichment units or the gifted enrichment activities offered each nine week period.

Separate Classes

- In all five schools, language arts and math were taught in classes grouped by ability and/or performance.
- Two of the schools used blocks for language arts and social studies; thus, social studies was also taught in classes that were ability grouped.
- Two schools taught all academic subjects for the students identified as gifted in separate classes. In one of the schools, this was done by intent; in the other it was a result of scheduling needs.

Cluster Grouping

- Three schools placed all the students identified as gifted on the same team and teachers of this team were required to have additional expertise in meeting the needs of these students.
- In the other two schools, the team was primarily designed for teacher planning and gifted students were clustered across teams—coming together for activities related to the gifted program.

tion between middle school supporters and educators of gifted students has taken place to date, areas of perceived need include: curriculum changes to offer more challenge for highly able learners; teacher preparation for educating gifted students; extending some of the services currently reserved for gifted students to all students (when appropriate); and rethinking identification practices for gifted students to better select students based on educational needs. The issue of instructional grouping by ability/performance will require further discussion to reach a resolution, and this issue must be resolved to ensure that educational practices do not deny any student an excellent education at an appropriate level and pace. A recent resolution passed by the membership of the National Middle School Association at the Portland Conference on the needs of gifted students, and the position paper on middle schools from the National Association for Gifted Children, are indications of a growing sense of collaboration between the fields:

National Middle School Association Resolution (Resolution 93-5)

Whereas, the development of gifted students is accelerated in one or more areas in comparison to their peers, and Whereas, research identifies that these students want to be with their age peers and not feel alone in the learning process, and Whereas, self concept and self-esteem are directly related to all areas of school success.

Therefore, be it resolved that the National Middle School Association provide information about these issues and other professional development experiences to help middle level educators respond more effectively *to the needs of these unique students.*

NAGC Policy Statement for Middle Schools

The National Association for Gifted Children (NAGC) applauds and supports the fundamen-

tal Principles of the middle school movement. We endorse, in particular:

The emphasis on individual student needs;
The teaching of thinking strategies and decision making;
The teacher as facilitator, rather than knowledge giver,
The use of interdisciplinary curricula;
The encouragement of each student working at his own pace;
The students belong to a "family" or home group;
The extension of learning beyond the textbooks.

In addition, the NAGC believes that the flexible use of grouping for student instruction and accelerated programs in content fields to match students' advanced abilities and knowledge can meet the needs of gifted students while maintaining the important social goals of the middle school movement.

The results of the current studies have revealed both the gap in attitudes between the two professional groups and some examples of fruitful collaboration. These collaborations give promise for more effective interaction between educators of gifted students and educators involved in the middle school reform movement.

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Gifted Learners and the Middle School: Problem or Promise?

Carol Ann Tomlinson

Historically, tension has existed between gifted education and middle school education (Tomlinson, 1992), leaving some advocates of each educational practice suspicious of the other, and leaving middle school students who are advanced in one or more dimensions of learning in a sort of educational no-man's-land. While some legitimate areas of disagreement are likely to persist, there are enough areas of shared belief to bridge the practice between gifted education and middle school education. This digest provides an overview of (1) some areas of agreement between the fields, (2) some areas of tension, and (3) some promising directions that could engage educators in mutual planning of appropriate services for all middle school students, including those we sometimes call "gifted."

Shared Beliefs of Gifted Education and Middle School Education

There are at least three areas of common concern shared by gifted education and middle school education.

First, when it comes to articulated beliefs about what constitutes appropriate instruction for early adolescents, both groups are proponents of instruction that: (1) is theme based, (2) is interdisciplinary, (3) fosters student self-direction and independence, (4) promotes self-understanding, (5) incorporates basic skills, (6) is relevant to the learner and thus based on study of significant problems, (7) is student-centered, (8) promotes student discovery, (9) values group interaction, (10) is built upon student interest, (11) encourages critical and creative exploration of ideas, and (12) promotes student self-evaluation (e.g., Currier, 1986; Kaplan, 1979; Maker & Nielson, 1995; Stevenson, 1992).

Second, few educators of the gifted would argue with the core tenets set forth in *Turning Points* (Carnegie Task Force on the Education of Young Adolescents, 1989) that middle school programs should: (1) create small communities of learning within larger school settings, (2) teach a solid academic core, (3) ensure success for all students, (4) enable educators closest to students to make important decisions about teaching and learning, (5) staff middle schools with teachers trained to work effectively with early adolescents, (6) promote health and fitness, (7) involve families in the education of learners, and (8) connect schools with communities.

Third, both groups of educators share a deep concern for the cognitive and affective welfare of early adolescent learners. Both groups also understand that there is great variability in the academic, social, emotional, and physical development of the early adolescent group. Both also subscribe to the reality that early adolescents are subject to change, including spurts in physical growth, new interests, and intellectual awareness. And both believe that all middle school students should take part in challenging learning experiences.

Gifted Education and Middle School Education: Problems and Promise

The following issues have concerned educators in gifted education and middle level education. But emerging dialogue offers promise and some evident next steps for moving ahead into a more collaborative future (Clews, 1995).

Excellence vs. Equity

Problem:

Gifted education exists to foster development of high-end excellence. It therefore stresses practices that are most likely to promote "expertise" in learners with advanced performance and/or potential. Middle school education, on the other hand, views education through an equity lens, where all students have an equal opportunity to succeed. In a country that has struggled with the competing values of equity and excellence throughout its history (Gardner, 1961), it is not surprising that both groups continue to struggle with mechanisms for balancing the belief that all people should have equal opportunity with the belief that each individual should be assisted in developing his or her maximum capacity. The tension is heightened in the face of scarce resources for education.

Promising Directions:

- Understand the advantages of emphasizing both equity and excellence.
- Plan for both personal excellence and equity of access to advancement for all learners who are at risk, including those who are gifted.
- Emphasize raising the floors and eliminating the ceilings of educational performance.
- Emphasize both personal excellence and "apex" or "high-end" excellence.

Emphasis on Heterogeneity

Problem:

Because middle school educators emphasize the negative impact of homogeneous grouping on at-risk learners, heterogeneity has become a hallmark descriptor of "good" middle schools (Carnegie Task Force on the Education of Young Adolescents, 1989). But educators of the gifted value the benefits of ability grouping for advanced learners. The availability of some forms of homogeneous grouping for these learners has been strongly advocated by proponents of gifted education (Allan, 1991). Educators of the gifted are also concerned about a lack of emphasis on differentiated instruction for academic diversity in heterogeneous classrooms in the literature of middle school, and reject a one-size-fits-all approach to educating students as varied as those who inhabit middle schools.

Promising Directions:

- Abandon practices that permit or encourage one-size-fits-all instruction.
- Replace exclusive services with more inclusive ones.
- Emphasize appropriately differentiated instruction in heterogeneous classrooms.
- Use heterogeneous teams, but group and regroup within a team and across teams for instructional purposes.
- Offer a variety of classes that allow for student choice.
- Emphasize use of gifted/talented resource specialists as part of interdisciplinary teams.

Use of Labels

Problem:

Middle school advocates often reject labeling students as "learning disabled" or "gifted" (George, 1993). Such labeling, they believe, favors some students and stigmatizes others. Advocates of gifted education believe that identifying high potential and performance is necessary if awareness of and planning for talent development is to occur (Coleman & Gallagher, 1995).

Promising Directions:

- Develop ways to identify and address students' needs without overt labeling.
- Work to balance emphasis on student differences and student similarities.
- Use the term "gifted" as part of a phrase that describes students as gifted in mathematics, science, writing, visual arts, music, etc.

Ambiguity About Appropriate Middle School Curricula

Problem:

For much of its 30-year history, middle school education has attended more to issues such as student affect, scheduling, detracking, teaming, and school climate than to what constitutes effective and appropriate curricula in middle school classes (Beane, 1990). Educators of the gifted, who place strong value on challenging opportunities for advanced learners in their

area(s) of strength, have been concerned about middle level education, including a basic skills approach to instruction. On the other hand, middle school educators argue that what has been called "gifted education" (e.g., enrichment, high level thinking, problem-solving) is good education for all learners, and should not be reserved for any single group of middle school students. They believe that energies of educators should be focused on establishing that sort of "good education" in heterogeneous classrooms and that the proliferation of such classrooms would serve all middle school students well.

Promising Directions:

- Disavow theories that present middle school students as incapable of high level thought and complex learning.
- Abandon practices that couch middle school as a place for drill and skill.
- Collaborate in establishing complex, problem-based, student-centered curricula, differentiated for student readiness, interest, and learning style.
- Articulate differences between "good education" and "good gifted education."
- Ensure that services restricted to gifted students are taught at a pace, level of complexity, and level of abstractness that is consistent with their abilities and instructional needs.

Use of Cooperative Learning as an Instructional Strategy

Problem:

Middle school educators promote cooperative learning as a prime means of establishing effective heterogeneous communities of learning (Slavin, 1980; Toepfer, 1992). Educators of the gifted find that overuse of some cooperative learning strategies, particularly those focused on learning of basic information and skills, results in a lack of challenge for advanced learners, inordinate use of these learners as "junior teachers," and inappropriate pressure for these learners to solve instructional problems (Robinson, 1990).

Promising Directions:

- Acknowledge the appropriateness of collaborative learning for early adolescents.
- Emphasize problem-based cooperative strategies rather than skill-focused cooperative strategies.
- Move away from cooperative learning as a "savior" strategy.
- Teach and balance cooperation, independence, and healthy competition.
- Use various grouping patterns in cooperative groups, based on instructional purpose.

Affective Needs of Early Adolescents

Problem:

Middle school educators stress development of school environments in which early adolescents can belong to a nurturing group and have consistent access to adults who know and care about them (George & Shewey, 1994). Most educators of the gifted have concerns that affective experiences of advanced learners, which sometimes take on "a different spin," are overlooked in middle schools where advanced learning is deemphasized and where few teachers are trained to understand advanced learners. For example, peer pressure to conform may be experienced in a somewhat different context by many academically talented females and minority students than by other agemates (Ford, 1994; Kerr, 1985).

Promising Directions:

- Recognize that early adolescents share common affective needs, but experience them in differing ways.
- Plan for both achievement and belonging for advanced learners, with special emphasis on females and culturally diverse learners.

General Tension

Problem:

The result of strongly held and often divergent views about educating early adolescents has led to some tension between the two groups of educators. Leaders of each group have not always attempted to build bridges. Publications, conferences, team meetings, and informal dialogues among educators have only recently begun to break ground in listening and attempting to find solutions.

Promising Directions:

- Acknowledge strengths and contributions of both practices.
- Use constructive language when discussing the issues.
- Communicate, cooperate, and collaborate at every level of educational practice.

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Differentiating Instruction for Advanced Learners in the Mixed-Ability Middle School Classroom

Carol Ann Tomlinson

A particular challenge for middle school teachers is being able to differentiate or adapt instruction to respond to the diverse student needs found in inclusive, mixed-ability classrooms. This digest provides an overview of some key principles for differentiating instruction, with an emphasis on the learning needs of academically advanced learners.

Why Differentiate Instruction?

A single seventh grade heterogeneous language arts class is likely to include students who can read and comprehend as well as most college learners; students who can barely decode words, comprehend meaning, or apply basic information; and students who fall somewhere between these extremes. There are students whose primary interests lie in science, sports, music, or a dozen other fields. There are students who learn best by working alone and those who are most successful working in groups. Further, the learning profiles of young adolescents often change rapidly as they develop. There simply is no single learning template for the general middle school class. If middle school students differ in readiness, interest, and learning profiles, and if a good middle school attempts to meet each student where he or she is and foster continual growth, a one-size-fits-all model of instruction makes little sense. Rather, differentiated instruction seems a better solution for meeting the academic diversity that typifies the middle school years.

What Differentiation is—and Is Not

A differentiated classroom offers a variety of learning options designed to tap into different readiness levels, interests, and learning profiles. In a differentiated class, the teacher uses (1) a variety of ways for students to explore curriculum content, (2) a variety of sense-making activities or processes through which students can come to understand and "own" information and ideas, and (3) a variety of options through which students can demonstrate or exhibit what they have learned.

A class is *not* differentiated when assignments are the same for all learners and the adjustments consist of varying the level of difficulty of questions for certain students, grading some students harder than others, or letting students who finish early play games for enrichment. It is not appropriate to have more advanced learners do extra math problems, extra book reports, or after completing their "regular" work be given extension assignments. Asking students to do more of what they already know is hollow. Asking them to do "the regular work, plus" inevitably seems punitive to them (Tomlinson, 1995a).

Characteristics of a Differentiated Class

Four characteristics shape teaching and learning in an effective differentiated classroom (Tomlinson, 1995a):

1. *Instruction is concept focused and principle driven.* All students have the opportunity to explore and apply the key concepts of the subject being studied. All students come to understand the key principles on which the study is based. Such instruction enables struggling learners to grasp and use powerful ideas and, at the same time, encourages advanced learners to

expand their understanding and application of the key concepts and principles. Such instruction stresses understanding or sense-making rather than retention and regurgitation of fragmented bits of information. Concept-based and principle-driven instruction invites teachers to provide varied learning options. A "coverage-based" curriculum may cause a teacher to feel compelled to see that all students do the same work. In the former, all students have the opportunity to explore meaningful ideas through a variety of avenues and approaches.

2. *On-going assessment of student readiness and growth are built into the curriculum.* Teachers do not assume that all students need a given task or segment of study, but continuously assess student readiness and interest, providing support when students need additional instruction and guidance, and extending student exploration when indications are that a student or group of students is ready to move ahead.

3. *Flexible grouping is consistently used.* In a differentiated class, students work in many patterns. Sometimes they work alone, sometimes in pairs, sometimes in groups. Sometimes tasks are readiness-based, sometimes interest-based, sometimes constructed to match learning style, and sometimes a combination of readiness, interest, and learning style. In a differentiated classroom, whole-group instruction may also be used for introducing new ideas, when planning, and for sharing learning outcomes.

4. *Students are active explorers. Teachers guide the exploration.* Because varied activities often occur simultaneously in a differentiated classroom, the teacher works more as a guide or facilitator of learning than as a dispenser of information. As in a large family, students must learn to be responsible for their own work. Not only does such student-centeredness give students more ownership of their learning, but it also facilitates the important adolescent learning goal of growing independence in thought, planning, and evaluation. Implicit in such instruction is (1) goal-setting shared by teacher and student based on student readiness, interest, and learning profile, and (2) assessment predicated on student growth and goal attainment.

How to Think About Differentiating Instruction

There are many ways to shake up the classroom to create a better fit for more learners—including those who are advanced. In general, *interest-based adjustments* allow students to have a voice in deciding whether they will apply key principles being studied to math-oriented, literature-based, hobby-related, science-oriented, or history-associated areas. For example, in studying the American Revolution, one student might opt to write a short story about the life of a teenager during the Revolutionary period. Another might elect to apply key ideas about the American Revolution to an investigation of heroes then and now. Yet another might prefer to study ways in which the Revolution affected the development of science.

Adjustments based on learning profile encourage students to understand their own learning preferences. For example, some students need a longer period to reflect on ideas before beginning to apply them, while others prefer quick action. Some students need to talk with others as they learn, while others need a quiet work space. Some students learn best as they tell stories about ideas being explored, others as they create mind maps, and still others as they construct three-dimensional representations. Some students may learn best through a practical application of ideas, others through a more analytical approach.

Readiness-based adjustments can be created by teachers offering students a range of learning tasks developed along one or more of the following continua:

1. *Concrete to abstract.* Learners advanced in a subject often benefit from tasks that involve more abstract materials, representations, ideas, or applications than less advanced peers.

2. *Simple to complex.* Learners advanced in a subject often benefit from tasks that are more complex in resources, research, issues, problems, skills, or goals than less advanced peers.

3. *Basic to transformational.* Learners advanced in a subject often benefit from tasks that require greater transformation or manipulation of information, ideas, materials, or applications than less advanced peers.

4. *Fewer facets to multi-facets.* Learners advanced in a subject often benefit from tasks that have more facets or parts in their directions, connections within or across subjects, or planning and execution than less advanced peers.

5. *Smaller leaps to greater leaps.* Learners advanced in a subject often benefit from tasks that require greater mental leaps in insight, application, or transfer than less advanced peers.

6. *More structured to more open.* Learners advanced in a subject often benefit from tasks that are more open in regard to solutions, decisions, and approaches than less advanced peers.

7. *Less independence to greater independence.* Learners advanced in a subject often benefit from greater independence in planning, designing, and self-monitoring than less advanced peers.

8. *Quicker to slower.* Learners advanced in a subject will sometimes benefit from rapid movement through prescribed materials and tasks. At other times, they may require a greater amount of time with a given study than less advanced peers so that they may explore the topic in greater depth and/or breadth.

Strategies for Managing a Differentiated Classroom

Among instructional strategies that can help teachers manage differentiation and help students find a good learning "fit" are the following:

- use of multiple texts and supplementary materials;
- use of computer programs;
- interest centers;
- learning contracts;
- compacting;
- tiered sense-making activities and tiered products;
- tasks and products designed with a multiple intelligence orientation;
- independent learning contracts;
- complex instruction;
- group investigation;
- product criteria negotiated jointly by student and teacher;
- graduated task- and product-rubrics.

Final Thoughts

Teachers moving toward differentiated instruction in an inclusive, integrated middle school classroom find greater success if they (1) have a clear rationale for differentiation, (2) prepare students and parents for a differentiated classroom, (3) attend to issues of classroom structure and management as they move toward more student-centered learning, (4) move toward differentiation at a pace comfortable to both teacher and learners, and (5) plan with team members and other colleagues interested in differentiation (Tomlinson, 1995b).

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Instructional and Management Strategies for Differentiated, Mixed-Ability Classrooms

Carol Ann Tomlinson

Strategies	*Description of Strategy*	*Rationale for Use*	*Guidelines for Use*
Compacting	A 3-step process that (1) assesses what a student knows about material to be studied and what the student still needs to master, (2) plans for learning what is not known and excuses student from what is known, and (3) plans for freed-up time to be spent in enriched or accelerated study.	Recognizes large reservoir of knowledge in some learners Satisfies hunger to learn more about more topics than school often allows Encourages independence Eliminates boredom and lethargy resulting from unnecessary drill and practice	Explain the process and its benefits to students and parents Preassess learner's knowledge and document findings Allow student much choice in use of time "bought" through previous mastery Use written plans and timelines for accelerated or enrichment study Can use group compacting for several students
Independent Projects	Process through which student and teacher identify problems or topics of interest to the student. Both student and teacher plan a method of investigating the problem or topic and identifying the type of product the student will develop. This product should address the problem and demonstrate the student's ability to apply skills and knowledge to the problem or topic.	Builds on student interest Satisfies curiosity Teachers planning and research skills at advanced levels Encourages independence Allows work with complex and abstract ideas Allows long-term and in-depth work on topics of interest Taps into high motivation	Build on student interest Allow the student maximum freedom to plan, *based on student readiness for freedom* Teacher provides guidance and structure to supplement student capacity to plan and to ensure high standards of production Use preset timelines to zap procrastination Use process logs to document the process involved throughout the study Establish criteria for success
Interest Centers or Interest Groups	Interest centers (often used with younger learners) and interest groups (often used with older learners) can provide enrichment for students who demonstrate mastery/competence with required work and can be a vehicle for providing these students with meaningful study when required assignments are completed. In addition, all learners enjoy and need the opportunity to work with interest centers/groups in order to pursue areas of special interest to them. These centers/groups can be differentiated by level of complexity and independence required, as well as by student interest to make them accessible and appropriately challenging for all learners.	Allows student choice Taps into student interest—motivating Satisfies curiosity—explores hows and whys Allows study of topics not in the regular curriculum Can allow for study in greater breadth and depth Can be modified for student readiness Can encourage students to make connections between fields of study or between study and life	Build on student interest Encourage students to help you develop interest-based tasks Adjust for student readiness Allow students of like interests to work together Develop clear (differentiated) criteria for success For advanced learners, allow long blocks of time for work, change centers less often to allow for depth of study, make certain tasks are challenging
Tiered Assignments	In a heterogeneous classroom, a teacher uses varied levels of activities to ensure that students explore ideas at a level that builds on their prior knowledge and prompts continued growth. Student groups use varied approaches to exploration of essential ideas.	Blends assessment and instruction Allows students to begin learning where they are Allows students to work with appropriately challenging tasks Allows for reinforcement or extension of concepts and principles based on student readiness Allows modification of working conditions based on learning style Avoids work that is anxiety-producing (too hard) or boredom-producing (too easy) Promotes success and is therefore motivating	Be sure the task is focused on a key concept or generalization essential to the study Use a variety of resource materials at differing levels of complexity and associated with different learning modes Adjust the task by complexity, abstractness, number of steps, concreteness, and independence to ensure appropriate challenge Be certain there are clear criteria for quality and success

Strategies	*Description of Strategy*	*Rationale for Use*	*Guidelines for Use*
Learning Centers	Learning centers can be "stations" or collections of materials learners use to explore topics or practice skills. Teachers can adjust learning center tasks to readiness levels or learning styles of different students.	Allows matching task with learner's skills level Encourages continuous development of student skills Allows matching task with student learning style Enables students to work at appropriate pace Allows teacher to break class into practice and direct instruction groups at a given time Helps develop student independence	Match task to learner readiness, interest, learning style Avoid having all learners do all work at all centers Teach students to record their own progress at centers Monitor what students do and what they understand at centers Have clear directions and clear criteria for success at centers
Varying Questions	In class discussions and on tests, teachers vary the sorts of questions posed to learners based on their readiness, interests, and learning styles.	All students need to be accountable for information and thinking at high levels Some students will be challenged by a more basic thought question Others will be challenged by a question that requires speed of response, large leaps of insight, or making remote connections Teachers can "try out" students with varied sorts of questions as one means of assessing student progress and readiness Varying questions appropriately helps nurture motivation through success In oral settings, all students can hear and learn from a wide range of responses	Target some questions to particular students and "open the floor" to others Use open-ended questions where possible Use wait time before taking answers When appropriate, give students a chance to talk with thinking partners before giving answers Encourage students to build on one another's answers Require students to explain and defend their answers Adjust the complexity, abstractness, degree of mental leap required, time constraints, connections required between topics, etc., based on learning profile of the student being asked a question
Mentorship/ Apprenticeships	Students work with a resource teacher, media specialist, parent volunteer, older student, or community member who can guide their growth in a particular area. Some mentorships may focus on design and execution of advanced projects, some on exploration of particular work settings, some on effective development, and some on combinations of goals	Mentorships extend learning beyond the classroom Mentorships make learning a partnership Mentorships can help students expand awareness of future options and how to attain them Mentorships allow teachers to tap into student interest, strengths, and needs Mentorships have a low teacher-to-learner ratio (often one-to-one)	Match the mentor with the student's needs (interests, strengths, culture, gender) Be clear in your own mind about the goals of the collaboration Make sure roles of mentor, teacher, and parent are written and agree upon Provide appropriate preparation and instruction for mentors, including key information about the student Monitor the progress of the mentorship regularly and help problems solve if snags occur Connect what is learned in the mentorship to what goes on in class whenever feasible
Contracts	Contracts take a number of forms that begin with an agreement between student and teacher. The teacher grants certain freedoms and choices about how a student will complete tasks, and the student agrees to use the freedoms appropriately in designing and completing work according to specifications.	Can blend skill- and content-based learning matched to student's need Eliminates unnecessary skill practice for students Allows students to work at appropriate pace Helps students learn planning and decision-making skills important for independence as learners Allows teachers time to work with individuals and small groups Can encourage extended study on topics of interest Can foster research, critical and creative thinking, application of skills, and integrated learning	Blend both skill- and content-based learning in the contract Match skills to readiness of the learner Match content to readiness, interests, and learning style of student Allow student choice, especially in content-based portions of the contract Establish clear and challenging standards for success from the outset Provide rules for the contract in writing When possible, focus the contract on concepts, themes, or problems, and integrate appropriate skills into required projects or products Vary levels of student independence and time span of the contract to match student readiness

Note. From *How to Differentiate Instruction in Mixed-Ability Classrooms, (Appendix), by* C. Tomlinson, C. (1995), Alexandria, VA: Association for Supervision and Curriculum Development. Reprinted with permission.

Minibibliography

Gifted Education and Middle Schools Selected Readings

EJ402383 EA524120
Braddock, J. H. II (Feb 1990). Tracking the Middle Grades: National Patterns of Grouping for Instruction. ***Phi Delta Kappan, 71*****(6), 445-449.**

To shed light on appropriate grouping practices for early adolescents, this article presents current data on using between-class grouping and regrouping in American schools serving this population, based on the 1988 Johns Hopkins University middle school survey. Findings show that learning opportunities in the middle grades remain highly stratified.

EJ441230 EC602522
Clinkenbeard, P. R. (1991). Unfair Expectations: A Pilot Study of Middle School Students' Comparisons of Gifted and Regular Classes. ***Journal for the Education of the Gifted, 15*****(1), 56-63.**

Analysis of essays comparing experiences in gifted and regular classes written by sixth-grade gifted students found that many students felt teachers and peers outside the gifted class had unfair expectations of them. Other topics addressed by students included grading, group work, lack of acknowledgement for effort, treatment by peers, and teacher expectations. (DB)

ED353728 EC301759
Coleman, M. R., & Gallagher, J. (Nov 1992). Middle School Survey Report: Impact on Gifted Students. Chapel Hill, NC: Gifted Education Policy Studies Program.

This study investigated attitudes of educators from both the middle school movement and gifted education, by means of a survey of 400 members of relevant professional organizations. The survey focused on six interest clusters: (1) grouping strategies, (2) identification issues, (3) curriculum modifications, (4) teacher preparation, (5) program evaluation, and (6) the emotional/social needs of gifted students. Opposing attitudes were found for two clusters: first, grouping practices (with educators of the gifted favoring ability grouping and middle school educators opposing such grouping) and second, social development (with only middle school educators seeing the "gifted" label as creating social adjustment problems). On the remaining clusters the groups had the same opinions but differed in how strongly they felt. Educators of gifted students felt more strongly that the regular curriculum was not challenging enough for gifted students, that the programs for gifted students should address the emotional needs of the students, and that middle school teachers need more staff development in the characteristics and needs of gifted students. Educators of the gifted ranked their top three priorities as curriculum, teacher preparation, and appropriate identification while middle school educators selected curriculum, grouping practices, and teacher preparation as most important. The survey form and 24 references are attached.

EJ481450 EC608368
Elmore, R., & Zenus, V. (1994). Enhancing Social-Emotional Development of Middle School Gifted Students. ***Roeper Review, 16*****(3), 182-185.**

Thirty sixth-graders in accelerated mathematics classes were taught in cooperative learning teams for 12 weeks. Students appeared to benefit academically, personally, and socially from the cooperative learning strategies used to teach mathematics, cooperative learning skills, effective communica-

tions, internal locus of control, and personal responsibility in decision making.

EJ402382 EA524119
Epstein, J. L. (Feb 1990). What Matters in the Middle Grades--Grade Span or Practices? *Phi Delta Kappan, 71*(6), 438-444.

A 1988 Johns Hopkins University survey gathered data on organizational variations among schools containing Grade 7 to study how grade span affects school programs, teaching practices, and student progress. This article reports selected results on the relation of grade span to school size, grade level enrollment, school goals, report card entries, and relevant trends.

ED330082 EA022805
Epstein, J. L., & Mac Iver, D. J. (Feb 1990). Education in the Middle Grades: Overview of National Practices and Trends. Baltimore, MD: Center for Research on Elementary and Middle Schools, The Johns Hopkins University.

In spring 1988, the Johns Hopkins Center for Research on Elementary and Middle Schools (CREMS) conducted a national survey of principals in 2,400 public middle grade schools that include Grade 7. Using the 1988 survey data, this document presents an overview of educational approaches and practices in schools that serve early adolescents. Topics examined include: (1) grade span, (2) size, (3) grouping, (4) number of teachers per students, (5) changing classmates, (6) homeroom and advisory periods, (7) guidance counselors, (8) teams of teachers, (9) curriculum, (10) instruction, (11) goals for students, (12) transitions and articulation practices, (13) remediation, (14) report card entries, (15) teacher certification, and (16) teacher talents. This document also summarizes principals' reports of their overall evaluation of present practices and presents four conclusions regarding middle grades reform based on survey data. The survey is appended.

ED344404 EC301133
Gallagher, J. J. (Mar 1992). Gifted Students and Educational Reform. In *Challenges in Gifted Education: Developing Potential and Investing in Knowledge for the 21st Century* (pp.19-25). Columbus: Ohio State Dept. of Education.

This paper examines gifted education in the context of current educational reform efforts. It offers a rationale for the differentiated education of gifted students based on American values and equitable allocation of educational resources. Examples are offered of curriculum content modification for math, science, language arts, and social studies that utilize four approaches: (1) acceleration, (2) enrichment, (3) sophistication, and (4) novelty. The relationship of gifted education to the America 2000 program and to the six national education goals is noted. The paper then reviews major reform efforts in the areas of accountability, the middle school concept, and cooperative learning. Issues remaining to be solved are also identified and include personnel preparation, unidentified students (e.g., the culturally different), curricular options, strategies and metathinking, and the value of the term, "gifted," itself.

ED319747 TM014820
Ingels, S. J. (Apr 1990). Findings from the NELS:88 Base Year Student Survey. National Opinion Research Center, Chicago, Ill. Paper presented at the Annual Meeting of the American Educational Research Association. Washington, DC: National Center for Education Statistics (ED).

The National Education Longitudinal Study of 1988 (NELS:88), a longitudinal study sponsored by the National Center for Education Statistics, provides trend data about transitions experienced as young people develop, attend school, and embark on careers. The study began with a national sample of about 26,000 eighth graders in 1988 and follows these students at 2-year intervals through high school and further. Findings of the base year are summarized, drawn from the descriptive summary "A Profile of the American Eighth Grader" by A. Hafner and others (1990). Characteristics of sample members, in-school and out-of-school experiences, and aspirations and choice behaviors are described. The paper is divided into three sections: (1) background on the study; (2) cross-sectional findings from the NELS:88 base year, with 24 tables and 16 graphs; and (3) issues for the next wave of data. Appendix

1 describes generating the sample; Appendix 2 gives a chart of key questionnaire items.

EJ428991 JC505707
McEwin, C. K., & Thomason, J. (Apr 1991). Curriculum: The Next Frontier. ***Momentum,*** **22(2), 34-37.**

Discusses the national movement to improve middle school education with respect to school reorganization, curricular issues, instructional strategies, and various ways of applying the middle school concept.

EJ402386 EA524123
McPartland, J. M. (Feb 1990). Staffing Decisions in the Middle Grades: Balancing Quality Instruction and Teacher/Student Relations. ***Phi Delta Kappan, 71*****(6), 465-469.**

Staffing patterns can significantly affect educators' efforts to provide high-quality instruction and create positive teacher/student relations in the middle grades. State data and Johns Hopkins University survey results are used to show how staffing patterns serving one goal may interfere with accomplishing another goal. Corrective staffing measures are suggested.

EJ408482 EA524425
Peterman, F. P. (May 1990). Successful Middle Level Schools and the Development. ***NASSP Bulletin, 74*****(526), 62-65.**

Discusses Joan Lipsitz's 1984 treatise on ideal middle level school characteristics. Many middle schools' creative approaches to programming and instruction (through interdisciplinary team teaching, interest-based activities, thematic schoolwide events, creative problem-solving, and hands-on experience) and responsiveness to young adolescents' developmental needs embody the best features of effective gifted programs.

ED327047 EC232699
Schatz, E. (Feb 1990). Ability Grouping for Gifted Learners as It Relates to School Reform and Restructuring. Madison: Wisconsin State Dept. of Education.

This monograph uses a question-answer format to address issues concerned with meeting the needs of gifted students as Wisconsin schools restructure and change grouping practices as part of raising standards of learning for all students. Among 12 questions considered are the following: (1) Aren't some of the principles of middle level education, cooperative learning, and whole class instruction in reading harmful from the standpoint of providing appropriate programs to gifted students? (2) Isn't acceleration a necessary component of gifted education but contradictory to the middle level philosophy? (3) If one views middle level education as anti-tracking and anti-ability grouping, then how is grouping at the middle of the pyramid ever acceptable? (4) Doesn't participation in Midwest Talent Search promote labeling and an "earlier is better" approach to gifted education? (5) Don't research reports and declining test scores clearly support as little ability grouping as possible at all levels of education? (6) Won't cooperative learning increase boredom in gifted students and hold them back? (7) How can young gifted readers be challenged by whole class instruction in reading? and (8) How can we be sure school districts are asking the right questions about gifted education as these strategies are implemented?

EJ420045 EC232396
Sicola, P. K. (Fall 1990). Where Do Gifted Students Fit? An Examination of Middle School Philosophy as It Relates to Ability Grouping and the Gifted Learner. ***Journal for the Education of the Gifted,14*****(3), 37-49. Special Issue: Educational Reform: Impact on Gifted.**

The emphasis of middle school philosophy on heterogeneous grouping is examined in relationship to the needs of gifted learners. Arguments supporting such grouping based on developmental needs of young adolescents, social discrimination, and the need for positive role models are considered. Cooperative learning is seen to be an unproven instructional method with this population.

EJ316881 EC172323
Stanley, J. C. (Feb 1985). A Baker's Dozen of Years Applying All Four Aspects of the Study of Mathematically Precocious Youth (SMPY). ***Roeper Review, 7*****(3), 172-175.**

Since its inception in 1971, the Study of Mathematically Precocious Youth has expanded from a local program serving 19 mostly seventh graders to a national program

with an enrollment of 1,600. This article discusses trends experienced during the 13-year period and their implications for the program's future.

ED344408 EC301137
Stevens, M. (Mar 1992). School Reform and Restructuring: Relationship to Gifted Education. In *Challenges in Gifted Education: Developing Potential and Investing in Knowledge for the 21st Century* (pp. 49-55). Columbus: Ohio State Dept. of Education.

This chapter reviews recent trends toward increasing emphasis on excellence in American business and applies these trends to school reform and restructuring in the context of gifted education. First, it notes the main ideas of recent business and education excellence studies that call for radical changes in the American education system. Examined is the dilemma of balancing the educational demands of equity and excellence especially in an age of major demographic shifts. A quality-oriented paradigm is proposed that merges equity and excellence and focuses on the individual, thus replacing the industrial model paradigm which focused on the "system." The issue of ability grouping is considered and research supporting within class grouping is cited. Concepts underlying the middle school approach are noted as another example where the equity/excellence dilemma and grouping concerns emerge. "Equifinality" is offered as a concept that suggests many potential ways to reach resolution especially when the focus is always on the individual gifted learner and the teacher/facilitator.

EJ445874 EC603237
Tomlinson, C. (Spr 1992). Gifted Education and the Middle School Movement: Two Voices on Teaching the Academically Talented. *Journal for the Education of the Gifted, 15*(3), 206-238.

Comparison of the fields of gifted education and middle school education indicates some major differences in such areas as organizing for instruction, how students learn, mainstreaming, delivery of instruction, affective needs, and the concept of giftedness.

EJ481449 EC608367
Tomlinson, C. (1994). Gifted learners: The Boomerang Kids of Middle School? *Roeper Review, 16*(3), 177-182.

A variety of beliefs and practices central to middle schools may cause special difficulties for gifted learners. Such practices often focus on potentially competing goals of student competencies versus student excellence and include such practices as heterogeneous grouping, cooperative learning, and an absence of clearly defined middle school curricula.

EJ481451 EC608369
Van-Tassel-Baska, J., Olszewski-Kubilius, P., & Kulieke, M. (1994). A Study of Self-Concept and Social Support in Advantaged and Disadvantaged Seventh and Eighth Grade Gifted Students. *Roeper Review, 16*(3), 185-191.

This study investigated differences among intellectually gifted students of junior high age participating in full-time intensive programs for the gifted. Findings indicated some differences based on ethnicity and gender, but most differences were observed between lower and higher socioeconomic groups, particularly for social support and social and behavioral self-concept.

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APPENDIX A

Participants in the Symposium

The Westfields Conference Center, Chantilly, VA
January 7 - 9, 1995

Name and Affiliation

John Arvizu
Student, Rio Grande High School
Albuquerque, NM

Fran Ayers
Parent of a gifted/learning disabled student
Albuquerque, NM

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Phoenix, AZ

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Lawrence, KS

Barbara Forshag
Teacher, Landry Middle School
St. Charles Parish Schools
Hahnville, LA

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Burlington, VT

Sherrye C. Thompson
Parent of a gifted middle level student
Past President /Executive Board
Special Liaison
Mississippi Association for Gifted Children
Brandon, MS

Carol Tomlinson
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Jerrie Ueberle
President
Global Interactions
Phoenix, AZ

Ben Webb
Student, Eldorado High School
Albuquerque, NM

Students Featured in the Video

Alan Baldwin
Patricia Bing-Grant
James Bryant
Alicia Crittendon
Tie Collis
Thomas J. Eischeid
Mathew Dennis
Michael Ferguson
Brian Ford
Steve Garn
Ka Chun
Alan Leung
R. Marquart
Natalie C. Moros
Amanda Picard
Melanio G. Quezada
Nicole Snider
Chris Stratton
Amy Robbins
Martha Venturini
Alicia Williams

APPENDIX B

In Balance: Gifted Education and Middle Schools

Video Script

Following is a transcript of the closed captioned video script. The name of the person speaking is in brackets directly preceding his or her remark. The bulleted items on page 52 appear in the video and are reproduced here to assist those who want to give these items additional thought and special attention.

* * *

[Narrator]

Historically, tension has existed between the fields of gifted education and middle-school education, leaving some advocates of each educational practice suspicious of the other and leaving middle-level students who are advanced in one or more dimensions of learning in an educational no-man's land. While some legitimate areas of disagreement persist, there are enough areas of shared belief to begin bridging the practices of gifted education and middle-level education. This video provides an overview of some areas of agreement between the fields, some areas of tension, and some promising directions that could engage educators in mutual planning of appropriate services for all middle-school students, including those we sometimes call gifted.

[Narrator]

Decades ago, the accepted model for educating young adolescents was junior high, a scaled-down version of high school. Then educators came up with a new design—middle school. Its smaller, stable groups and teams of teachers are intended to meet the social needs and learning styles of these no-longer children. But does the middle school do a better job of meeting the academic needs of students, particularly those who are gifted? How do we do it all while keeping the entire system in balance?

In January of 1995, The Council for Exceptional Children convened a symposium of educators, parents, administrators, and students to explore the many questions surrounding the education of gifted middle-school children. The diverse group included individuals with expertise in either gifted education or middle-level education. Whatever their divergence of opinion, they all agreed on two ideas...

1. All children must feel that they are valued members of their community.
2. All children should be challenged in school.

These ideas proved to be a strong foundation for seeking common ground. Some tensions appeared to be fundamental, though.

[James Gallagher]

You need to create an environment for them which allows these abilities to come forth and to bloom and to do well. Not just for them, but, on a highly selfish basis, for all of us because we can't afford in the 21st century to be losing

talent that's going to be necessary for us to maintain our role in the world.

[Paul George]

I think I hear an understanding emerging that schools are systems and that when you change one part of a system, there's a cost. And what I hope we're becoming aware of is that gifted programs involve costs that I'm not sure other children should be asked to pay.

[Sherrye Thompson]

If that child is gifted and needs special services, then they should have it. I don't see it as an either/or. I don't see it as a reward. I see it as just serving the needs of the children, whatever those needs may be.

[Narrator]

Although participants in the meeting expressed widely divergent opinions, they were all committed to serving children, who have their own ideas.

[Student—Patricia Bing-Grant]

I like stuff where you can actually go research by yourself or go look up and have ideas of your own.

[Student—Nicole Snider]

Like cooperative learning, especially when it's two people, not too many people, because if you're in too large of a group, you kind of get lost, your voice gets lost, not as many people hear you. But in a group where you can actually work, not one where you chat.

[Narrator]

Advocates for gifted and talented education focus on excellence for each student, usually emphasizing academic areas.

[James Gallagher]

And we're talking now not about native ability as much as native ability married to opportunity and practice. You see, practice is the issue that...if you practiced three hours a day—whatever you're doing, whether it's playing the violin or basketball or learning history—and I practice a half-hour a day, you're going to be better than I am, and you probably will be so much better that you would need additional kinds of opportunities to develop your skills even further.

[Narrator]

Middle-school advocates focus on what they call equity in educational opportunity.

[Paul George]

Schools are about the redistribution of future wealth. That's what they're about. They're not about talent development. They're not about taking each child as far as he or she can go. They're about redistributing the wealth of the future. That's what they've always been about. Sorting, providing opportunities for some and denying them to others. That's why things are the way they are. What I would like to do is to start everybody from the starting line, and let the—to use the old example—the level playing field determine who gets what. And so my interest is in equity.

[Narrator]

As a rule, middle-school advocates also place a greater emphasis on the social, emotional, and developmental needs of children in the middle years.

[Barbara Forshag]

I really think meeting the affective needs of a middle-school student is more important than the academics, and I use content to teach middle-school kids how to be nice people.

[Narrator]

The GT specialists share this concern but say that learning should not take a back seat. That issue boils down to a central question—

[Lisa Horak]

How do we meet the needs—all of the needs—of a middle-level student, including appropriately meeting the needs of those students identified as gifted?

[Narrator]

Before that question could be answered, the participants dealt with many of the political and socioeconomic complexities surrounding gifted education.

[Paul George]

If you went into a school where I live and work and looked at the gifted program, it would be

all white... Or almost all white. The beautiful diversity we saw here yesterday is not characteristic of gifted programs around the country.

[James Gallagher]

One of the discoveries that has been made over the years in programs for gifted students is the disproportion that shows up there in these programs in terms of males versus females or in terms of youngsters of ethnic groups and racial groups. For example, Asian kids show up twice their number in the population. Other minority groups, like Hispanics, show up less often. No one has any reason to believe that the basic ability that you're born with is different for any ethnic group or racial group. There's lots of differences within the group, but not between groups. The problem that the schools have is that if the gifted program is the only good thing that's going on, then of course, every parent wants their kid in that program.

[John Arvizu]

Some of the parents don't hear about it, and in some cases, some of the parents are too busy. Gifted programs in a richer town, in a richer neighborhood, how they have a lot more computer access, a lot more resources brought into their school.

[Paul George]

You take a wonderful idea like gifted education and you put it down in the cauldron of American public politics, and you put it into a public school, and all of a sudden all of the forces in that community come to bear on it. That's what ends up being the case. But I don't think many people have conscious racist designs behind it.

[Narrator]

While participants perceived political and socioeconomic issues very differently, they agreed that the resistance would fade if the selection process for specialized programs were based on the specific needs of these students.

[Paul George]

If the concerns about race and social class were not important, I believe in delivering limited amounts of gifted services to those children so long as those children don't get more of the resources for learning in that building than other children do.

[John Arvizu]

What I see is there's a lot of gang members who are really talented. It's just that they were never offered an opportunity. Either at home, they didn't get any support, and then they'd try to find it at school, but if the school doesn't offer the support, then they'd turn to a different type of family.

[James Gallagher]

One of the purposes of our efforts now have been to locate youngsters that we call hidden talents, youngsters that have the ability, but it is shielded in one way or another by lack of opportunity or by different environmental settings which doesn't support the development of this native ability.

[Thomas Erb]

Some agreement about the focus needing to be on the assessment of student needs rather than the identification of learning.

[James Gallagher]

Our real responsibility here, I think, starts very early, and it is trying to identify those youngsters who ordinarily wouldn't be found at the kindergarten, first- and second-grade level, and then by developing their abilities and capabilities so that they will be able to be eligible for these special programs.

[Narrator]

There is also the perception that gifted students may have unique affective and emotional needs.

[Woman's voice—Barbara Forshag]

Gifted children sometimes have greater affective needs than middle-school students because they know they are bright. They're trying to deal with their intelligence and their desire to know and do more and yet not be identified as a nerd.

[Sherrye Thompson]

Sometimes, you have to stop and bring yourself up short and realize that on an emotional level and a maturity level to a great extent, they're still 13 or 16. They still have those learning experiences to do. And many times, the outside world, because they are so awed or so...taken in by their intelligence and their brightness, and

they're usually very verbal, very good communication skills, when they see all this, they tend to think that the whole, complete package is there and that they don't see the other vulnerable sides and the other problems and needs that they still have so it's a real challenge.

[Narrator]

But what exactly makes a child gifted?

[Sherrye Thompson]

A gifted child is a very, very complex creature. I live with two, and there is no true stereotype. There is really no accurate definition, because they have so many different, varying aspects to the personality, their needs, their outlook.

[James Gallagher]

What we're really inferring here when we talk about gifted is the aptitude for learning complex ideas and systems of ideas.

[Thomas Erb]

When we use the term "gifted student," what do we mean by it and what are we conveying to a public that maybe already has the notion that means one thing—that means a high IQ score?

[James Gallagher]

Every child has gifts, and every child is valuable. Not every child is gifted. As I said earlier in the conference, the trouble with the statement "every child is gifted" is that you didn't finish the sentence. Every child is gifted at mathematics—no. Every child is gifted in the arts—no. Every child is valuable and has a role to play in society—yes. See, I worked for many years with youngsters who had mental retardation or youngsters that had severe learning disabilities, and they are valuable, too. They're not gifted in the sense that we use that term, in terms of the aptitude for learning, in terms of the ability to understand complex systems of ideas and knowledge.

[Narrator]

Gifted students are as diverse as any other group. Diverse in background, in personality, and in interests, but they do seem to share some opinions regarding their school experience.

[Student—Steve Garn]

If I were in a regular math class, not an advanced math class, I wouldn't feel challenged, because I need to be in the accelerated because I've already learned all there is to about the normal one.

[Student—Nicole Snider]

I define fun as challenges and learning, being able to think, solving problems, and just feeling good about yourself.....

[Student—Nicole Snider, con't]

... Just feeling good about yourself and... accomplishing things with or without the help of your teachers.

[Student—James Bryant]

Yes, I think I'm mature enough to make choices about what I want to do.

[Narrator]

As the symposium progressed, it was interesting that participants agreed that the effective middle-school program should offer a wide variety of services and options, some of which meet the needs of gifted students.

[James Gallagher]

The real challenge of a school is to have a wide variety of things going on.

[Sherrye Thompson]

Even a gifted child is not going to accelerate in all areas. Your child could be a 7th grader and need to be in what is traditionally that same level of education in that subject area but be precocious in math and be farther on.

[Student—James Bryant]

Sometimes I can speak on a different level, like, some of the students wouldn't know what I'm talking about. I like being in a class where gifted students and other students are mixed together because it gives me more variety of people. And I wouldn't have so many friends if it was the other way.

[Chris Stevenson]

The alternative is, and I'll try to do this briefly, that students in groups of 50 or 60 are members of teams that are more like extended families than like a sports team, where the students are on that team for at least two years and maybe three so that leadership and initia-

tive can be cultivated over a period of time, where at least half of the time, the students make some choices about what curriculum options they would pursue. It's also a setting in which students are extensively involved in setting their own learning goals, and the job of teachers in their goal setting is to guide them, to help them see the possibilities, and to encourage them as needed to stretch themselves beyond a comfortable level of work.

[James Gallagher]

We actually were talking about one strategy that is very receptive to me from my standpoint, and that is to have this team of teachers we're talking about from different disciplines and to have specialists in gifted education working with that team to help them adapt their lessons to make them more challenging for these youngsters. To me, that's a good use of the personnel that you can find in the middle school, and it doesn't rely on the individual teacher to be everything to everybody.

[Paul George]

I think Jim's suggestion about organizing and operating in teams, for example, where a team of four teachers plus a gifted consultant, if you want to put it that way, or in addition to that, maybe an LD teacher, working together with planning time and resources could provide success for all the kids on that team. I think that's going to be good enough, or at least given the resources that the people are giving the public schools, I think we can do that. If they're not satisfied with that, they'll have to give us more money. But I think we can do enough to be proud of.

[Carol Tomlinson]

One of the things that we're looking for in education of talented students, which I think is similar to a need that we would have for all students is probably not fun but engaging tasks, things that swallow us whole. It's just that frequently the tasks which absorbs one of us may not another because of the level of advancement, the kind of interests, the maturity level among many other things.

[Narrator]

Of course, one question immediately arises—how close are we to using that model in public schools already?

[Chris Stevenson]

The prevailing paradigm in schools, in middle-level schools, is still very much a high-school approach to education. It's teachers organized by subject matter, kids changing classes every 48 minutes to an hour, a lot of teacher talk and students carrying out assignments doing what appear to be a lot of busy-work kinds of homework assignments, grades being the goal, et cetera. That still describes far too much the nature of curriculum and pedagogy in middle-level schools.

[Narrator]

How do we get there from here? While no agreement was reached about specific policies, structures, and strategies, there were agreements about steps to be taken toward developing those practical outcomes. The first of these steps was continued collaboration.

[Paul George]

I, for example, would be willing to... And I've never found many people that I've disagreed with more than Jim, but I would be willing for the two of us to spend more time together and to continue to talk. Think we ought to do that at other places where we can help to change the culture of the organizations we're a part of. There's no doubt in my mind that when the middle-school concept and the culture associated with that crystallized 20 years ago, we changed practice. We changed practitioners, because they care what groups like this think. So I guess what I'm saying is, we need to find ways of continuing this, broadening the dialogue, without giving up on directly affecting practice. Having, you know, a symposium in front of 5,000 people at the national middle-school association would be a good thing to do, or at ASCD or... Finding ways to do more writing together. Finding ways of publicizing model programs, endorsing them together are things that we can do directly, and I certainly would be eager to do.

[James Gallagher]

I go away with the notion that the middle-school movement has a lot to offer gifted students, much more than any alternative that I can think of, and I want to do my best to find ways to find the bridges.

[Carol Tomlinson]

I'm not very comfortable with the hostility between gifted and middle-school. I do think that there probably are some differences which on some level will continue because we don't altogether have and shouldn't altogether have the same focus, but for me, I have faces that go with names and a conversation that has been a positive and access for a future and a sense of developing a vocabulary that we can work with together and a way probably to converse with one another in spite of some differences that might remain, and I think for me as a professional, that's just a very positive climate change and one that probably helps me and, I hope, some of the others of us be more productive.

[Narrator]

Improved teacher training was identified as another clear path to success.

[James Gallagher]

If you can show that you can do it, then don't be passive about it in terms of waiting for people to come to see how wonderful you are but to use the people, the master teachers, as trainers to go out in the field and to meet with other schools and other school systems and to provide them with the training necessary for them to do similar kinds of things. Not the same thing, because they're different communities, and they'll want to do it somewhat differently, but the essence of the thing that can be presented.

[Barbara Forshag]

If you don't give your teachers the training and the incentive and the motivation to do this, they're not going to come up with it on their own.

[Sherrye Thompson]

I think the role of education in this nation should be to educate every child to their fullest potential and that we should be willing to put money, time, effort, training behind whatever it takes to provide adequate services for every child.

[Narrator]

Middle-school students had clear suggestions about what these newly trained teachers should be able to do.

[Student–Chris Stratton]

It's hard, and it might cost a little more money and time, but try to get the teachers to integrate the stuff they're learning out of the textbooks into actual experiments. I mean, it doesn't have to be a project, say as a science project, but they can just, a really quick example of it or give you an example of it in real life.

[Student–Patricia Bing-Grant]

I think if teachers would be more... I guess you could say caring, actually caring about what they're doing and how they can do it, and get in with the kids and learn what their strengths are.

[Student—Chris Stratton]

You can go at your own pace in gifted programs, and the teachers are there just to encourage you and help you whenever you have just a little bit of difficulty, and in your regular classes, you kind of have to go the pace with the rest of the class, and sometimes some of the kids are having trouble and you have to stay behind, and you're kind of learning the same stuff over again or it's dragging.

[No speaker]

Suggested Alternatives

- create family-like teams
- provide curriculum options
- students set learning goals
- include GT specialist on teams
- use consultant model
- provide engaging tasks
- continue collaboration
- change educational practice
- broaden dialogue
- publicize model programs
- build bridges
- develop common vocabulary
- use master teachers as trainers.
- provide leadership
- provide individualized services

Students Want

- active learning
- real world applications
- involved teachers
- flexible pacing

[Narrator]

With a shared paradigm in hand, the educators turn to face the world and find more challenges. Where's the money? Where's the political support?

[Sherrye Thompson]

Do not underestimate or overlook the power of parents as a collective group. And I say that from experience. By empowering the parent, which when you stop and think about it, you think how many children you're serving and then you hopefully multiply that by two parents, you see what a large force you have out there, and if we can get this message across to the parents based on what we heard from the children, and if they will talk with their children and see the same needs, then you will have a massive force that can much more quickly get this accomplished.

[Narrator]

But what banner should those parents be marching behind?

[Carol Tomlinson]

One of our difficulties is that in middle-school education, there has never been a really clear articulation of what the curriculum should be. In gifted education, we have been mushy as well and have not articulated really clearly what a curriculum which provides escalating excellence would be.

[James Gallagher]

I think that the challenge that we all have is how do you adapt a curriculum—first of all, how do you have a curriculum that's challenging enough for all the kids? And how do you adapt it then for kids with special needs?

[Narrator]

Of course, it's essential not to forget the ones at the center of all this effort.

[Chris Stevenson]

When we talk about needs of young adolescents, it's fair to ask whose definition of needs? Because we understand some of the needs they have, and that's important, but they understand some of the needs they have, and unless we ask them, we're not likely to know. They can have an authentic voice in the design of their own program.

[Narrator]

Because when you ask the question, the answers you get can be insightful.

[John Arvizu]

To get an ideal gifted middle school, I believe that we have to start with the teacher preparation and how we prepare and train and develop our teachers because right now, it seems that a lot of them are just—for example, in my case, they don't want to be there. They just do it for the job, and from what I see in the symposium, these people care a lot about the kids, and I believe that teachers being properly trained into dealing with either the gifted mind or the regular middle-school-level mind, just making it fun for the kids and making it exciting, making the curriculum more appealing to them, basically, that's where I would start, and then it would go on to other things, for example... Getting the parents involved, the community involved, finding out programs, getting resources, bringing in the community to talk about what is actually the gifted program and how to get their parents involved, like, for example, mine—how to break that language barrier. Basically, that's how I would try to at least start to make a change.

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Book A 38-page report that summarizes the outcomes of a symposium that took place May 20-21, 1994. The report examines the fundamental tensions as well as the shared commitments of reformers and gifted advocates. A point of balance is found in a student-centered perspective. Barriers to progress and bridges for future cooperation are specified. (**#P5088** book only, ISBN 0-86586-260-5). **$15** CEC members **$10.50**

In Balance: Gifted Education and Middle Schools

Video The focus is on the specific tensions between advocates for the "middle-school" philosophy and advocates for gifted programs. In this video considerable footage is devoted to hearing the voices of the students themselves. We learn that students want both integrated and separate learning experiences at different times and for different purposes. Once again, common ground is identified as both groups of educators resolve to try to establish learning environments where all students' needs a: met. (**#M5148**, includes 30-min. close captioned video and book). **$99** CE Members **$69.30**

Gifted Education and Middle Schools

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